The Changing Academy – The Changing Academic Profession in International Comparative Perspective 8

Ulrich Teichler
Ester Ava Höhle *Editors*

The Work Situation of the Academic Profession in Europe: Findings of a Survey in Twelve Countries

Springer

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Scope of the series

As the landscape of higher education has in recent years undergone significant changes, so correspondingly have the backgrounds, specializations, expectations and work roles of academic staff. The Academy is expected to be more professional in teaching, more productive in research and more entrepreneurial in everything. Some of the changes involved have raised questions about the attractiveness of an academic career for today's graduates. At the same time, knowledge has come to be identified as the most vital resource of contemporary societies.

The Changing Academy series examines the nature and extent of the changes experienced by the academic profession in recent years. It explores both the reasons for and the consequences of these changes. It considers the implications of the changes for the attractiveness of the academic profession as a career and for the ability of the academic community to contribute to the further development of knowledge societies and the attainment of national goals. It makes comparisons on these matters between different national higher education systems, institutional types, disciplines and generations of academics, drawing initially on available data-sets and qualitative research studies with special emphasis on the recent twenty nation survey of the Changing Academic Profession. Among the themes featured will be:

1. Relevance of the Academy's Work
2. Internationalization of the Academy
3. Current Governance and Management, particularly as perceived by the Academy
4. Commitment of the Academy

The audience includes researchers in higher education, sociology of education and political science studies; university managers and administrators; national and institutional policy-makers; officials and staff at governments and organizations, e.g. the World Bank.

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Chapter 1
The Academic Profession in 12 European Countries – The Approach of the Comparative Study

Ulrich Teichler and Ester Ava Höhle

1.1 The Concept and the Thematic Areas of the Study

1.1.1 The Setting and the State of the Knowledge

Higher education increasingly has become a topic of attention – both in the public discourse and in research activities. Systematic knowledge is becoming a more and more important resource for technological progress, economic growth, societal well-being and cultural enhancement. Higher education is the core institutional sector for the generation and dissemination of systematic knowledge and for training persons to handle knowledge in all sectors of society. As a consequence, attention is paid notably to the quantitative and structural development of higher education, to research, teaching and learning as well as to governance, organisation and funding of higher education (cf. various overviews in Clark and Neave 1992; Forest and Altbach 2006).

The academic profession, i.e. the persons responsible for the core functions at higher education institutions and possibly at neighbour institutions (e.g. public research institutions and other tertiary education institutions), has *not been in the limelight of discussion and analysis* as often as other various key developments and activities of higher education. But the academic profession needs to be addressed as it has been become clear that the situation, the views and activities of the academic profession deserve special attention.

In general debates about the *characteristics* of the academic profession, four issues tend to be underscored. First, the process of becoming a regular member of the academic profession clearly differs from that of other professions in that the

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initiation process is very long and highly selective; only after a period of 10–15 years beyond graduation, which is characterised by concurrent continuous learning and productive work and which is successfully "survived" only by a minority of those initially choosing that path, those embarking on a professor position are eventually considered full members of the academic profession. Second, the academic profession has succeeded more or less all over the world in advocating freedom of research and self-regulation of the universities as good ways to attain highest quality and relevance of academic work. Third, the academic profession is viewed as central to both the development of the academic knowledge system and to be the "key profession" (Perkin 1969) in shaping the top knowledge in all sectors of the society (e.g. the legal system, the social system, the economic system, etc.). Fourth, a close link between teaching and research tends to be viewed as essential for the university, which in most countries is the apex of the higher education system; this should help ensure that teaching is always in touch with the search for new knowledge and that teaching is shaped by the most recent research developments.

Debates also underscore that the academic profession (AP) is perceived in the public discourse and in higher education research as an ambivalent profession shaped by *changing conditions and contradictory expectations*. At least, the expansion of higher education since the 1960s seems to have had a paradoxical influence on the academic profession. Its *importance grew* as the creator and disseminator of advanced knowledge as well as shaping knowledge in all other professional areas. Yet the academic profession experienced a *loss of status, increasing workload and a gradual diminution of professional self-regulation* (see Enders 2006). The academics seemed to be a "victim of their own success" (Enders and Teichler 1997).

Since the 1990s, *two tensions* have affected the academic profession most strongly: the *relevance of academic work* and *academic power*. First, academics were increasingly expected to be relevant through serving the 'knowledge society'; yet they were viewed to serve innovation best, if they do not strive to fulfil the expectations to create useful knowledge. Second, their organisational setting was rearranged to increase the power of those coordinating their work; yet they were still expected to exert a strong influence on their institutional environment through the creation of essential academic work. These developments resulted in new settings for the tasks and functions of the academic role, changing career patterns as well as employment and working conditions, new forms of division of work and cooperation between the academics and other professionals within higher education institutions and altogether in an increasing diversification of higher education (for overviews, see Altbach 2000; Enders 2001; Farnham 1999; Locke and Teichler 2007).

In recent years, the *published research literature* has discussed these developments with reference to terms such as 'knowledge society' and 'knowledge economy', 'internationalisation' and 'globalisation', 'evaluation' and 'output-oriented steering', 'the managerial university', 'competition' and 'incentive steering'. Little evidence, however, is available on whether these changes in the societal contexts and institutional settings are powerful forces affecting the values, attitudes and professional practices of the academic profession. Obviously, the academic profession is embedded in a changing institutional context that is likely to leave its imprints on

the profession as a collective and on individual academics. The interests and preferences of the academics, and the social norms that are considered important for the academic profession, will, however, mediate and influence their effects. Also, more insight is needed how far these factors play a similar or different role across economically advanced countries. Trends as regards the changing contexts and conditions of the academic profession are often discussed as general phenomena, whereby the degree of common or divergent developments across countries have been comparatively analysed only to a limited extent (see Trowler 1998; Henkel 2000; De Boer et al. 2005, 2007; Fulton 2003).

1.1.2 The Predecessor and Partner Surveys

The approach of this study follows a non-deterministic and cross-national comparative stream of thinking and analyses (Freidson 1983; MacDonald and Ritzer 1988) in studying the impact of institutional change on the academic profession. It is based on the assumption that societal and institutional change matters and is interrelated with professional attitudes and practices but not necessarily due to a universal and direct causality between institutional change and professional change.

This study draws on *a first comparative questionnaire survey undertaken in the early 1990s*. It was initiated by Carnegie Foundation for the Advancement of Teaching (Princeton, NJ, USA). The Carnegie Foundation had already undertaken national surveys in the US since the late 1960s; around 1990, Ernest Boyer, its president, was convinced that a similar survey would be useful to understand common features and specific characteristics of the academic profession across the globe. Eventually, a substantially different survey, the *Carnegie Study* was undertaken in a number of countries in 1992. With the support and coordination of the Carnegie Foundation, scholars from 14 countries were involved: Australia, Brazil, Chile, Germany, Hong Kong, Israel, Japan, the Republic of Korea, Russia, Sweden, Mexico, the Netherlands, the United Kingdom and the United States of America. The analysis of almost 20,000 responses led to a number of international (Boyer et al. 1994; Altbach 1996; Teichler 1996) and national reports (e.g. Altbach 1996; Enders and Teichler 1995a, b; Arimoto and Ehara 1996) on the academic profession.

The results of the Carnegie Survey suggested, first, that the academic profession had developed towards a "profession under pressure": the higher education expansion and assumed growing relevance had created more expectations and less privileges than one could have assumed from the outset; yet, notwithstanding these pressures, academics remained quite satisfied with their role. However, due to country variations, claims of similar trends worldwide had to be treated with caution.

When scholars from various continents met in 2004 to discuss the feasibility of a new comparative survey of the academic profession, they noted that some issues could be surveyed in a similar way, thereby measuring change over time. Altogether, however, they came to the conclusion that there are substantial changes in the socio-economic environment and in the organisational fabric of higher education systems.

In relation to the *societal developments,* attention was paid to three key issues. First, the *relevance of knowledge* needed to be focused on. Increasingly, knowledge seems to be expected to demonstrate its relevance to technological innovation and economic growth as well as to societal well-being and cultural identity. The search for societal and economic relevance in teaching and research seems to challenge traditional norms and rewards more exclusively based on principles of cognitive rationality and academic excellence (Carayannis and Campbell 2006; Owen-Smith and Powell 2001). How do academics perceive and interpret the striving for relevance in higher education and what challenges do they note to the (re-)definition of their own status, role and career? Second, *diversification* had become a major theme. The tasks and functions of higher education seem to have become so complex and so varied that higher education systems are likely to respond through greater diversification as a means of problem-solving. Diversification in institutional rankings and profiles may imply serious challenges of traditional notions of universal standards and holistic job roles for the academic profession (Brennan et al. 2007; Henkel 2000). What do the growing variety of functions expected to be taken up by higher education and the increasingly diverse spread institutional responses mean for the academic profession? Do these trends foster new divisions of work, segmented career paths and professional identities within and beyond the traditional core of the academic profession? Third, increasing attention was paid to *internationalisation*. The knowledge society has come to be viewed as border-crossing or even borderless. The socio-political conditions for higher education were increasingly shaped on a world-wide rather than on a national scale. Obviously, many institutions and academics have responded with greater efforts to cooperate internationally in favour of global prominence (Enders 2006; Teichler 2007). But how do academics deal with growing international cooperation and competition and how does the academic profession see itself being affected by these changes beyond a mere increase in international activities?

Also, it seemed worth examining how the academic profession reacts to changes in the *organisational fabric of the higher education system* which are related to these societal changes, and are more clearly visible in the daily life of higher education. In this context, first, *governance, management and evaluation were addressed*. The move of governments away from comprehensive control of higher education institutions, the growing strength of managerial power within universities, the rise of evaluative mechanisms, and the increasing use of incentives and sanctions are expected to affect the status, role and conditions of academics profoundly (Baschung et al. 2008; Kehm and Lanzendorf 2007); however, evidence for the effects on the academics themselves had remained hitherto, scarce. Second, it seemed timely to look at the *academic career settings*. Efforts to change the conditions of academic careers have been among the most controversial of policy initiatives. Divergent objectives are pursued, e.g. competing with other attractive occupations, making employment conditions more flexible, enhancing the quality of academic work, and creating more differentiated academic roles and employment conditions (Kogan et al. 1994; Musselin 2005). How do the academics cope with these changes? How

do the changes affect the academics' orientation and motivation as well as eventually the results of academic work? Third, *professionalisation of academic work* had become a major theme. Greater quality, relevance and efficiency of academic work are viewed as more likely to be achieved if the professionalisation is pursued in two ways: (i) In an *integrated way* through additional training and job assignments to enhance academics' expertise and performance in pedagogy, curriculum development, research management, knowledge transfer, etc. (ii) Concurrently, *professional differentiation* spreads; *new HE professionals* are increasingly taking responsibility for some domains, e.g. guidance, curriculum coordination, international relations and technology transfer (Aarrevaara and Hölttä 2007; Kogan et al. 1994; Locke and Teichler 2007).

Overall, need was felt to keep the list of major issues to be analysed manageable and relevant. Therefore, internationalisation, growing expectations of social relevance and the increased power of management became the major issues to be addressed in the second survey (see Kogan and Teichler 2007; Locke and Teichler 2007).

Eventually, scholars from about 20 countries agreed to undertake the questionnaire survey project *"The Changing Academic Profession" (CAP)* (see the questionnaire in Teichler, Arimoto and Cummings 2013). They tried to include as many countries that had taken part in the Carnegie Study in order to measure the changes that had taken place during the last 15 years. They also wanted to especially include countries where concepts of higher education had emerged in the past that had been internationally influential, as well as including countries with large populations. Finally, they had no funds for the overall coordination and for the support on some countries at hand; as a consequence, success in fund-raising determined the results that 18 countries and one additional administrative unit were included in the survey which eventually was undertaken, in most cases, in 2007 in the following countries: Australia, Brazil, Germany, Hong Kong, Japan, the Republic of Korea, Mexico, the Netherlands (the survey in this country conducted in 2010), the United Kingdom and the United States of America as those who had already participated in the Carnegie Study of the early 1990s, and nine further countries: Argentina, Canada, China, Finland, Italy, Malaysia, Norway, Portugal and South Africa. Altogether, almost 18,000 academics responded.

1.1.3 The European Study

In the survey "The Changing Academic Profession" (CAP), seven European countries participated – among them three countries that had already participated in the Carnegie survey. This provided quite a variety of cases, but certainly not a view across the different regions of Europe.

In 2008, the European Science Foundation decided on collaborating with various national research promotion agencies to provide support for various European

research consortia in the thematic area of "Higher Education and Social Change in Europe" (EuroHESC). In this framework, also a *study on "The Academic Profession in Europe: Responses to Societal Challenges (EUROAC)"* was supported that was a Collaborative Research Project (CRP) of a number of European countries. As part of this project a questionnaire survey was conducted in some additional countries with almost the same questions used in the CAP survey, coordinated by Ulrich Teichler. Actually, six new countries participated (one on the basis of national sources outside the EuroHESC scheme), whereby scholars in five countries succeeded in undertaking a representative questionnaire survey (Austria, Croatia, Ireland, Poland and Switzerland). The collaboration between the CAP and EUROAC teams eventually provided the opportunity to analyse the views and activities of the academic profession in 12 European countries.

The EUROAC had a broader scope than the CAP project. First, a thorough *analysis of the available literature* was undertaken in order to broaden the background for the analysis and interpretation of data (Kehm and Teichler 2013). Second, *interviews* with academics in each of the countries were undertaken to broaden the thematic spectrum of the project and to do an in-depth analysis in some thematic areas where questionnaire surveys may have had limitations, both coordinated by Barbara Kehm. Regular project meetings and trainings among the teams that were initiated and funded by the European Science Foundation contributed to the international exchange.

1.2 The Methods Employed

1.2.1 Sampling Design and Number of Respondents

The survey aimed at including a *broad range of countries* in Europe. There was no way, however, of making a targeted selection. A variety of countries had been approached in the CAP project. Additional countries could be included in the EUROAC project, if scholars were willing, in a position to join and achieved support from their relevant research promotion agencies. The EUROAC project was one of four projects in the EUROHESC scheme, funded by the European Science Foundation, that supported international collaboration and networking activities between the national teams. The projects itself were supported by national agencies. These were namely the Deutsche Forschungsgemeinschaft (DFG) in Germany, Fonds zur Förderung der wissenschaftlichen Forschung (FWF) in Austria, University of Helsinki in Finland, the Nacionalna zaklada za znanost, visoko skolstvo i tehnologijski razvoj Republike Hrvatske (NZZ) in Croatia, the An Chomhairle um Thaighde sna Dána agus sna hEolaíochtaí Sóisialta (IRCHSS) in Ireland, the Consiliul National al Cercetarii Stiintifice din Invatamantul Superior (CNCSIS) in Romania, the Schweizerischer Nationalfonds (SNF) in Switzerland and the Ministerstwo Nauki i Szkolnictwa Wyzszego (MNiSW) in Poland. In fact, a broad range of participation was achieved, even though the inclusion of France, a European country with a peculiar influential academic tradition, would have contributed towards a more comprehensive picture.

The survey addressed *academics at institutions of higher education providing at least bachelor programmes* ("Tertiary Type A" according to the OECD classification or "Level 5A" according to the UNESCO ISCED-97 classification). The respondents eventually were sub-divided in the analyses according to those active at "universities", defined as institutions both more or less equally in charge of teaching and research, and "other higher education institutions", i.e. those with a dominant teaching function. It should be added that most countries addressed public institutions only (in part, because the private sector is very small, and, in the case of Poland, many academics at private institutions work part-time in addition to assignment at a public institution).

In the institutions surveyed, *individual academics* were targeted who were employed full-time or spent a substantial part of their work time on teaching and/or research. Through this definition and eligibility criteria, three types of respondents were excluded in principle: (a) auxiliary staff (e.g. teaching assistants in U.S. terms, *wissenschaftliche Hilfskräfte* in German terms), (b) doctoral candidates without an institutional work contract (e.g. scholarship holders or self-paying doctoral students), and; (c) staff primarily active in management and service functions. In actuality, the practices were not always consistent (for example, only scholars employed full-time were included in Croatia, whereas the Norwegian survey included doctoral candidates funded by scholarships).

It should be added that the survey addressed both *professors and junior academic staff*. The distinction was not made according to the titles in the respective countries employed. Rather, those persons were classified as "professors" who held positions equivalent to full professors and associate professors in U.S. terms.

1.2.2 Number of Respondents Envisaged

The EUROAC team took over the decisions taken in the CAP study as regards numbers and selection of respondents. It was envisaged to reach an *"effective completed sample of 800 for each participating country"*; thereby, the number sampled should be enlarged by estimating return rates and to reach a good confidence interval in the case of stratified sampling. The countries could choose between the procedures of simple random sampling, stratified sampling, stratification with unequal sampling ratios and cluster sampling. In fact, the procedures varied between countries, including: simple random sampling, sampling according to disciplines, types of higher education institutions, etc.

The availability of sampling frames of academics also varied by country. However, countries identified approaches that ensured a representative sample of academics was achieved.

1.2.3 Data Collection

The questionnaire was sent out in the EUROAC countries in 2010 (only in a few cases was the survey distributed in 2011). At the outset of the project a decision had been taken to compare responses in 2010 (mostly the new EUROAC countries) to

Table 1.1 Number of respondents (not weighed) by status and institutional type[a]

		Universities		Other HEIs		
Country	Code	Seniors	Juniors	Seniors	Juniors	Total
Austria	AT	380	980	–	–	1,360
Croatia	HR	97	257	–	–	354
Ireland	IR	304	499	48	244	1,095
Poland	PL	1,255	1,716	271	264	3,506
Switzerland	CH	250	762	146	249	1,407
Netherlands	NL	292	336	175	364	1,167
Finland	FI	296	785	89	226	1,396
Germany	DE	302	715	192	24	1,233
Italy	IT	1,047	650	–	–	1,697
Norway	NO	556	388	44	25	1,013
Portugal	PT	227	607	41	276	1,151
United Kingdom	UK	566	452	30	40	1,088
Total		5,572	8,147	1,036	1,712	16,467

[a]The actual number of respondents is 17,745, but about 7% did not provide information about their status or institution

those in 2007 (mostly the CAP countries), i.e. to consider the 3 years difference as more or less negligible.

In all EUROAC countries an *online survey* was undertaken as the principal method of data collection; this was viewed as the most efficacious approach to survey the sample. Among a number of CAP countries, questionnaires were also *mailed in addition* to the online survey in an attempt to increase response rates. As a rule, responses were included, if respondents provided answers to more than half of the questions posed (Table 1.1).

Overall, the desired minimum of 800 respondents was well exceeded in all countries except for Croatia, the smallest country included with a population size of less than five million. The response rate varied from country to country. *Response rates* above 30% were reached in Norway 36%, Italy (35%), Germany (35%), between 20 and 30% in the Netherlands (26%), Finland (28%) and Ireland (22%), lower rates in United Kingdom (15%), Poland (11%) and Croatia (10%), and finally rates below 10% in Austria, Switzerland and Portugal.

1.2.4 Data Checks, Coding and Merging

The national teams involved in the EUROAC survey provided an extensive checklist established in the framework of the CAP project in order to ensure a high quality and a high degree of consistency in sampling, approaching possible respondents and in handling data received. In actuality, local conditions led to a higher degree of varied practices than one would consider desirable.

The national teams were expected to undertake procedures of data cleaning and plausibility checks as well as to establish a codebook. The coordinating unit undertook further checks and eventually merged the available data to the EUROAC (12 country) data set.

As already pointed out, one country was not included in the final data set. The decision has been taken, because only academics from selected disciplines had been addressed.

A final data set was made available to over 30 scholars involved in the EUROAC project by mid-2011. This provided the opportunity for them to join the joint comparative analysis as well as to undertake their own analyses, e.g. the academic profession in their country as compared to that in other European countries.

1.3 Current Volume

The EUROAC project was initiated by Ulrich Teichler (International Centre for Higher Education Research, INCHER-Kassel, University of Kassel, Germany) in close cooperation with Barbara M. Kehm, the coordinator of Volume I. The coordination process of the survey was supported in INCHER-Kassel by Ester Höhle and the all the processes of data administration and handling by Oliver Bracht, Florian Löwenstein and, in the final process, most notably by René Kooij at INCHER-Kassel. In total, over 20 scholars from 7 countries were involved in the data analysis and interpretation which form the basis of this volume: Austria, Croatia, Ireland and Switzerland as countries collecting the data as members of the ESF/national agencies-supported EUROAC project, Poland, as associated project with national funding for the EUROAC project, as well as Germany as EUROAC team member and Finland as associate member which had previously collected the data in the framework of the CAP project. The EUROAC team are grateful to the team members of the CAP project to agree to a merger of all European data and thus to the creation of a 12 country EUROAC data set.

In this volume, individual authors or teams from the various European countries provided comparative analyses on various themes addressed in the questionnaire, e.g. academic career and work, major academic functions as well as the managerial and organisation setting of academic work. Again, prior activities undertaken in the CAP project (e.g. Locke et al. 2011; Teichler et al. 2013; Aarrevaara and Pekkola 2010; Jacob and Teichler 2011; Rostan 2011; Cummings and Finkelstein 2011; RIHE 2008, 2009, 2010) turned out to be helpful in the interpretation of the findings.

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Chapter 2
Academic Career Paths

Gülay Ates and Angelika Brechelmacher

2.1 Introduction

Increasing student enrolments go hand in hand with far-reaching changes and reforms of the entire higher education system. In some countries, major national reform processes started in the early 1990s, whilst others followed in the first decade of the twenty-first century. We note changes to the legal basis of organisational human resource management and modifications of the structure of the higher education system that affect employment conditions and remuneration systems. Universities have had to rebalance their permanent (tenured) and flexible (nontenured) staff positions in response to reduced government funding. The attractiveness of academic employment is challenged. Criticism spread as regards the long period of professional training and career paths characterised by uncertainty for most junior staff, as well as low income (see Huisman et al. 2002; various articles in Teichler 2006).

In many countries, postgraduate training has recently been subject to profound changes. Graduate schools and structured doctoral training aim to enhance the attractiveness of doctoral positions and to prepare for career paths inside and outside academia (Huisman and Bartelse 2000). For example, Finland has recently developed and harmonised research-oriented academic careers at graduate schools. Aarrevaara and Hölttä (2008) argue that graduate schools are an efficient way of involving academics in research projects from the outset and building a base for

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future recruitment. Hence, the restructuring of the entrance phases of an academic career highlights the necessity of research-oriented doctorates (Laudel and Gläser 2008). In addition, Kim and Cummings (2011: 35) argue that 'Clark's concept of a research and teaching nexus or the transfer of research-based knowledge to teaching' is also an important qualification requirement of academics.

Even though the long journey into an academic career in nearly all countries still starts with a doctorate, in some cases, an extension of the training process can be observed in terms of a postdoctoral phase. For example, completing a postdoc following a PhD has become a common step for many junior researchers in the United Kingdom. In other countries, we observe efforts to reduce long training periods; for example, the *Habilitation* as an entry qualification for the professoriate is contested in Austria and Germany (Teichler 2008). The intention is to lower the risk of the 'Weberian Hazard'. The recently implemented Austrian collective agreement for universities provides the opportunity for doctoral degree holders to become full professors, even though the *Habilitation* remains the most common 'qualification step' for career advancement.

Higher education institutions increasingly depend on diversified funding sources. The rise in externally funded research projects in the last decades has gone hand in hand with the rise in fixed-term employment positions (see Altbach 2006). This move away from continuous full-time employment seems to be a substantial career hindrance (Enders 2002). In several countries, for example, in Austria, Ireland or the United Kingdom, measures to increase the flexibility and reduce the financial liability of universities make it difficult for academics to obtain permanent full-time appointments. However, the situation varies across countries: in some, the status of civil servants has been replaced by permanent private contracts, for example, in Austria (see Pechar 2006). In others, different systems of employment coexist, for example, in Germany, and in some countries, civil servant employment persists, for example, in the Netherlands.

What is the profile of those working in higher education under these changed conditions? Which career trajectories do they follow? How far does the employment situation between senior and junior academics vary? We will examine the employment situation in the entry phase of the academic career and the respective changes in subsequent career stages across Europe. Hence, we compare career trajectories and the current career situation of academics according to type of higher education institution.

2.2 Doctoral and Postdoctoral Qualifications

In many countries, the career tracks and stages of academics are defined by academic credentials. It is widely assumed that the doctoral award is an entry qualification to an academic career. A closer look, however, reveals that there are enormous variations in this respect. In many instances, the work on the dissertation is not viewed as a prerequisite for being employed as an academic but rather as the first career stage of academics employed in other higher education institutions (see the figures on employment during the course of doctoral work in Table 2.5; these

Table 2.1 Percentage of senior academics holding a doctoral or postdoctoral degree – by institutional type

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Doctoral degree												
Seniors at universities	95	98	75	64	98	82	93	92	32	84	96	78
Seniors at other HEIs		63		56	97	16	86	41		86	82	
Postdoctoral degree												
Seniors at universities	74	66	13	8	52	0	77	0	0	0	25	30
Seniors at other HEIs		17		2	36	0	9	0		0	11	

Question A1: For each of your degrees, please indicate the year of completion and the country in which you obtained it
For country codes, please see Table 1.1 in Chap. 1

figures, however, may comprise employment outside academia). Second, a doctoral degree is not consistently an entry qualification for senior academic positions. Third, postdoctoral awards, such as the *Habilitation*, could be the ultimate entry qualification to senior academic positions in some countries. This section addresses differences in the number of award holders at different career stages both in universities and other higher education institutions, the age at the award, the share of those obtaining academic degrees abroad and the retrospective views on the period of doctoral study or work.

2.2.1 Doctoral and Postdoctoral Qualifications

In half of the European countries, almost all (more than 90%) seniors at universities hold a doctoral degree. The respective ratios are over 80% in Norway and the Netherlands, three-quarters in Croatia and almost two-thirds in Ireland, but only one-third in Italy. In some countries, the *Habilitation* or another postdoctoral degree is viewed as the entry qualification for a professoriate. As Table 2.1 shows, about three-quarters of university professors in Germany and Austria, two-thirds in Switzerland, half in Poland, one-third in the United Kingdom and a quarter in Portugal have obtained a postdoctoral degree.

There is much greater country-to-country variation in the percentages of doctoral degree holders among seniors at other higher education institutions. Almost all of them in Poland and more than 80% in Germany, Norway and Portugal hold such a degree, but only 16% in the Netherlands.

The entry qualification to junior positions in the academic career ladder varies by country. In some instances, junior academics who do not hold a doctoral degree are employed at universities and can work on their dissertation whilst employed. Others work on their dissertation as doctoral students and are only employed after the award of the degree. Hence, the share of PhD holders among junior academics can only be compared by country with caution.

Table 2.2 Percentage of junior academics with a doctoral or postdoctoral degree – by institutional type

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Doctoral degree												
Juniors at universities	60	50	35	62	97	86	58	37	65	27	47	73
Juniors at other HEIs		37		44	3	84	14	59		14	18	
Postdoctoral degree												
Juniors at universities	18	10	4	6	11	0	14	0	0	0	4	28
Juniors at other HEIs		3		2	7	0	0	0		0		

Question A1: For each of your degrees, please indicate the year of completion and the country in which you obtained it

Table 2.2 shows that the share of PhD holders among junior academics is similar to that of senior academics in Poland, the Netherlands, the United Kingdom and Ireland. In contrast, it is clearly lower in seven countries – an indication that employment during work on the dissertation is widespread. Italy is an exceptional case: the share of doctoral degree holders among junior staff is substantially higher than among senior staff (65% as compared to 32%). This suggests that a doctoral degree has only recently become the typical entry qualification for the professoriate (see Rostan 2008).

It is not surprising to note that the number of doctoral degree holders among junior staff at other higher education institutions is lower in most countries than among senior staff at these institutions and than junior staff at universities. But two countries have a relatively high share of doctoral degree holders among juniors at other higher education institutions: the Netherlands (84%) and Finland (59%). Obviously, there is a recent historical change in the PhD becoming an entry qualification for senior positions at other higher education institutions.

In several countries, a remarkable share of junior academics at universities holds a postdoctoral degree: in the United Kingdom (28%), Austria (18%) and Germany (14%). This rarely holds true for those at other higher education institutions.

2.2.2 Age at the Award of Doctoral and Postdoctoral Degrees

University professors in many European countries are, on average (median), in their early 30s when they obtain their doctoral degree – 33 on average in the countries analysed. The respective median is 29 in Austria and the United Kingdom and 30 in Germany and Switzerland. In contrast, the respective figures are 39 in Ireland, 37 in Croatia and 36 in Norway, as Table 2.3 shows. The average age among senior academics at other institutions when they obtain their doctoral degree is 4 years more – 37 years – than that of their colleagues at universities; it is highest in Finland (median of 43), Ireland (41) and Portugal (39). This is partly due to the fact that more senior academics at these institutions than at universities have not spent their whole career in academia.

Table 2.3 Age at the award of doctoral and postdoctoral degrees (median) – by institutional type and status

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Doctoral degree													
Seniors at universities	29	30	37	39	32	32	30	34	31	36	35	29	33
Juniors at universities	31	30	34	29	31	31	31	33	30	34	36	29	32
Seniors at other HEIs		32		41	33	37	33	43		34	39		37
Juniors at other HEIs		33		34	33	31		47			34		35
Postdoctoral degree													
Seniors at universities	39	37	36	40	44		38				45	30	39
Juniors at universities	40	39	43	31	45		40				40	30	39
Seniors at other HEIs		40			45								43
Juniors at other HEIs													

Question A1: as in Table 2.2

The median age of senior academics across countries at the award of a postdoctoral degree is 39 for senior academics at universities and 43 at other higher education institutions. This does not come as a surprise, as about 5 years of postdoctoral work is considered as typical.

The average age of the doctoral award for junior staff must be viewed with caution. If there is no real change over time, we would expect a younger age because some of the respondents will be awarded their doctoral degree in the years to come and thus contribute to an increase in the average age. The average age of the doctoral award was 1–2 years lower among junior staff than among seniors at the time of the survey.

On average, women are awarded a doctoral degree and postdoctoral degree at a slightly younger age than men. Across status groups and types of higher education institutions, this difference is about 2 years in Finland and almost 3 in Germany.

2.2.3 Doctoral and Postdoctoral Awards Abroad

International experience is considered valuable for academics to enhance their international competences, experience different academic settings and enhance the quality of their academic work. In this framework, the questionnaire collected information about the country of the award of the respondents' academic degrees.

The data presented in Table 2.4 suggest that slightly more than one-fifth of the doctoral degree holders surveyed on average across the European countries were awarded this academic degree in a country that was not that of their current employment. This confirms the findings of other analyses on the international mobility of doctoral candidates from European countries (Teichler 2011). It is worth noting that

Table 2.4 Percentage of academics[a] having obtained their doctoral or postdoctoral degree in a country different from that of their current employment – by institutional type and status

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Doctoral degree												
Seniors at universities	27	47	20	49	5	12	10	9	29	17	30	14
Juniors at universities	18	36	13	46	3	20	10	11	9	63	26	15
Seniors at other HEIs		41		46	3	6	6	4		11	30	
Juniors at other HEIs		38		48	6	6		0			30	
Postdoctoral degree												
Seniors at universities	19	38	87	50	3	8	34	42	19	38	87	50
Juniors at universities	15	19	68	74	3		21				36	31
Seniors at other HEIs					8							
Juniors at other HEIs					4							

Question A1: as in Table 2.2

[a]Percentages among degree holders

mobility varies across countries only to a limited extent between junior and senior staff and between doctoral degree holders at universities and those at other higher education institutions.

The shares, however, vary substantially by country. Almost half of the doctoral degree holders currently employed in Ireland obtained their doctoral degree in another country, somewhat fewer in Switzerland and more than a quarter in Portugal. The shares are exceptionally high among junior academics currently employed in Norway. In contrast, the quota is below 5% on average across status and institutional type in Poland and below 10% in Germany.

Table 2.4 suggests that international academic mobility is higher at the postdoctoral level than at the doctoral level. We must bear in mind, though, that the absolute figures are very small in some cases and that postdoctoral degrees are customary in only a few countries.

2.2.4 Activities During the Course of Doctoral Training

The academics were asked to provide information about the modes and conditions of doctoral training: whether they had been employed during that period, whether they participated in research projects with academics of their institutions, whether they were involved in committees of academic self-administration and whether they were trained in teaching methods. The figures in Table 2.5 refer to respondents who report about these.

On average, about half of the academics at universities were *employed during the period of their doctoral training*. This holds true for more than three-quarters of the

Table 2.5 Modes of doctoral training – by institutional type and status (percentage of respondents citing modes of doctoral training; multiple responses)

	2010				2007/2008						
	AT	CH	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Employment contract during studies											
Seniors at universities	42	43	60	76	56	44	13	54	24	28	44
Juniors at universities	44	61	53	79	57	55	21	78	30	35	51
Seniors at other HEIs		68	47	64	69	50		61	9		53
Juniors at other HEIs		59	43	60		21			16		40
Research projects with faculty											
Seniors at universities	42	41	44	39	34	56	62	38	51	35	44
Juniors at universities	49	57	47	35	39	59	73	55	56	45	52
Seniors at other HEIs		40	33	37	34	32		39	58		39
Juniors at other HEIs		30	40	45		35			52		40
Instructional skills or learning about teaching methods											
Seniors at universities	8		40	11	9	9	22	10	17	6	15
Juniors at universities	8		36	24	9	13	28	6	11	24	18
Seniors at other HEIs			31	24	6	9		11	9		15
Juniors at other HEIs			36	40		0			8		21
Service on an institutional or departmental (unit) committee											
Seniors at universities	24	16	13	19	20	25	9	29	10	11	18
Juniors at universities	24	10	9	9	12	15	12	28	9	11	14
Seniors at other HEIs		13	15	17	32	8		21	12		17
Juniors at other HEIs		9	9	17		0			6		8

Question A3: How would you characterise the training you received in your doctoral degree?

respondents at universities in the Netherlands and is quite frequent for junior academics in Norway. In contrast, relatively low figures are reported from academics in Italy, Portugal and the United Kingdom. At other higher education institutions, this share is high in many countries and exceptionally low in Portugal.

Almost as many academics were *involved in research projects* during their doctoral training. This is most common in Italy. In most countries, this is truer for academics currently employed at universities than for those at other higher education institutions.

In some countries, the share is similar to that of respondents who were employed during this period; we can infer that employment, as a rule, has served collaboration in research projects. There are exceptions, though. On the one hand, far more Italian respondents and substantially more Portuguese respondents were involved in research projects than employed during the doctoral projects. As doctoral programmes were not widespread in Italy, this suggests a frequent unpaid involvement in research. On the other hand, many academics in the Netherlands were employed during their work on a dissertation without being involved in collaborative research.

Less than one-fifth of academics report that their doctoral training comprised *instruction in teaching skills and methods*. This is by far most common in Poland where it is cited by more than a third of the respondents.

Even fewer respondents report that *services on an institutional or departmental committee* are part of their doctoral training. It is cited most frequently by academics at universities in Norway (more than a quarter) and Austria (almost a quarter of both seniors and juniors) as well as by senior academics at universities in Finland and by senior academics at other higher education institutions in Germany.

2.3 Past Career Steps and Experiences

The questionnaire addressed various features of the past professional career: the number of years the respondents had been employed part-time, the age at which they obtained full-time employment, the number of institutions at which they were employed and mobility across disciplines.

2.3.1 Time Span from Graduation to Full-Time Employment in Higher Education

The period up to becoming a full-time member of the academic profession is measured in Table 2.6 as the time span from the first degree to the first full-time appointment at a higher education institution. We must bear in mind, though, that this is by no means a perfect measure. On the one hand, the first degree could be a short-cycle degree or a degree based on a long university programme. On the other, the first full-time employment could be short-lived and be followed by periods of unemployment, part-time employment, etc. Yet, it provides a reasonable approximation.

The period between graduation and first full-time employment lasts on average (median) 7–8 years across countries, status groups and types of higher education institution. It was longest on average among those who are currently seniors at universities in Croatia, Finland (13 years each) and Ireland (11 years), among those who are currently seniors at other higher education institutions in Switzerland (15 years)

Table 2.6 Number of years between first degree graduation and first full-time position (median) – by institutional type and status

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	2	9	13	11	0	9	5	13	9	8	3	8	8
Juniors at universities	3	3	7	9	2	9	1	6	9	6	4	8	6
Seniors at other HEIs		15		8	3	10	4	13		7	4		8
Juniors at other HEIs		12		9	3	10	1	11		5	3		7

Calculated on the basis of Question A1: For each of your degrees, please indicate the year of completion and the country in which you obtained it; Question A6 – Please indicate the following (year) …

Table 2.7 Years of all academics' part-time employment at higher education institutions (median) – by institutional type and status

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	IT	NO	PT	UK	Mean
Seniors at universities	3	6	3	3	0	9	3	4	2	1	3	3.4
Juniors at universities	2	3	1	5	0	6	3	3	1	0	3	2.5
Seniors at other HEIs		8		2	0	7	3			0		3.3
Juniors at other HEIs		4		3	0	4	1		2	0		2.0

Question A4: Since your first degree, how long have you been employed in the following? (years)

and Finland (13 years) and finally among those who are currently junior staff at other higher education institutions in Switzerland (12 years) and Finland (11 years). In contrast, this period is less than 5 years in Austria, Poland, Germany and Portugal.

The average number of years is shorter among junior staff than among senior staff across European countries. We must be cautious in interpreting these findings. They could indicate a shortening of this transition period. We cannot exclude, however, that those who are currently employed full-time among juniors are overrepresented among those who later become senior academics.

2.3.2 Past Part-Time Employment

Table 2.7 shows that less than half this time span – 2–3 years on average in countries, status groups and higher education institutions – consists in part-time employment at higher education institutions. It covers most of this transition period in the Netherlands. No information was collected on how academics spent this period as doctoral students, part-time employees outside higher education, unemployed, etc.

2.3.3 Age at the Beginning of Full-Time Employment

On average, university professors were 32 years old (median) when they obtained a first full-time appointment in academia, whilst their colleagues in junior positions were 2 years younger. As Table 2.8 shows, this position was obtained at a relatively early age by university professors in Austria (24 years), Poland (25 years) and Portugal (27 years). In contrast, they were relatively old when they reached that career stage in Ireland (40 years) and Croatia (36 years).

Upon entering first full-time employment, senior academics at other higher education institutions were a few years older than those at universities. The highest median ages hold true again for Ireland (41 years) and the Netherlands (39 years). Notably, senior academics at other higher education institutions are substantially older than those at universities in the Netherlands and Finland.

Table 2.8 Age at the start of first full-time appointment in the higher education and research sector (median) – by institutional type and status

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	24	34	36	40	25	32	32	32	33	34	27	33	32
Juniors at universities	28	27	31	28	27	29	29	29	35	30	30	32	30
Seniors at other HEIs		37		41	28	39	31	37		31	29		34
Juniors at other HEIs		37		33	28	37	30	40		33	29		33

Calculated on the basis of Question F2: Year of birth (median); Question A6 – Please indicate the following …. Year of first full-time appointment (beyond research and teaching assistant) in the higher education/research sector (median)

Again, we must consider the responses by junior academics with caution. On the one hand, those who were employed full-time when the survey was conducted could be in a less favourable position in the future. On the other, they could have become full-time senior academics after years of employment outside higher education. Therefore, the slightly younger age of full-time employment in academia among junior academics cannot necessarily be interpreted as an indication of a trend towards earlier full-time employment in academia.

2.3.4 Inter-institutional Mobility

Changing one's institution can be a very important step in an academic career. University professors across countries report that they had been employed on average (arithmetic mean) at 3.8 institutions since their first degree – 2.8 at academic institutions and 1.0 at other institutions. Senior academics at other institutions were professionally active at 4.4 institutions on average – 2.7 at academic and 1.7 at other institutions.

In looking at medians, we note that mobility between higher education institutions and other academic institutions is most frequent among university professors in Germany and Switzerland and among senior academics at other higher education institutions in Ireland (median of 3 each). In contrast, mobility between academic institutions is rare among university professors in Croatia, Italy and Portugal (median of 1 each).

In almost all countries, most academics were not employed outside academia. A median of 1 is only true for both senior academics at universities and at other institutions in Poland, for university professors only in Ireland and Italy and for senior academics at other higher education institutions in Portugal and Switzerland.

Again, it does not come as a surprise to note that junior academics were less mobile between institutions since their first degree than senior academics, since they have been academically active for a shorter period up to the point in time when the survey was conducted and, thus, had had fewer opportunities. The available data do

not allow us to examine whether there is an increase or a decrease in inter-institutional mobility of junior academics as compared to senior academics who were the same age and at the same career stage as junior academics at the time of the survey.

There are various factors at play that reinforce or discourage inter-institutional mobility. For example, there has been a 'taboo of internal appointment (*Hausberufung*)' (Pechar 2005) for professorial positions which has reinforced inter-institutional mobility at that career stage. Similarly, professional experience outside academia is appreciated in the recruitment of senior academics at other higher education institutions (e.g. it is even mandatory in Germany). Finally, the relatively high mobility rates among academics in Switzerland could be due to the fact that a high percentage comes from abroad (see Hirschi 2010), whilst the high rates in Ireland reflect frequent early career mobility, notably to the United Kingdom.

2.3.5 Continuity and Change of Discipline[1]

The issue of continuity or change in academic careers is not only one of straight careers and detours, shifts between part-time and full-time and short-term and permanent employment and employment in a single or various institutions, but also of remaining in a discipline. The academics were asked to state the discipline or field of their highest degree and the discipline of their current academic unit.

It comes as no surprise to note that most academics stay within the discipline of their highest degree because a doctoral dissertation and even more so postdoctoral work strongly influence the subsequent academic career. In contrast, it is remarkable to note that 14% of senior academics changed their discipline.

More than 90% of academics in the humanities and in the physical sciences currently work in the discipline in which they obtained their highest degree. Continuity is almost as widespread, as Table 2.9 shows, in law and in life sciences (91% for senior academics and 87–88% for academics in junior positions). In contrast, more than a third of those who are currently working in teacher training and more than one-fifth in business studies, medical sciences and agricultural studies changed discipline.

It is surprising to note that more junior academics changed their disciplines than senior academics (17% as compared to 14% on average across disciplines and countries). One could have expected that seniors changed their discipline more frequently because they had had more opportunities to do so over a long time span; thus, the findings suggest a historical shift towards more mobility between disciplines in

[1] In the EUROAC survey, disciplines were clustered in ten groups: 'Teacher training and education science'; 'Humanities and arts'; 'Social and behavioural sciences'; 'Business and administration, economics'; 'Law'; 'Life sciences'; 'Physical sciences, mathematics, computer sciences'; 'Engineering, manufacturing and construction, architecture'; 'Agriculture'; and 'Medical sciences, health related sciences, social services'. For ease of reading, only the first discipline of each cluster is mentioned in the text, for example, 'Teacher training' stands for 'Teacher training and education science'.

Table 2.9 Percentage of academics with identical discipline of the current unit and of the highest degree – by status

		2010					2007/2008						
		AT	CH	HR	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Teacher training[a]	Seniors				80	57			53	56		52	60
	Juniors		56		77	68	80	48		54	81	64	66
Humanities[a]	Seniors	99	88	92	99	94	91	90	91	97		94	94
	Juniors	96	88	96	96	90	99	92	90	94	86	91	93
Social sciences[a]	Seniors	89	88	100		78	79	75	60	83	91	79	82
	Juniors	77	86	99		78	91	82	76	89	88	79	85
Business studies[a]	Seniors	78	58		86	68	96	80	81	77	92	70	79
	Juniors	83	68		87	54	88	73	79		80	65	75
Law	Seniors	100	91		93	82			91			91	91
	Juniors	86	88		75	74	89		93		100	100	88
Life sciences[a]	Seniors		94		90			100	81	92		88	91
	Juniors	91	84	93	86	74	98	89	85	96	83	83	87
Physical sciences[a]	Seniors	100	96		88	77	91	100	95	100	100	86	93
	Juniors	90	92	97	89	82	94	86	97	98	97	88	92
Engineering[a]	Seniors	84	73	97	87	61	92	89	88	94	96	67	84
	Juniors	89	87	97	87	61	88	82	93	95	92	65	85
Agriculture	Seniors				85				75				80
	Juniors		73		91	86	83	60	83		72		78
Medical sciences[a]	Seniors	78	88	100	85	72	84	89	85	88	70	47	81
	Juniors	77	70	96	91	73	88	69	73	80	68	59	77
Total	Seniors	90	84	97	88	74	89	89	80	86	90	75	86
	Juniors	81	78	96	87	74	90	76	85	87	85	77	83
	Seniors and Juniors	86	81	97	87	74	89	82	83	86	87	76	84

Question A2: Please identify the academic discipline or field of your highest degree obtained/of your current academic unit

[a]Name represents disciplinary cluster

recent years. Only in teacher training and social sciences does a larger proportion of senior academics than junior academics change discipline.

There are differences by country. Croatian academics hardly changed discipline. In contrast, more than one-fifth of academics in the Netherlands and in the United Kingdom did.

2.4 Current Employment Conditions

Before discussing the findings of the survey on the full-time and permanent position, as well as on additional professional activities and remuneration, the respondents' composition according to status and age will be addressed. We could assume that the differences in employment conditions between senior and junior academics

in a given country are influenced by the ratio of senior-junior positions and thus by the chances of being promoted to senior positions.

2.4.1 Share of Academics in Senior and Junior Positions

The EUROAC survey indicates that professors constitute 20% or less of all academics at universities in Finland, Germany, Portugal and Switzerland and around 30% in Austria, Croatia and the United Kingdom. In contrast, about half the academics at universities in Poland and the Netherlands and 62% of academics in Italy hold senior positions.

Most academics at universities up to the age of 35 hold junior positions. Greater variation can be observed among academics who are between 36 and 45: more than 80% are in junior positions in half the countries surveyed and about 70% in the United Kingdom. In contrast, the share of junior academics in that age group is only about 60% in Austria, Ireland, Italy, the Netherlands and Norway. Among those who are over 45, most are in senior ranks in most countries. In Finland (41%), Germany and Switzerland (45% each) and Portugal (46%), however, seniors are a minority in the age bracket.

It should be noted that junior positions or other positions prevail at other higher education institutions in most countries (80% or more). In contrast, other higher education institutions in Germany employ 70% senior and 30% junior staff.

2.4.2 Duration of Current Employment Contract

Permanent employment (or continuous employment without permanent guarantee, but with no preset term) prevails in Europe for senior academics. This holds true at universities for more than 90% in the United Kingdom, Germany, Norway and Ireland and for more than 80% in Portugal and the Netherlands. Fixed-term or other contracts, in contrast, are relatively frequent among senior academics at universities in Finland (34%), Poland (30%) and also in Switzerland (24%) and Austria (19%) – almost half on average with prospects of long-term employment.

In contrast, the majority of junior academic staff at universities in most of the countries is employed on a short-term basis. This holds true for 79% in Germany and Switzerland, 75% in Norway, 69% in Portugal, 68% in Austria and 51% in Finland. In all these countries, short-term contracts without tenure-track regulations prevail. Only a minority of junior academics is employed on a short-term basis in Ireland, the United Kingdom, and Poland and the Netherlands, of whom more than half are on a tenure track or see prospects of long-term employment.

Senior academics at other higher education institutions are even more often permanently or continuously employed than their colleagues at universities. Also,

most of the junior academics at other higher education institutions – unlike their colleagues at universities – are employed on a long-term basis.

However, access to permanent employment does not only depend on the status in the academic career ladder. Age also comes into play. Seventy-seven percent of university professors between the ages of 36 and 45 on average of the countries have a permanent or continuous contract, whilst this holds true for 91% of university professors who are over 45. Fixed-term employment prevails among junior academics who are 35 years old and younger. Forty-eight percent of those who are between the ages of 36 and 45, and 70% of those who are over 45, have a permanent or continuous contract (Table 2.10).

2.4.3 Full-Time and Part-Time Employment

Most academics at higher education institutions are employed full-time. It should be noted that those employed at higher education institutions on an honorarium basis – for example, practitioners teaching a single course – were not included in this survey.

The share of those who were employed part-time, however, varies substantially by status group and by country, as Table 2.11 shows. Among university professors, between 1 and 9% are employed part-time in the various countries, with the exception of the Netherlands, where part-time employment is frequent (26%). Among senior academics at other higher education institutions, it is rare in most countries. In this case, the Netherlands (44%) and Switzerland (32%) are exceptions. More than one-fifth of junior academics on average across countries both at universities and at other higher education institutions are employed part-time. The respective rates are 31 and 61% in the Netherlands and 44 and 51% in Switzerland at both types of higher education institutions and 39% in Austria and 35% in Germany at universities.

2.5 Current Remuneration

2.5.1 Salary

Most international comparisons of academics' income are misleading, because they do not take into consideration the context of the figures at hand. First, respondents were asked to report their annual income; the otherwise popular measure of the monthly income is misleading because it is not consistently 12 per year but varies in economically advanced countries between 9 and 16 months. Second, the questionnaire asked to report the annual gross income; thus, no detailed information is available on taxes, social benefits, etc., which could help to make a valid estimate of net income. Third, the annual salaries are reported here at adjusted Consumer Price

Table 2.10 Duration of employment contract by institutional type and status (percentage)

	2010					2007/2008				
	AT	CH	IE	PL	NL	DE	FI	NO	PT	UK
Seniors at universities										
Permanently employed (tenured)	73	67	92	49	80	91	55	94	82	96
Continuously employed[a]	6	7	3	22	2	5	3	1	3	2
Fixed-term with long-term prospects[b]	8	12	3	24	2	2	15	2	6	1
Fixed-term without long-term prospects[c]	11	12	2	6	14	2	19	2	7	1
Other	3	1	0	0	1	0	8	1	3	0
Juniors at universities										
Permanently employed (tenured)	20	10	61	16	54	5	17	18	17	54
Continuously employed[a]	8	11	15	42	5	14	11	4	4	18
Fixed-term with long-term prospects[a]	6	10	18	38	13	5	9	5	29	25
Fixed-term without long-term prospects[c]	62	69	6	4	28	74	42	70	40	4
Other	4	0	0	0	1	1	21	4	10	0
Seniors at other HEIs										
Permanently employed (tenured)		76	90	35	88	91	80	86	81	
Continuously employed[a]		20		34	1		11			
Fixed-term with long-term prospects[b]				30	7					
Fixed-term without long-term prospects[c]				1	4					
Other				0	1					
Juniors at other HEIs										
Permanently employed (tenured)		61	68	22	81		65	40	16	
Continuously employed[a]		19	13	41	1	47	15		4	
Fixed-term with long-term prospects[a]		9	10	34	12		7		9	
Fixed-term without long-term prospects[c]		11	9	3	5	30	5	45	66	
Other		0	0	0	1		9		5	

Question A11: What is the duration of your current employment contract at your higher education institution or research institute? (Check only one)
No information available for Croatia and Italy
[a]Continuously employed (no preset term, but no guarantee of permanence)
[b]Fixed-term employment with permanent/continuous employment prospects (tenure track)
[c]Fixed-term employment without permanent/continuous employment prospects

Table 2.11 Percentage of part-time academics by institutional type and status

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities	7	9	6	3	26	1	6	3	6	5	5
Juniors at universities	39	44	12	1	31	35	22	3	13	16	17
Seniors at other HEIs		32	0	2	44	6	10		10	3	
Juniors at other HEIs		51	8	4	61	12	15		18	7	

Question A7: What is your employment situation in the current academic year at your higher education institution/research institute? (Check one answer only)

Levels (CPL). Fourth, only the salaries of those who are employed full-time are taken into consideration. Accordingly:

- University professors in Switzerland have by far the highest median annual full-time salaries (€91,034), followed by their colleagues in Germany, Portugal, the Netherlands and Austria (€67,179 to €66,038).
- In various countries, they range from close to €40,000 to just over €55,000 in Italy, the United Kingdom, Finland and Norway.
- Finally, the remuneration of university professors is the lowest in Poland (€32,078).

The relative income privilege of university professors is established subsequently through a comparison with the average income or the poverty level in the respective countries. National poverty levels are defined as 60% of the median national equalised household income for single-adult households ('at-risk-of-poverty' level) and households consisting of two adults and two children under the age of 14 ('at-risk-of-poverty' level). Data for both poverty levels – as annual medium equalised income – are provided in Table 2.12.

According to the latter poverty level – two adults and two young children – university professors in Portugal earn more than five times as much. In most countries, the professorial median income is three times as high, but in Finland it is only twice as high. In Norway, seniors earn just slightly more than one and a quarter above the poverty threshold. There, the threshold is the highest among the 12 countries, and income is relatively low.

Senior academics at other higher education institutions earn on average somewhat less than their colleagues at universities. Again, the highest CPL-adjusted median income is paid in Switzerland (€80,919), followed by Germany (€58,771) and Portugal (€57,078). In most other countries, the annual gross income varies between close to €40,000 and €50,000, whilst it is only €17,375 in Poland. In Norway and Finland, the average income difference between senior academics at universities and other institutions is less than 5%, whilst a difference of more than 10% can be found in various other countries. Only in Poland is the annual median income of university professors 46% higher than their colleagues at other higher education institutions.

Table 2.12 Annual gross income according to quartiles of full-time academics' salaries by institutional type and status (euros at adjusted Consumer Price Levels)[a]

	2010				2007/2008					
	AT	CH	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities										
25th percentile	47,170	74,215	17,375	55,556	60,461	36,290	41,506	33,773	57,078	55,886
50th percentile	66,038	91,034	32,078	66,667	67,179	48,387	56,950	38,378	67,178	55,886
75th percentile	80,189	101,149	32,078	83,333	81,574	56,452	72,394	44,533	74,977	68,305
Juniors at universities										
25th percentile	27,329	30,345	17,375	37,963	36,468	20,308	23,166	24,946	28,539	31,048
50th percentile	39,381	40,459	17,375	44,444	40,307	26,533	28,958	26,593	34,341	43,467
75th percentile	50,100	50,574	17,375	54,323	47,985	32,734	33,784	30,703	47,945	43,467
Seniors at other HEIs										
25th percentile		73,148	17,375		52,783	40,323		34,519	32,574	
50th percentile		80,919	17,375		58,771	48,387		36,843	57,078	
75th percentile		87,845	32,078		64,662	52,419		41,596	62,958	
Juniors at other HEIs										
25th percentile		47,899	17,375		30,710	32,258		26,174	25,114	
50th percentile		60,689	17,375		42,836	36,290		30,703	34,247	
75th percentile		73,333	17,375		47,985	40,323		33,262	45,662	
National 'at-risk-of-poverty' thresholds in EU-27 countries[b]										
	2009									
	AT	CH	PL	NL	DE	FI	IT	NO	PT	UK
Single-adult household	11,451	13,288	4,540	11,293	10,634	10,275	9,119	14,173	5,838	10,241
Family of 4 persons[c]	24,046	27,905	9,533	23,716	22,332	21,578	19,150	29,763	12,261	21,506

Question A12: What is your overall annual gross income (including supplements) from the following sources? From current higher education institution/research institute

[a]No data available for Croatia and Ireland, Source: Eurostat (2011)

[b]60% of the annual median equalised income in EURO at adjusted consumer price levels. Source: Eurostat (2011)

[c]Household with two adults and two children below 14 years of age

Average annual earnings at universities are highest for junior staff in the Netherlands (€44,444), on average around €35,000 in various countries and lowest in Poland (€17,375). In most countries, the income of junior staff is about 40–50% of the income of senior academics. However, the income difference is smaller in the Netherlands, Norway and the United Kingdom.

Junior academics at other higher education institutions earn on average across countries slightly more than junior academics at universities. This is due to the fact that universities play a stronger role in the training of young staff. In Poland, Portugal and the United Kingdom, however, the average annual earnings of junior academic staff are more or less equal at both types of institution.

This means that the median income of junior academics in half the European countries surveyed is less than twice as high as the respective national poverty level for households consisting of two adults and two children under the age of 14 ('at-risk-of-poverty' level). One must bear in mind, though, that many junior academics are single or live in smaller families; thus, their income level is relatively higher if the family size is taken into consideration. Table 2.12 shows that in every country the bottom quarter of single junior academics earns at least twice as much as the national poverty threshold of a single-adult household. On the other hand, these figures account for full-time academics only. In many countries, a considerable share of juniors is employed part-time, and therefore, income is therefore lower than the reported figures.

Remuneration is not identical among academics of the respective status group and institutional types. Table 2.12 provides an overview of the lowest, average and highest quarter of gross annual income per country. The highest quartile of university professors in Poland earns about twice as much as the lowest quartile and in Austria, Finland and Italy more than one and a half times as much, whilst in other countries, dispersion of income is smaller. Among senior academics at other higher education institutions, the highest quarter earns about twice as much in Poland and Portugal, whilst the respective difference is substantially smaller in other countries.

Across countries, the income differences among junior academic staff are slightly smaller than among senior academics. Junior academics at universities of the highest quartile earn about 45% more than those of the lowest quartile in Austria and more than 40% in Portugal and Switzerland. Similarly, the top quartile of junior academics at other higher education institutions earns about 45% more than the bottom quartile in Portugal and more than 35% more in Germany and Switzerland. In contrast, all junior academics in Poland seem to have more or less the same income.

In comparing the bottom quartiles of income with the poverty level for a household of two adults and two children under the age of 14, we note that most junior academic staff and the bottom quarter of senior academics in Norway can be considered as being close to income poor, based on their average annual income. In nearly all countries, the income of the bottom quarter of junior academics at universities is less than one and a quarter above the poverty threshold. In contrast, incomes of junior academics in Portugal and Poland are close to twice the poverty level. Again, must bear in mind that the income of junior academics can be seen as more favourable when compared to the poverty level of single-adult households.

2.5.2 Additional Employment and Remunerated Work

Many academics have income beyond their salary for their main professional task. This goes from small honoraria for presentations and publications to – in a few cases – a second professorial position. University professors on average across the countries included in the EUROAC study state that this additional income corresponds to 10% of their gross annual salary.

Table 2.13 Percentage of academics who have additional employment and remunerated work in the current academic year – by institutional type and status (multiple responses possible)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	IT	NO	PT	UK	Mean
None of the following categories												
Seniors at universities	68	77	45	81	57	75	38	75	64	82	69	61
Juniors at universities	60	81	61	80	59	84	44	79	79	77	82	66
Seniors at other HEIs		63		73	35	65	38		54	74		57
Juniors at other HEIs		65		79	36	68	45		68	83		65
At another research institute/HEI												
Seniors at universities	13	11	40	7	24	7	48	8	18	4	9	16
Juniors at universities	17	8	21	8	19	4	45	7	9	5	7	13
Seniors at other HEIs		10		10	47	7	35		27	16		22
Juniors at other HEIs		9		9	36	5	46		10	5	13	17
At a business organisation												
Seniors at universities	2	3	20	4	6	4	6	2	2	4	3	5
Juniors at universities	5	4	14	3	9	1	4	2	4	2	1	4
Seniors at other HEIs		6		8	8	2	7		0	0		4
Juniors at other HEIs		4		5	13	4	9		0	3	4	5
At a non-profit organisation/government entity												
Seniors at universities	5	5	4	5	7	6	4	4	5	3	5	4
Juniors at universities	6	4	7	5	8	2	2	4	3	2	4	4
Seniors at other HEIs		10		6	10	5	3		5	0		6
Juniors at other HEIs		12		5	8	6	0		4	1	9	6
Self-employed												
Seniors at universities	15	5	3	7	10	8	16	7	11	3	9	8
Juniors at universities	17	4	3	7	10	7	10	7	5	10	6	7
Seniors at other HEIs		15		4	11	16	31		14	5		14
Juniors at other HEIs		14		7	13	19	18		18	6	4	12
Other												
Seniors at universities	4	2	3	0	3	3	2	7	0	5	10	3
Juniors at universities	6	2	3	0	2	2	1	5	0	5	4	3
Seniors at other HEIs		2		0	1	6	5		0	5		3
Juniors at other HEIs		5		0	4	1	0		0	2	4	2

Question A8: Do you work for an additional employer or do additional remunerated work in the current academic year?

Table 2.13 provides an overview of the share of academics that states that they are paid for work in a research institute or another higher education institution, a business institution, a public or other non-profit organisation or are self-employed. Altogether, more than one-third state that they have this kind of additional remunerated work:

- Thirty-nine percent of the university professors on average across countries: most frequently those in Germany (62%), Croatia (55%) and Poland (43%) and least often those in Portugal (18%) and Ireland (19%).

- Thirty-four percent of junior staff at universities, 43% of senior academics at other higher education institutions and 35% of juniors at other institutions. Hence, we note similar differences by country.

Research institutes and other higher education institutions are the most frequent institutions for additional employment for about one-sixth of all academics, notably, in Germany, Croatia and Poland.

Self-employment is cited as the second most frequent source of additional income: for about one-tenth of the academics. This holds true more often for academics at other higher education institutions than at universities. Seniors at other higher education institutions in Germany (31%) stand out. Also, almost one-fifth of juniors at other higher education institutions cite income from self-employment in the Netherlands, Germany and Norway.

Additional work in business organisations, non-profit organisations and government entities plays a rather marginal role (around 5% each on average). University academics in Croatia, however, are an exception, since 20% of the professors and 14% of the academics in junior positions report that they work for business organisations in addition to their university jobs.

2.6 Conclusion

Academic career paths are still linked to national contexts. Differences arise from distinct traditions in European higher education systems and their national legal requirements. Careers differ in many respects, including duration and phases of training, connected academic qualification steps and the legal conditions of employment. The award of a doctoral degree and the appointment to a professorial position seem to be common features, but they are embedded in different conditions.

The doctorate seems to be the normal prerequisite for a professorship. Even in the only European country with a minority of *university professors* having been awarded a doctoral degree, that is, Italy, about two-thirds of junior academics hold a doctoral degree. In *Austria*, *Germany, Switzerland* and *Poland*, a second thesis, the *Habilitation*, is generally required to become a professor. Whilst in the first three countries, a large majority of university professors complies with this; surprisingly, only half of all Polish senior academics hold this type of postdoctoral degree. In the *United Kingdom*, on the other hand, completing a postdoctoral qualification after a PhD is becoming an increasingly common step which one-third of senior academics have taken.

On average, senior academics in most countries completed their doctorate around the age of 30. *Norwegian*, *Croatian* and *Irish* professors, however, report completing this step in their late 30s. The median age for the completion of a *Habilitation* is around 40 in all countries.

International academic mobility tends to increase during later career stages. Between 70 and 95% of professors obtained their doctoral degree in the country of current employment, with the exception of Switzerland and Ireland, where mobility rates of around 50% partly reflect a high share of foreign academics. In Austria,

Switzerland, the Netherlands and Italy, mobility among postdoctoral degree holders is lower than mobility among those in the doctoral phase. In contrast, in Croatia and Portugal, international academic mobility is common at the later stage, with 87% of postdoctoral degree holders having obtained their highest degree in other countries.

Altogether, the professoriate still represents a highly attractive position for academics. Most professors at universities hold tenured positions (more than 90% in the United Kingdom, Norway, Ireland and Germany). A certain degree of job insecurity for senior academics can be noted only in Finland and to some extent in Poland.

In general, senior positions at universities ensure large incomes. In Portugal, the salaries are on average five times the poverty level for four-person families. There are considerable variations between countries regarding the distribution of income among university professors.

Information on the career paths of junior academics at universities is, by definition, incomplete in a survey that covers junior academics of all age groups. Thus, it is not possible to establish clearly whether a doctoral award is becoming more common or whether mobility is on the rise.

Available literature suggests that, despite all national differences, 'in terms of the forces and forms of change', transnational compliance in introducing a 'shift from the individual and/or departmental responsibility in reforming doctoral education to the institutional level' can be observed (Kehm 2007: 314). Doctoral schools and structured doctoral training are increasing. According to the EUROAC study, more academics in junior than in senior positions in almost all countries have been involved in research projects during their doctoral training, a fact which highlights, on the one hand, the shift towards research-oriented doctoral training and, on the other, the changing research conditions at universities related to the rise of external grants and soft-money financing. Hence, a considerably high proportion – half the doctoral degree holders on average across all countries and three-quarters in the Netherlands and Norway – reported having been employed during this early career phase.

Junior academics' employment conditions are not very comfortable in many countries. Part-time employment is more frequent, notably during the first years of employment; however, the situation varies strikingly by country.

Defining 'early career' in research, Bazeley determines that it depends less on the 'absolute length of employment […] than the length of time one has been in a stable, secure employment situation' (Bazeley 2003: 272). We know from other sources that the chances of promotion to a professorship of junior staff who are employed at higher education institutions after the award of a doctoral degree differ substantially by country. The EUROAC study shows that three-quarters of junior academics between the ages of 36 and 45 have fixed-term contracts in Switzerland, Germany, Norway and Portugal and that this also holds true for about half the junior academics of this age group in Austria. Permanent or long-term contracts for junior academics are considerably more frequent in Poland and to a certain extent in Ireland, the Netherlands and the United Kingdom.

These findings are in line with Enders' (2002) research results: a deviation from continuous full-time employment appears as a career hindrance. Secure working

conditions in Poland, the Netherlands and the United Kingdom go hand in hand with the highest rate of doctoral degree holders in the youngest age group across all countries.

The salaries of full-time junior staff in most countries vary between one-third and half of those of university professors. In Norway, the income of senior and junior academics is around once the national poverty level for a family of two adults and two children under the age of 14. The annual earnings of the bottom quarter of nearly all junior academics are only slightly above the 'at-risk-of-poverty' level defined that way.

Academics at *other higher education institutions* are more heterogeneous across countries as far as career paths and employment conditions are concerned. In some countries, a doctoral degree is as common as in universities, whereas in others it is rare among academics of this type of institution. More academics from other higher education institutions have a regular income from other sources, but again, this varies substantially by country.

The Commission of the European Union (2007) underlines that 'cognitive diversity' is a key driver in finding new approaches to knowledge production, as well as sources of innovation. It is interesting to note in this context that academics at other higher education institutions tend to be externally remunerated more often than their colleagues at universities.

Regardless of academic position, part-time employment is very unusual at other higher education institutions, with the exception of Switzerland and the Netherlands. In most countries, employment conditions for junior staff at other higher education institutions are more favourable on average than those for junior staff at universities. This could reflect the fact that universities play a stronger role of training young academics at the start of their career.

Salaries of senior academics at other higher education institutions are somewhat lower than those at universities: in most countries, around one-tenth. Altogether, however, the employment situation of academics at other higher education institutions is closer to that of those at universities than one tends to assume.

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Chapter 3
Academic Work, Working Conditions and Job Satisfaction

Marek Kwiek and Dominik Antonowicz

3.1 Introduction

In this analysis of changing academic work, working conditions and job satisfaction in Europe, we present the academics' assessment of facilities, resources and personnel. Subsequently, an overview will be provided about the academic workload and allocation of time between the four major types of academic activities: teaching, research, service and administration. A further section will discuss job satisfaction and academics' income.

This chapter provides a general picture of the variety of views and activities in 12 European countries, where differences between junior and senior academic staff and between academics at universities and at other higher education institutions are presented, whenever relevant. As will be shown below, the facilities and resources are predominantly assessed positively by European academics, with the least positive scores for research funding. Hence, the ratings of those at universities are more positive than of those at other higher education institutions. We also note substantial differences in the assessments of junior and senior academics. Assessments are by and large most positive in Finland, Norway, Switzerland, the UK and the Netherlands. Self-declared hours spent on academic work vary as well between European countries, between junior and senior academics and between academics at universities and academics at other higher education institutions. The longest hours spent at work in higher education institutions (when classes are in session) are reported, on average, by all academics in Ireland, Italy and Poland and the shortest in the

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Netherlands, Norway and Portugal. The weekly mean time ranges from 27 h per week (junior staff in Norway) to 52 h per week (senior staff in Germany). Senior staff works longer hours than junior staff in all countries.

Differences in the amount of time spent on teaching and research are striking: academics at universities spend substantial amounts of time on research, when classes are in session, in Switzerland, Norway, Germany and Austria, while substantial time is devoted to teaching in Portugal, the Netherlands, Poland and Ireland. Overall, the academic profession in Europe in the countries studied reveals relatively high levels of job satisfaction – notably in Switzerland, the Netherlands and Italy. They are lowest in Portugal, Ireland and the UK. In some countries, such as Germany, Italy and Switzerland, senior academics are clearly more satisfied than junior and senior academics, while in other countries, such as Norway and the Netherlands, this difference is negligible. However, many academics argue that they work under considerable strain. Altogether, about one-sixth or more would not opt for the academic profession if they had to choose again.

Finally, this chapter indicates striking differences in the academics' income across Europe. At universities, the highest income is reported for both junior and senior academics in Switzerland, followed by the Netherlands and the UK. Academics at other higher education institutions across Europe have, on average, a higher income than those at universities, the only exception being Portugal. This reflects the fact that universities employ substantially larger proportions of junior staff who are generally not as highly paid as senior staff.

The work situation of academics is changing substantially, and this change is central for the academic profession as a whole, as prior analyses underscore. Enders and de Weert (2009a: 252–253) cite five "drivers" as central in changing the nature of the academic profession: massification of higher education, expansion of research, growing emphasis on the societal relevance of higher education and research, globalisation and internationalisation and marketisation policies and practices and managerialism. Similarly, Kogan and Teichler (2007: 10–11) and Brennan (2006, 2007) cite three pervasive recent trends in higher education: relevance, internationalisation and management. Some other analyses refer specifically to financial constraints, differentiation of higher education systems, competitive forces and a growing uncertainty of the academic profession: "We live in times of uncertainty about the future development of higher education and its place in society and it is therefore not surprising to note that the future of the academic profession seems uncertain, too" (Enders and Musselin 2008: 145). This chapter discusses some uncertainties related to academic work and working conditions, comparing the academics' views and activities as presented in the surveys undertaken in 12 European countries.

3.2 Assessment of Facilities and Resources

The academics in the 12 countries were asked to assess the facilities and resources provided by their institutions for their work. Twelve items – classrooms, technology for teaching, laboratories, research equipment and instruments, computer facilities,

library facilities and services, office space, secretarial support, telecommunications, teaching support staff, research support staff and research funding – were rated on a scale from 1 = "excellent" to 5 = "poor".

As Table 3.1 shows, the majority of academics in most countries assessed *classrooms* positively. This holds true for more than 70% professors in Switzerland and Finland. In contrast, just over half in Poland (51%) and less than 40% in Italy (38%) and in the UK (36%) were satisfied in this respect. The ratings by junior staff are similar on average within the individual countries. The only noted difference is in Portugal, with 64% of senior staff and only 47% of junior staff positively assessing classroom facilities.

The technology for teaching is viewed positively. Positive ratings are again most frequent among all academics in Switzerland (78%) and Finland (70%) and least frequent among their colleagues in the United Kingdom (42% each) and Italy (36%). In most countries, senior academics are more satisfied with the technology for teaching than junior academics, but there is no such difference in the UK and the Netherlands. In Germany, Ireland and Norway, junior academics rate it more positively than senior academics.

Laboratories are positively assessed by about half the academics. Positive statements are most frequent in Switzerland (69%), but far below average in the Netherlands (33%), Poland (38%), Italy (29%) and Portugal (36%). There is little difference between the assessments given by senior and junior academic within the countries. On average, the senior staff are more satisfied, and it is only in Norway and the UK that the assessments by junior academics are clearly more favourable than those of senior academics. One could assume that lower expectations rather than the availability of good laboratories explain this finding.

Assessments of *research equipment and instruments* vary strikingly by country. The ratings in Switzerland (73% of senior and 70% of junior academics) contrast very favourably with those in Italy (32 and 28%), Portugal (39 and 28%) and Poland (36 and 33%). Ratings by senior and junior academics are similar on average in most countries. In Norway, however, junior academics are more satisfied than senior academics (59% as compared to only 38%), whereas the opposite is true for Portugal (39% vs. 28%). It reflects a completely different logic of social structure of academic communities in these two countries.

In most countries, the majority of professors assess *computer facilities* positively – mainly in Switzerland, Finland and Norway (more than 70% each). This applies, however, to only less than half in Poland, Portugal, Italy and the UK. In more than half of the countries, senior academics rate computer facilities better than junior academics, but almost no such difference exists in the Netherlands and Finland. Junior academics rate these resources more positively in Ireland and Norway.

Library facilities and services are highly appreciated by more than 70% of the academics in Norway, Ireland, Switzerland and Finland, but only by about half in Portugal, Germany, the UK and Italy. Positive ratings seem to be reinforced by a high level of digitalisation and access to digital resources worldwide. It is worth noting that junior academics in half of the countries rate library facilities and services more positively than senior academics; the opposite is true only in Italy, Portugal and Poland.

Table 3.1 Positive assessment of facilities and support (percentage, at both types of higher education institutions)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Classrooms											
Total	54	72	57	49	57	50	71	37	58	48	37
Senior	55	73	53	51	58	47	74	38	55	64	36
Junior	52	72	59	46	55	51	70	35	62	47	37
Technology for teaching											
Total	58	78	64	42	58	53	70	36	61	50	42
Senior	60	79	61	47	58	51	72	37	58	55	42
Junior	57	78	66	38	58	54	69	35	63	51	42
Laboratories											
Total	45	69	61	38	33	53	53	29	44	36	43
Senior	51	74	56	41	33	53	55	29	40	47	41
Junior	44	68	62	35	33	52	53	28	47	34	44
Research equipment and instruments											
Total	47	70	55	34	36	53	53	31	51	30	39
Senior	51	73	59	36	37	40	51	32	38	39	35
Junior	48	70	53	33	35	56	53	28	59	28	41
Computer facilities											
Total	61	76	69	43	61	64	72	44	75	43	45
Senior	69	80	69	47	61	66	72	47	73	50	48
Junior	59	76	70	40	60	64	71	39	76	42	44
Library facilities and services											
Total	63	70	73	63	63	50	76	53	78	46	52
Senior	61	70	71	67	61	46	70	56	72	55	51
Junior	64	70	73	59	65	52	77	49	82	46	53
Your office space											
Total	62	64	63	49	59	60	67	44	68	45	42
Senior	74	64	67	54	63	62	76	48	74	56	46
Junior	59	64	60	45	56	60	64	38	64	44	40
Secretarial support											
Total	44	56	42	50	45	47	55	33	25	32	34
Senior	37	53	42	53	44	39	47	34	19	26	28
Junior	44	57	42	47	45	49	57	31	29	34	36
Telecommunications											
Total	81	85	80	70	70	80	81	64	84	52	52
Senior	85	84	81	72	71	77	82	66	84	61	53
Junior	80	85	80	67	69	82	81	61	85	51	52
Teaching support staff											
Total	27	46	40	19	36	26	43	15	22	24	35
Senior	23	46	37	22	37	23	36	16	17	25	36
Junior	28	47	42	17	35	27	44	14	26	23	35
Research support staff											
Total	26	48	31	21	27	27	34	17	16	17	32
Senior	24	50	31	23	28	21	28	18	12	18	28
Junior	25	48	31	18	25	29	36	15	20	17	35

(continued)

Table 3.1 (continued)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Research funding											
Total	14	46	20	9	18	24	22	8	23	17	17
Senior	12	37	20	10	18	15	19	8	18	18	13
Junior	15	48	19	8	19	27	23	7	26	17	20

Question B3: At this institution, how would you evaluate each of the following facilities, resources or personnel you need to support your work? (Scale of answers from 1 = excellent to 5 = poor)
Responses 1 and 2 added among senior and junior academics
For country codes, please see Table 1.1 in Chap. 1

In most countries, the quality of *office space* is generally appreciated, notably by about two-thirds of the academics in Finland, Norway, Switzerland and Ireland, while less than 45% are satisfied in this respect in Italy and the UK. Ratings of office space given by junior staff are slightly less positive than those of senior staff. Only in Switzerland are the ratings of junior and seniors equal.

Secretariat support is only positively assessed by most academics in Switzerland (56%) and Finland (55%). This contrasts with few positive ratings given by academic in Norway (25%), Portugal (32%) and the UK (34%). It is interesting to note that in Austria, Switzerland, the Netherlands, Germany, Finland, Norway, Portugal and the UK, junior staff, on average, show greater satisfaction than their senior colleagues. This could be due to substantially lower expectations on their part. The opposite trend is only observed in Italy. In Ireland, the ratings of senior and junior staff are the same (42%).

Telecommunications were most positively assessed among all the facilities and resources addressed in the questionnaire. Ratings exceed 70% in most countries both among senior and junior academics, while the lowest score – in Portugal and the UK (52%) – is slightly over half. Differences between the ratings of senior and junior academics are negligible except for Portugal where those of juniors are lower (61% as compared to 51%).

Teaching support staff is poorly assessed in all countries, with highest positive ratings in Switzerland (46%) and Finland (43%) and lowest ratings in Italy (15%), Poland (19%) and Norway (22%). Teaching support staff is more positively viewed by junior than by senior academics in Poland, the Netherlands, Italy, Portugal and the UK. The opposite situation is found in Austria, Switzerland, Ireland, Germany, Finland and Norway. By and large, the differences are not significant, with the exceptions of Norway (17% senior – 26% junior) and Finland (36% senior and 44% junior).

The ratings of *research support staff* are similar, with the most positive assessments again in Switzerland (48%) and Finland (34%) and the least positive in Norway (16%), Italy (17%) and Portugal (17%). In this respect, junior academics make slightly more positive statements in Austria, Germany, Norway, the UK and Finland, whereas junior staff is slightly less positively impressed in Switzerland, Poland, the Netherlands, Portugal and Italy.

Research funding is the least often positively assessed among research facilities. In many countries, only by about one-fifth of academics gave positive ratings. Exceptional positive ratings are found only in Switzerland (46%). This underscores the general picture of Switzerland as the country with best facilities for academic work in Europe. The least positive ratings are again found in Poland (9%) and Italy (8%). In the vast majority of the countries, junior faculty members provide better assessment of research funding than their senior colleagues, except in Portugal, Ireland, Poland and Italy. These relatively positive ratings by junior academics, again, could reflect different expectations but could also be caused by the professors' impression that research funding has declined over time.

Overall, the facilities and resources are more positively assessed by academics at universities than by academics at other higher education institutions (not presented in Table 3.1). This is consistently true in those countries where the ratings by universities are very positive (Switzerland and Finland, but also Norway, the UK and the Netherlands). In other countries, where the ratings by academics at universities are less positive, the facilities at other institutions are equally or even more positively assessed, at least according to some categories. For example, the teaching conditions are in some respects more positively assessed at other higher education institutions. Finally, the facilities and resources are similarly assessed in Poland by academics in both types of higher education institutions: unlike in other countries, massification of higher education could have led to a loss of distinction in the quality of working conditions between the higher education sectors.

3.3 Workload and Allocation of Work Time

It is widely assumed that academics in Europe are expected to spend about 40% of their time on teaching, 40% on research and the remaining 20% on service and administration. The mix of research and teaching, as Burton Clark pointed out, "comes close to determining everything else about academic life" (see de Weert 2009: 136). The distribution of time, however, varies by institutional types, and national systems of higher education and research vary in terms of institutional compositions: whether all or only some higher education institutions are more or less equally in charge of higher education and whether most publicly funded research is accommodated at higher education institutions or in substantial parts outside higher education. For many years, a distinction has been made between unitary and binary systems in higher education. A more recent typology by de Weert (2009: 140–141) takes for granted that the distinction between universities and other higher education institutions becomes blurred in the Bologna Process. de Weert, therefore, cites three models: (1) integrated systems (Germany, Italy, Austria – as well as most Central European systems except Romania, including the biggest system in the region, Poland); (2) concentration of research in a separate set of research institutes (France); (3) vertical institutional differentiation in the national system (the Anglo-Saxon tradition).

Table 3.2 Weekly working hours when classes are in session (arithmetic mean, both types of higher education institutions)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Senior academics	49	49	50	45	40	52	46	46	42	41	47
Junior academics	41	41	45	45	37	38	41	44	27	39	42
All academics	42	42	47	45	38	41	42	46	33	40	44

Question B1: Considering all your professional work, how many hours do you spend in a typical week on each of the following activities? (Hours per week)
Here, part-time and full-time academics are mixed

In the study, academics from all types of institutions were asked to state the number of weekly hours each for the period when classes are in session and when classes are not in session. They were asked to subdivide the time according to teaching, research, administration, service and other activities. The longest average weekly hours when classes are in session are reported by all academics, that is, senior and junior academics at both types of higher education institutions. They are in Ireland (47 h per week), Italy (46 h) and Poland (45 h).[1] The average also exceeds 40 h per week in more than half of the countries, slightly less than 40 h in the Netherlands and Portugal and only 33 h in Norway (see Table 3.2).

Overall, academics in Europe estimate their weekly working time when classes are in session at between 27 h (junior staff in Norway) and 52 h (professors in Germany). On average, senior academics work more hours than junior staff. This difference ranges from almost 15 more hours in Norway and Germany to more or less the same time in Poland. Only part of this difference is due to the fact that part-time employment is more widespread among junior staff than among senior staff.

Of all the academics surveyed in the respective countries, those in Switzerland (44%), Norway (43%), Germany (41%) and Austria (39%) spend on average most hours on research. As Table 3.3 shows, academics in Finland spend more or less the same number of hours on teaching and research while classes are in session, while those in Portugal (54%), the Netherlands (54%), Poland (44%) and Ireland (43%) state that they spend more time on teaching than on research. Somewhat surprisingly, Poland, commonly believed to have teaching-focused higher education institutions, is not at the bottom of the list concerning time spent on research.

When classes are not in session, academics spend on average less than one-fifth of their time on teaching (including all teaching-related activities) and more than half their time on research. Teaching activities take the relatively largest share in the Netherlands (32%), Portugal (27%) and Poland (22%), while research is most widespread during this period in Norway (66%), Italy and Austria (59% each).

The time spent by junior academics on research as compared to that on teaching varies more strikingly between countries than in the case of senior academics. In some countries, a substantial share of junior academics is only in charge of teaching,

[1] That is, the means of all national means.

Table 3.3 Weekly hours spent on teaching and research when classes are in session and when classes are not in session (arithmetic mean of percentages, both institutional types)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Teaching											
When classes are in session	30	27	43	44	54	32	39	41	34	54	38
When classes are not in session	13	12	19	22	32	16	19	18	11	27	17
Research											
When classes are in session	39	44	26	32	22	41	40	37	43	28	31
When classes are not in session	59	56	47	50	40	56	58	59	66	51	51

Question B1: Considering all your professional work, how many hours do you spend in a typical week on each of the following activities? (Hours per week) (A) Teaching: Preparation of instructional materials and lesson plans, classroom instruction, advising students, reading and evaluating student work. (B) Research: Reading literature, writing, conducting experiments, fieldwork. (C) Service: services to clients and/or patients, unpaid consulting, public or voluntary services. (D) Administration: committees, department meetings, paperwork. (E) Other academic activities: Professional activities not clearly attributable to any of the categories above

Table 3.4 Weekly hours spent on teaching and research when classes are in session (arithmetic mean of percentages, both institutional types)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Teaching											
Senior academics	29	30	32	43	41	35	42	40	42	44	40
Junior academics	29	19	41	45	49	27	28	42	26	52	36
Research											
Senior academics	34	35	30	32	33	31	28	37	30	30	27
Junior academics	41	56	29	33	33	48	55	38	58	31	34

Question B1 (as in Table 3.3)

and in some countries, junior staff has a smaller teaching load than senior staff in order to qualify for a professorship, predominantly through research achievements (notably those who have not yet been awarded a doctorate); in other countries, in contrast, junior academics have a similar or higher teaching load than senior academics. Juniors notably spend more time on average than senior academics, when classes are in session, in Norway (58% vs. 30%), Finland (55% vs. 28%) and Switzerland (56% vs. 35%). In contrast, as Table 3.4 shows, juniors and seniors spend about the same amount of their work time on teaching and research when classes are in session in Ireland, Poland, the Netherlands and Portugal.

Also at times, when classes are not in session, senior academics altogether across countries spend slightly more time than junior academics on teaching. Again, there are variations between countries: While junior academics in Norway spend substantially more time on research during this period than senior academics, this difference is small in Ireland and Portugal.

In explaining the time share between teaching and research, we cannot only refer to the above-stated national distinction to understand the research and teaching roles of junior staff and senior staff. In addition, senior staff, on average, spends more time on other functions: service, for example, services to clients and/or patients, unpaid consulting and public or voluntary services, and administration, for example, work in committees, department meetings and paperwork. For example, administrative work can be viewed as both (time-consuming) privilege and duty for senior academics, while juniors cannot play a central role in intra-institutional decision-making.

Furthermore, higher education institutions in some countries (e.g. Switzerland, Finland, Ireland, Germany, the Netherlands and Portugal) are subdivided into universities which are more or less equally in charge of teaching and research and other higher education institutions which are predominantly in charge of teaching on the one hand and those with no such a clear institutional divide (e.g. Italy, Poland and the United Kingdom) on the other.

Moreover, we must take into consideration that teaching and research are, to a different degree, regulated or open to individual choices. Clark (1987: 72–73) pointed out that teaching loads were defined for most academics, whereas "'the research load' was not part of the vocabulary", and research was carried out "in time freed from teaching". Professors are "saving hours for research". Time spent on administration is "time diverted": "it may be mandated, but it steals away from something more basic and is seen as more of a burden; more time for research is not. Time spent on administration, we may note, is widely viewed as wasted, often not even regarded as a legitimate demand" (Clark 1987: 72–73). The personal options to spend more time on teaching or on research are influenced by the academics' views about the trade-offs and tensions between teaching and research (see Enders and Teichler 1997). In recent years, the academics' activities seem to become more diversified, whereby the demands from different directions seem to grow. For example, the ability to raise money and to manage research projects based on external funding, as Musselin (2007: 177) points out with reference to Germany and the US, "is no longer something academics can do: it is something they must do". Not surprisingly: "the traditional job of the professor is expanding to include entirely new kinds of responsibilities" (Altbach 2007: 153). This seems to be increasingly the case throughout most competitive European higher education systems. We observe "blurring boundaries between traditional roles and quasi-entrepreneurial roles.… Academics are, for example, increasingly expected to raise their own research funding, and success in leveraging funding becomes more and more important for both the institution and the individual faculty member" (Enders and Musselin 2008: 145). Hence, increasingly diversified academic activities and new responsibilities, or changing the balance between responsibilities, seem to contribute to professional stress and have an impact on academic satisfaction. Many academics believe that they are required "to do more with less" (Welch 2007: 11), and that there are "imperatives for faculty to do 'more'" (Schuster and Finkelstein 2006: 75–134). Therefore, it is interesting to note how many academics consider their job as a strain and how many are dissatisfied.

3.4 Job Satisfaction

Overall, the academic profession in Europe in the countries studied seems to bring relative satisfaction. On the scale from 1 = "very high" to 5 = "very low", senior academics at both institutional types in Switzerland, the Netherlands and Italy rate their job satisfaction in the 1.9–2.1 range, in Austria, Finland, Poland and Norway 2.2, and in Germany 2.3. As Table 3.5 shows, the ratings are 2.4 each in Portugal and Ireland, while the mean of 2.6 in the UK expresses the highest level of dissatisfaction in Europe. The ratings by junior staff are slightly less positive (2.4 as compared to 2.2) across countries. The most obvious difference with senior staff is a lower degree of satisfaction in Portugal (2.8 vs. 2.4) and Switzerland (2.2 vs. 1.9).

The share of those who are satisfied with their job (scores 1 and 2 on a five-point scale) is highest among seniors in both types of higher education institutions in Switzerland (82%) and the Netherlands (78%). It ranges from two-thirds to three-quarters in most countries and is only lower in Ireland (60%) and substantially lower in the United Kingdom (49%). Conversely, the share of those who are dissatisfied is 18% in Ireland, 16% in the UK and between 5 and 13% in the remaining countries. The only European country which clearly stands out is the UK. The situation is not very different from what was reported in the academic profession studies in the 1990s and 2000s (e.g. Fulton and Holland 2001).

The data suggest that job satisfaction does not differ substantially between academics in universities and those in other higher education institutions. This holds true for both senior and junior academics. It allows us to have a more detailed analysis of academics in universities who have been under growing political and (in particular) economic pressure. With growing various expectations aired by external stakeholders, the traditional role of universities has recently been questioned, as has the traditional role of a faculty. Under the circumstances, it is worth drawing attention to the job satisfaction of university academics.

Table 3.6 shows the extent of job satisfaction at universities. We see that the gap of job satisfaction between senior academics and junior academics varies substantially by country. We hardly note this gap in Norway (2%) and the Netherlands (3%). In contrast, junior academics are clearly less satisfied than senior academics at universities in Germany (16% difference), Italy (15%) and Switzerland (14%).

The respondents from universities were also asked to react to the following statement: "This is a poor time for any young person to begin an academic career in my field". As Table 3.7 shows, this view is shared most frequently by both senior and junior university academics in Austria and Italy (2.0). The most optimistic views of the academic career opportunities for young people were found in Norway, Switzerland and the Netherlands. It is interesting to note that they are not viewed most pessimistically in those countries where academics express a low degree of job satisfaction. Academics in the United Kingdom and Portugal – that is, the countries with a low average job satisfaction – do not view the future as particularly bleak.

Table 3.5 Overall job satisfaction (arithmetic mean[a], both institutional types)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Senior academics	2.2	1.9	2.4	2.2	2.1	2.3	2.2	2.1	2.2	2.4	2.6
Junior academics	2.4	2.2	2.5	2.4	2.2	2.6	2.3	2.4	2.3	2.8	2.8

Question B6: How would you rate your overall satisfaction with your current job?
[a]Responses on a scale from 1 = very high to 5 = very low

Table 3.6 Overall job satisfaction (percentage, universities)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
High satisfaction[a]											
Senior academics	73	83	59	67	76	71	72	70	69	66	49
Junior academics	60	69	53	58	73	55	65	55	67	54	43
Low satisfaction[b]											
Senior academics	13	6	19	8	8	10	6	5	9	9	15
Junior academics	12	9	18	11	10	16	10	10	9	18	20

Question B6: as in Table 3.5
[a]Responses 1 and 2 added
[b]Responses 4 and 5 added

Table 3.7 Assessment of young persons' academic career prospects (arithmetic mean[a], universities)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Senior academics	1.8	3.2	2.6	2.9	3.1	2.9	2.5	2.0	3.4	2.9	2.6
Junior academics	1.8	3.2	2.7	2.8	2.9	2.9	2.7	1.8	3.7	2.9	2.6

Question B5: Please indicate your views on the following: "This is a poor time for any young person to begin an academic career in my field"
[a]Responses on a scale from 1 = strongly agree to 5 = strongly disagree

Job satisfaction was also addressed in an additional statement in the questionnaire: "If I had it to do over again, I would not become an academic". On average, across countries, 15% of the senior academics and 17% of the junior academics state that they would not do it again. As Table 3.8 shows, the most negative views are expressed by university academics in the United Kingdom (22% among seniors and 30% among juniors). It is worth noting the responses by academics in Finland: while senior academics respond very positively to this statement with only 9% of negative responses, juniors are among those who react fairly negatively (20%).

Table 3.8 Willingness to become an academic again (percent[a], universities)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Senior academics	16	13	14	17	18	17	9	9	15	15	22
Junior academics	17	14	13	18	15	19	20	15	17	15	30

Question B5: Please indicate your views on the following: "If I had it to do over again, I would not become an academic"

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

The same questions and items as regards job satisfaction had been asked in the Carnegie survey undertaken in 1992. Thus, a comparative trend analysis is possible for three European countries: Germany, the Netherlands and the UK. For example, in 1992, 42% of academics in the UK, 36% in Germany and 29% in the Netherlands agreed with the statement about "a poor time for any young person to begin an academic career". Thirteen percent of academics in the Netherlands, 17% in Germany and 20% in the UK responded that they would not become academics if they had to do it over again. At that time, the responses by academics in Germany were among the most negative ones in the Carnegie survey. Thereafter, changes moved in different directions: academics in Germany became more positive in various dimensions of job satisfaction, while the opposite was true for academics in the United Kingdom.

Finally, both the Carnegie study and the recent EUROAC study explored the number of academics who considered their job as a source of strain. They also aimed to establish how responses to this question were related to the academics' overall job satisfaction.

As the Carnegie survey report put it, "one wonders about the personal strain among professors. How much does it reflect financial worries? How much does it involve frustration over inadequate facilities and technical support? How much does it reflect the contradictory signals faculty are often given about the value of their work?" (Boyer et al. 1994: 14). All these questions are relevant today, but it is still hard to link professional stress directly to all of them: in the present survey, only the overall level of remuneration, the overall satisfaction with different facilities and a number of points related to intrinsic and extrinsic value of academic work were reported. What is certainly clear is that the causes for professional stress are many. In some countries, they are more related to income, in others to increasingly managerial management styles or measuring effectiveness through performance indicators.

More than half of the academics at universities both in the United Kingdom (61% among seniors and 56% among juniors) and the Netherlands (56 and 58%) see their job as a source of strain. Table 3.9 suggests that the European averages are somewhat lower (43% each) and that the job is seen much less frequently as a source of strain in Italy (27 and 35%) and Norway (34 and 35%).

In comparing the findings with those of the Carnegie study, we note that strain seems to have increased in both European countries for which data are available at both points in time. However, greater strain increase was found in the United Kingdom

Table 3.9 Views that the job is a source of considerable personal strain (percentage[a], universities)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Senior academics	43	40	47	34	56	48	51	27	34	38	61
Junior academics	42	41	42	40	58	36	46	35	35	47	56

Question B5: Please indicate your views on the following: "My job is a source of considerable personal strain"

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

(from 45 to 61% among senior academics and from 49 to 56% among junior university academics) than in Germany (from 41 to 48% and from 32 to 36%).

Overall, there are marginal differences between academics from universities and from other higher education institutions, but several points need to be made. In Switzerland, Ireland and Germany, an academic job at a university seems to be a considerably greater source of strain than a job in the non-university sector. This is notably the case in Switzerland (41% vs. 30%) and Ireland (44% vs. 32%). In a few other countries, the opposite holds true.

3.5 Links Between Income and Job Satisfaction

Job satisfaction, from a global perspective, is also linked to income, which is an important factor in determining the overall shape of the academic profession. It is linked to the ability of academic institutions to attract and retain able individuals (Schuster and Finkelstein 2006: 234). Competitive salaries can be expected to draw the brightest graduates and doctoral students to the academic profession, especially when universities are increasingly treated like other organisations in both the public and private sectors. The prestige of the academic profession is relatively high but, globally, diminishing. Young academics are being compared to young professionals and university professors to advanced professionals. High job security and a friendly, non-competitive workplace are less and less common throughout Europe, as reported by indicators such as personal stress, individual affiliations, academic freedom and pressures to publish or obtain competitive, external funding.

As Philip Altbach and colleagues recently stressed in their global survey about academic salaries, "central to the working conditions of the professoriate is remuneration.… We are convinced that successful universities and academic systems must offer their academic staff adequate and assured salaries, along with the option to pursue a full-time career path with appropriate guarantees of long-term employment. Without these conditions, no academic institution or system can be successful – let alone achieve world-class status" (Rumbley et al. 2008). University professors in Europe and in North America were traditionally members of the (often upper-) middle classes and their financial status in the post-war period was relatively stable. But in most European countries, academic incomes seem not to

have caught up with those of other professionals in the last two decades. References to the "proletarisation" of the academic profession have been heard more often in higher education research (see, for instance, Fulton and Holland 2001; Enders and de Weert 2009b). So far, the general rules have been clear: "along with full-time commitment, salaries must be sufficient to support a middle-class lifestyle. … professors must be solid members of the middle class in their country" (Altbach 2007: 105). In all the European countries studied, these conditions seem to be met for senior academics; for junior academics, the link has been much weaker. Overburdened, overworked and (relatively, compared with other professionals) underpaid academics will not be able to make European universities strong and attractive (and as Cavalli and Moscati concluded recently, "underpayment and an uncertain future make the academic profession less appealing when compared with other professions in almost every country", 2010: 50).

Current global trends show the diminishing attractiveness of the academic career, academic workplace and academic remuneration and, consequently, may indicate growing future problems in the retention of best talents in academia in the future. Attractive higher education systems should be able to offer academics competitive career opportunities. The widening gap between the economic status of academics and other professionals needs to be stopped, at least in top national institutions, to avoid further "greying" of the academic profession and to make universities a career option for the best talents. In the context of the current economic crisis in Europe, it must be stressed that, historically, and based especially on the US experience, budget cuts in higher education in financially harsh times have always been disproportionately higher than in other public services.

Globally, academic working conditions and remuneration have been deteriorating, as was documented by comparative studies edited by Altbach (2000, 2002; Rumbley et al. 2008). Teichler and Yağcı stressed that "in a substantial number of countries, the salary level of academic staff in higher education and research institutions is far too low to earn a living" (Teichler and Yağcı 2009: 108). But European countries do not seem to follow this pattern. Overall, while global comparative academic profession literature shows the clear links between job satisfaction and academic incomes, especially in middle-income and developing countries (Altbach 2000; Welch 2007), in the specific context of the high-income European countries studied in the survey, the links are weak.

Several cross-country differences in academic incomes need to be stressed. The survey reveals significant differences in academic incomes across Europe and shows that the highest median income for both junior and senior respondents is in Switzerland, followed by the Netherlands, Italy and Norway. At the other end of the spectrum, there are countries where academics earn considerably less, such as Poland. This difference is substantial, but it is not surprising, considering both national GDP and the average salaries of professionals in these countries. There is a third, largest group of countries for which cross-national differences between the income of academics are small (see Chap. 2 for details). Academic incomes substantially increase with the progression in the academic career: professors in all

systems report considerably higher income than the juniors (on average, professors earn approximately twice as much as their junior fellows except in Switzerland where the income gap is larger). The UK and the Netherlands stand out as countries with the smallest differences in distribution of income between senior and junior academics. Academics employed at other higher education institutions in general have higher incomes than university academics, with the exception of Portugal. The greatest differences between academic incomes at universities and other higher education institutions are in Germany and Finland. The explanation could be in some countries that the non-university sector has a strong focus on applied sciences and has traditionally been closely linked to the business sector and can provide much more attractive financial conditions for academics than the university sector. In other countries, the substantially lower proportion of junior staff at universities explains this difference.

3.6 Conclusion

The academic profession in Europe is very much under pressure and working under considerable personal strain. Even though academics work beyond routine hours, they are relatively satisfied and consider their working conditions as good or acceptable. Across Europe, they assess their current access to research funding as lowest among the various categories of facilities, resources and personnel. On average, there is no enthusiasm in Europe about academic work and working conditions, but there are no complaints. Seniors and juniors differ substantially in their employment situation, as another chapter in this volume shows (see Chap. 2), but, in most countries, they differ only moderately in their perception of the work situation and their job satisfaction. It can be argued that between seniors and juniors, there are substantial differences in employment conditions, some differences in working conditions and very similar attitudes to research, teaching, university governance, etc. (as also shown in other chapters). There are significant cross-country differences in Europe. Some higher education systems seem more academic-friendly (e.g. Switzerland) and less academic-friendly (e.g. the United Kingdom), to give two extreme cases. About one-sixth or one-fifth of academics would not enter the academic profession if they had a choice, which is a powerful warning for some countries (especially the UK where the reported rate is 22% for senior and as high as 30% for junior staff).

The commitment to research as a university mission differs drastically across Europe between institutional types and between junior and senior academics, with some systems clearly more research-oriented (e.g. Switzerland and Norway) and some clearly more teaching-oriented (e.g. the Netherlands, Ireland and Portugal).

What seems to be gone is the golden age of the research university professor (which perhaps existed only as an idea or as a reference point for generations of scholars looking back to their predecessors). The number of academics has radically

increased in the last few decades following the massification of higher education throughout the continent. A sense of nostalgia, or even loss, of good old times among academics seems perhaps inevitable. National systems count up to two million students in the biggest economies (France, Germany, Italy, the UK, Poland and Spain), with more than 100,000 academics in each. As Burton Clark put it, "the size of the profession affects the strength of its cultural bonds. One of the reasons why older professors in numerous systems can reminisce happily about their lives in the old days of 'elite' higher education is that the overall profession was much smaller" (Clark 1983: 93). The academic profession of today is becoming increasingly differentiated between various academic professions, as it is clearly empirically demonstrated in the EUROAC project, with different perceptions, norms, working habits and incomes across not only different countries but also across generations, research fields and institutional types within the countries studied. The processes of stratification of the academic profession(s) are well advanced across the continent.

In the last two or three decades, the transformations of the European higher education systems have been substantial, with a significant impact on the academic profession. Today, the growing complexity of the academic enterprise leading to growing uncertainty about its future is also due to the fact that higher education systems in Europe have been under great reform pressures in the last two or three decades, following the huge reforms of the 1960s and early 1970s. Recent reform initiatives lead to current reform initiatives which, in turn, may lead to new reform initiatives (not only in Europe but, globally, in both the developed and developing worlds). Reforms throughout the continent increasingly lead to further waves of reforms. Higher education as a whole has already changed substantially in most European economies, and this trend is expected to continue. Perhaps the least susceptible to fundamental changes in the next decades will be the traditional research university, which is seen as crucial for the economic prosperity of regions and nations. Different directions of academic restructuring in different countries and within particular national systems add to the complexity of the picture which certainly leads to a more stressful work environment than three decades ago or more. Academics, the core of the academic enterprise, are working in turbulent times. Universities and other higher education institutions have been changing more rapidly than ever before in the last two centuries, together with their social and economic environments.

The changes in academic work are intensive today, but for the first time, they can be assessed in much more detail through large-scale European quantitative research which provides a refined empirical dimension to the growing academic profession research literature. There are ongoing changes in academic work, and there are attempts to measure them and draw valid conclusions from the empirical material available. But it may be that the sheer scale and speed of changes make it hard for the community of higher education researchers to interpret them. The gap between data and their interpretation may be greater in times of change like today than in times of relative stability.

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Chapter 4
Gender Differences and Inequalities in Academia: Findings in Europe

Gaële Goastellec and Nicolas Pekari

4.1 Introduction: The Place of Women in Academic Markets

For several decades, research has shown a clear historical trend of women catching up quantitatively in access to academic positions (see the survey results in Altbach 1996; Teichler 2009). This trend differs depending on the country, the higher education sectors and the disciplines, as well as when considering their access to different academic statuses in a more qualitative way. Men and women are still unequally distributed in the academic hierarchy: many research endeavours underline differences in terms of access to full-time positions in prestigious higher education institutions, access to specific fields, obtaining higher ranks and salaries, having high publication rates and being satisfied with teaching loads and advancement but also in the probability of being married with children (Long and Fox 1995; Jacobs 1996; Brooks 1997; Wilson 2003; White 2004; Probert 2005; Nakhaie 2007; Toutkoushian et al. 2007; Boreham et al. 2008; Monroe et al. 2008). Others underline the "gendered nature of academic work" (Poole et al. 1997).

What is the situation of women in the European higher education systems today? Which gender differences characterise academic positions and academic work? How are women dealing with higher education governance? How do they relate to teaching and research in comparison with men? How different is the situation in the various countries? This chapter is an attempt to provide an overview

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of gender-sensitive dimensions in a comparative perspective. In order to do so, it questions gender differences at two main levels: status achieved and activities.

A first section presents a broad panorama of the situation in Europe by comparing the main characteristics of the gender distribution between countries, by taking into account the academic status (junior/senior), the higher education sector (universities/other higher education institutions) and the academics' disciplinary home.

The second section analyses the gender gap regarding access to full-time and permanent employment. These two indicators were selected because they address important issues: access to permanent positions and thus to secure employment is a very important step in an academic career. To a certain degree, belonging to the legitimated academic community starts with a permanent position. Full-time employment could be a more controversial indicator, because part-time work can be an individual choice or an institutional constraint. But it also distinguishes academics according to those who are totally "in" and those who remain partly "out". Concerning the United States, the National Science Foundation underlines that "all other things being equal, female faculty find it more difficult than male faculty to achieve tenure and to be promoted to senior academic ranks" (2003: 14). Is it also the case in the European academic systems? Is wider access to academic positions for women accompanied by a process of diversion?

The third part addresses the issue of gendered activities. It interrogates the objective situation of women in academia and attempts to characterise differences in their professional activities. Usual stereotypes characterise women as more teaching-oriented. Which differences can we objectively observe regarding teaching, research, administration and governance activities?

From a methodological point of view, this chapter adopts different statistical perspectives. Cross tabulations and comparisons of means are predominantly used to describe gender differences by country, taking into account differences in status and institution types. However, gender differences at face value could be due to other underlying factors, such as the gender composition of the different disciplines, status groups and types of institutions. Notably, career dynamics are too complex to be explained by descriptive statistics only. There is a necessity to control for socio-demographic variables – such as age and academic rank – in order to interpret the results appropriately. Regression analyses – binary logistic regressions for binomial variables and ordered logistic regressions for Likert-type scales – are used to control for these factors and, thus, try to understand the mechanisms underlying gender differences.

The difficulty of analysing the gender issue in an internationally comparative way and for different types of academic positions is due to the plurality of levels to be taken into account. In order to go from a detailed presentation of national specificities to a more general comparison of national situations, aggregated indexes were developed that provided an "at a glance" view of the national situations. These indexes are, as all indexes, to be used with caution.

4.2 Gender Distribution

4.2.1 Women in the Higher Education Systems

The proportion of women in the various national academic markets represented in the EUROAC study varies between 32% in Italy and 47% in Ireland. More broadly, one can distinguish between countries where women represent less than 40% of the faculty (Italy, Germany, the Netherlands, Austria, Switzerland and Norway), and countries where they represent between 43 and 47% (Portugal, Croatia, Poland, Finland, the UK, Ireland).

4.2.2 A Question of Status: Academics in the University Sector

In all countries surveyed, the proportion of women amongst junior academics is about one-and-a-half times higher than amongst senior academics. This could testify of a "democratisation" of women's access to the academic world. But barriers remain when it comes to access to the most prestigious positions. Here again, differences by country are striking.

Regarding the proportion of senior academics, countries can be classified into four groups: countries where women represent less than 20%, Germany, the Netherlands and Switzerland; between 20 and 25%, Austria, Italy and Norway; between 26 and 30%, Croatia, Finland and Portugal and more than 30%, Ireland, Poland and the UK. Similarly, women represent up to 40% of junior academics in the Netherlands, Germany and Switzerland; between 41 and 46% in Austria, Portugal and Italy; 47–50% in Finland, Poland, Croatia and Norway; and more than 50% in the UK and Ireland.

4.2.3 Universities and Other Higher Education Institutions

In various European countries, the proportion of women at other higher education institutions is higher both amongst junior and senior academics than at universities (Finland, the Netherlands, Norway, Poland, Switzerland and the UK). This could be due to a relatively lower prestige of other higher education institutions. In Switzerland, the universities of applied science have only recently been upgraded to the rank of higher education institutions. In these institutions, the PhD requirement for academics is very recent and no PhD training is offered. There are exceptions, though, as Table 4.1 shows: at Irish universities, the

Table 4.1 Proportion of women by institutional type and status (percentage)

	2010						2007/2008						
	AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean[a]
Seniors at universities	22	17	28	33	19	38	18	27	24	25	29	33	26
Juniors at universities	42	40	49	58	35	49	38	47	46	50	45	52	46
Seniors at other HEIs		18		24	39	47	20	37		37	47	33	34
Juniors at other HEIs		47		49	43	53	19	52		61	42	53	47

Question: What is your gender?
For country codes, please see Table 1.1 in Chap. 1
[a]As the national numbers of respondents vary from country to country, throughout the text the means describe the arithmetic mean of the national means

Table 4.2 Proportion of women by disciplinary group (percentage)

	2010						2007/2008						
	AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Hum. & soc. sciences	48	52	57	52	47	58	48	59	45	45	54	57	52
Business & law	45	35		42	19	53	35	44	26		48	49	40
Life sciences & medicine	40	43	46	46	52	53	39	61	33	49	45	43	46
Physics & engineering	20	20	29	44	22	28	18	22	27	19	27	33	26

Question: Please, identify the academic discipline or field of your highest degree

proportion of women is higher amongst both senior and junior academics at universities than at other higher education institutions, and the same holds true in Germany for junior academics.

4.2.4 A Question of Discipline

As is known from various statistical analyses, the share of women differs in the various disciplinary groups. According to the EUROAC survey, women comprise more than 50% of academics in social sciences. In life sciences and medicine, they comprise 61% of the Finnish, 53% of the Polish and 52% of the Dutch faculty. In business and law, this is only the case in Poland (53%), whereas they make up half the faculty in the UK. Finally, in physics and engineering, women represent a third or less in all but one country, as Table 4.2 indicates.

In indexing the countries, we note that a low representation of women is more or less consistent according to all the analysed criteria. In Table 4.3, this is demonstrated for the overall share of women amongst juniors and seniors at universities, as well as in physics and engineering. Germany, Switzerland and the Netherlands clearly appear as the countries with the greatest gender differences.

Table 4.3 Country index:[a] proportion of women at universities

	Seniors	Juniors	Physics & eng.	Score	Index
Germany	2	2	1	5	1
Switzerland	1	3	3	7	2
Netherlands	3	1	4	8	3
Italy	5	6	6	17	4
Norway	6	10	2	18	5
Austria	4	4	11	19	6
Finland	8	7	4	19	6
Portugal	9	5	6	20	8
Croatia	7	9	9	25	9
Poland	11	8	8	27	10
UK	12	11	10	33	11
Ireland	10	12	12	34	12

[a]From the lowest share (rank 1) to the highest share (rank 12)

4.3 Contractual Employment Conditions: Full-Time Employment

Previous research suggests that women are not only underrepresented amongst academics but also in less favourable employment conditions. Two indicators, part-time employment and permanent employment, that represent two measurements of potential gender inequalities are used in the following analysis of the academics in 12 European countries.

4.3.1 Lower Share of Women Employed Full-Time

The results of the EUROAC survey indicate substantial differences in the rate of full-time employment (it is important to note that academics employed less than half of a regular work time were not surveyed). Around 90% and more of the respondents are employed full-time in Poland, Italy, Ireland, Portugal and Norway; between 70 and 90% in the UK, Finland and Germany; and less than 70% in Austria, Switzerland and the Netherlands (see Table 4.4).

In most countries, a lower share of women than men is employed full-time. Only in Italy and Portugal the opposite is true, and only small differences hold true in Finland, Ireland, Norway and Poland. Countries with the largest gap are the Netherlands (38% amongst women vs. 72% amongst men), Germany (52% vs. 81%), Switzerland (41% vs. 69%), the UK (75% vs. 96%) and Austria (56% vs. 72%). Altogether, differences according to gender are great in countries where the overall proportion of full-time employment is relatively low.

When examining full-time employment according to academics' status in general, we observe that more than 90% of the seniors are employed full-time in all countries except the Netherlands (74%). Second, full-time employment on average

Table 4.4 Full-time employment by institutional type, status and gender[a] (percentage)

		2010					2007/2008						
		AT	CH	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	Male	94	92	95	78	98	99	94	96	94	96	97	94
	Female	89	86	96	52	96	100	95	98	93	100	90	90
Juniors at universities	Male	66	66	91	79	99	77	84	97	91	79	95	84
	Female	55	42	86	55	99	46	71	98	82	89	71	72
Seniors at other HEIs	Male		75	100	73	97	96	89		90	95	75	88
	Female				40	100	94	89		91	100		86
Juniors at other HEIs	Male		60	96	60	94	83	85			91	86	82
	Female		35	90	23	99		86		91	97	56	72

Question A7: How is your employment situation in the current academic year at your higher education institution/research institute?

[a]No data available for Croatia

is less frequent amongst junior academics than amongst senior academics, but there are substantial differences by country. No noteworthy difference exists in this respect in Italy and Poland, and the respective difference is small in Ireland, the Netherlands and Norway. In contrast, we note a wide gap of at least 30 percentage points in Austria, Germany and Switzerland.

Amongst senior university academics, full-time employment is less frequent amongst women than amongst men, but there are exceptions of more or less equal rates or even slightly higher rates amongst women. The only wide gap is observed in the Netherlands, where part-time employment is more frequent: only 52% of senior women academics at universities are employed full-time, as compared to 78% of men. Amongst junior university academics, in contrast, a gender gap in disfavour of women exists in all countries but most strikingly in Germany (46% vs. 77%).

At other higher education institutions, the situation is similar with respect to senior academics. Amongst junior academics, however, we note striking differences by country, with an even wider negative gap for women in the Netherlands (23% vs. 60%) on the one hand and an even higher rate of women being employed full-time in Portugal (97% vs. 91%) on the other.

In indexing the countries and the academics' status, we again note a substantial gender gap in the Netherlands, Switzerland and Germany. Table 4.5 shows, however, that there is a high gender gap as regards full-time employment as well in the UK, coming in second position. Portugal has the least inequality between women and men.

4.3.2 Weight of Gender for Full-Time Employment

We first set up logistic regression models in two steps.[1] The first model includes only gender, whereas the second adds the control variables for age, marital status, having children at home, education of father, academic rank, type of institution and

[1] Detailed results available on request.

Table 4.5 Country index:[a] gender gap in full-time employment at universities

	Seniors	Juniors	Score	Index
Netherlands	1	2	3	1
UK	2	2	4	2
Switzerland	3	2	5	3
Germany	7	1	8	4
Austria	4	6	10	5
Finland	7	5	12	6
Norway	6	7	13	7
Poland	5	9	14	8
Ireland	7	8	15	9
Italy	10	10	20	10
Portugal	11	11	22	11

From the highest gender gap (rank 1) to the lowest gap for women (rank 11)
[a]No data available for Croatia

discipline. We wish to thus identify in which countries gender is significant, all other things being equal. For instance, we hypothesise that, in some countries, differences in gender composition between disciplines or types of institutions could partly explain the differences in full-time employment in academia.

This first regression analysis shows that:

- Gender alone is a strong predictor of full-time employment in four countries: Germany, the Netherlands, the UK and to a lesser extent, Switzerland. This is identifiable by their low odds ratio for gender and relatively high pseudo *R*-squared[2] (between 0.18 and 0.33) for the model. In these countries, adding the control variables does not affect the significance of the gender variable, which remains very high ($p < .001$).
- In four countries – Austria, Ireland, Finland and Norway – gender is significant, even strongly so, but the explicative power of the model with gender only is low. In most cases, the significance level becomes low when adding the control variables, becoming nonsignificant in Norway. In Austria, disciplinary fields seem to play an important role in the distribution of full-time employment, whereas in the other countries in this group, it is more strongly dependent on academic rank.
- No gender differences exist in either of the models in Poland and Italy. This is probably due to the fact that part-time work is very marginal in these countries.
- Portugal stands out as a special case, where gender differences are reversed. This is probably due to the historically low prestige of the academic profession in the country and thus a lesser attractiveness for men. The model must be interpreted with care, as the proportion of missing cases is over 50%.

[2] Care has to be taken when interpreting pseudo *R*-squared, but as the models are identical for each country, we consider a comparison between the scores appropriate.

4.3.3 Dimensions Influencing Gender Differences

After this first analysis, we wished to find out what was the relative weight of the different variables that could explain gender differences in full-time employment. We ran a logistic regression separately for each gender in each country (see Table 4.6) and observed again substantial differences by country. The dimensions addressed are grouped subsequently as individual characteristics and professional characteristics.

Amongst *individual (ascribed) characteristics,* age does not play a substantial role in all countries. On the one hand, younger women in the UK are more often employed full-time than older women. On the other, in Austria, Finland, Germany, Italy and Poland, age increases the probability of women being employed full-time. In other words, women have to wait to be employed full-time.

When it comes to personal status, being married or not is sometimes relevant: married men work less often full-time than unmarried men in Italy, Finland and Germany. The same is true for German women. In the same vein, having children at home negatively influences the probability of working full-time for women in Austria, Germany and Switzerland. This is never the case for men; the opposite situation is true in Poland: more men who have children at home are employed full-time. This echoes the findings of the National Science Foundation (2003: 14) that "women faculty are placed at a particular disadvantage by family responsibilities during child-rearing years".

Respondents' social origin plays a role in only one case: men in Switzerland whose father has no tertiary education are less often employed full-time.

4.3.4 Professional Characteristics

In most countries, a higher academic rank increases the likelihood of working full-time. In Austria, Finland, Germany and Switzerland, being a senior academic positively and strongly impacts on the probability of working full-time, both for women and men. In Norway, it only influences men's probability of working full-time, while, in Poland and the UK, it only influences women's probability of being employed full-time (in the UK, too few men work part-time to permit analysis). In Italy, the Netherlands and Portugal, no such influence is at play.

In Norway, Poland and Switzerland, male university academics are more often employed full-time than their colleagues at other higher education institutions. The opposite is true for women in Germany. Being in business and law has a negative influence on the probability of working full time for women, while being in life sciences and medicine or physics and engineering positively influences the probability of men academics to be employed full-time. Finally, disciplines have a strong influence for both men and women in Austria and Switzerland.

Table 4.6 Factors influencing full-time employment by gender[a] (logistic regression, odds ratios and statistical significance)

	2010									
	AT		CH		IE		NL		PL	
	M	F	M	F	M+	F	M	F	M	F
Age	1.01	1.07***	1.02	1.02		1.00	1.00	1.01	1.03	1.06**
Marital status (single)	1.07	1.06	0.85	1.43		1.92	0.84	2.00	1.75	1.06
Children at home (no)	0.84	0.32***	1.08	0.29***		1.03	1.26	0.38**	2.52*	1.59
Father tertiary education (no)	1.05	1.19	0.62**	1.10		0.60	1.29	0.94	1.53	1.45
Academic rank (junior)	7.76***	7.58***	3.07***	5.27***		3.62	1.32	1.47	0.53	0.24**
University/other HEI (other)[b]			1.66**	1.19		0.59	1.41	2.83**	3.15**	0.23
Business and law+++	1.53	4.45***	1.33	2.18*		1.73	2.47	0.42	0.81	++
Life sciences and med.+++	3.87***	4.07***	1.82**	2.20**		1.23	2.16	1.49	0.58	++
Physics and eng.+++	2.73***	4.52***	2.69***	3.63***		0.50	2.62	0.39*	1.55	++
Constant	0.64	0.07***	0.46	0.22*		10.48*	1.03	0.40	3.68	10.35*
Pseudo R2 (Nagelkerke)	0.21	0.29	0.13	0.18		0.10	0.07	0.20	0.09	0.15

	2007/2008											
	DE		FI		IT		NO		PT		UK	
	M	F	M	F	M	F	M	F	M	F	M+	F
Age	1.03	1.08***	0.99	1.03*	67.00	1.02	0.96*	1.01	0.96**	1.07		0.96**
Marital status	0.42**	0.41*	0.52*	1.18	0.56	1.08	0.68	1.43	2.47*	0.10**		1.59
Children at home	1.32	0.24***	1.15	0.68	0.67	2.02	2.19	0.72	8.55***	0.10**		0.38***
Father tert. educ.	1.04	0.77	0.84	1.29	1.25	2.89	2.00	0.81	1.61	9.56**		1.32
Academic rank	9.21***	21.4**	2.61**	3.30*	1.29	0.97	3.29*	2.14	8.76**	.		5.21***
Univ./other (other)[b]	1.76	0.05*	0.92	0.63			4.29*	0.20	0.44*	0.24*		2.24
Business and law	2.02	0.29*	0.92	2.34	0.21*	0.13*	0.98	++	0.45	0.50		2.78
Life sc. and med.	4.17***	1.74	0.83	1.21	2.09	0.91	0.83	++	0.20**	0.27		2.52**
Physics and eng.	3.72***	1.64	0.61	1.11	0.72	0.85	2.22	++	0.85	18.08		1.54

(continued)

Table 4.6 (continued)

	2007/2008											
	DE		FI		IT		NO		PT		UK	
	M	F	M	F	M	F	M	F	M	F	M[+]	F
Constant	0.24	1.83	16.62***	1.04	242.05	12.42	6.04	[++]	17.96**	8.38		4.00
Pseudo R2	0.20	0.33	0.57	0.11	0.08	0.12	0.13	24.02	0.31	0.37		0.20

*$p<.05$; **$p<.01$; ***$p<.001$

[a]No data available for Croatia

[b]No data available for other HEI in Austria and Italy

[+]Insufficient number of cases for part-time work

[++]Insufficient number of cases in one or more disciplines

[+++]In reference to humanities and social sciences

4.4 Contractual Employment Conditions: Permanent Employment

4.4.1 Fewer Women Permanently Employed

Amongst the academics surveyed in the 12 countries, 45% were permanently employed at the time of the survey. This is the case for about one quarter to one-third in six countries (Germany, Portugal, Austria, Poland, Switzerland and Finland) and for about half in Norway. In the UK, Ireland and the Netherlands, permanently employed academics represent between 69 and 78%.

Women are less often permanently employed than men in almost all countries. The gap is over 10% in Norway, Austria, Germany, the UK and Ireland, and less than 10% in the other countries. It is only in Portugal that women are slightly more often permanently employed than men.

In most countries, almost all senior academics are employed permanently and gender differences are low in this respect. Permanent employment is less frequent for junior academics, and the proportion of permanently employed women is about 10% per cent lower than amongst men. Some exceptions at universities are worth noting, as Table 4.7 shows. The differences are small for both seniors and juniors in Germany and the UK, and they are substantial for both seniors and juniors in the Netherlands. In Portugal, both senior and junior women are slightly more often permanently employed than men.

At other institutions, the situation is similar to that at universities. In Portugal, however, women are strikingly more often permanently employed than men. It was already argued above that academic careers seemed to be less attractive for men in Portugal than in the other European countries in this survey. Here, other higher education institutions lack prestige.

Table 4.8 indexes countries according to their gender gap. The result is slightly different from that of ranks of full-time employment: Austria has the highest gender gap, followed by the Netherlands and Switzerland. The UK is closer to the middle with Poland and Ireland. Portugal is clearly the country with the least inequality.

Table 4.7 Permanent employment by institutional type, status and gender[a] (percentage)

		2010					2007/2008					
		AT	CH	IE	NL	PL	DE	FI	NO	PT	UK	Mean
Seniors at universities	Male	77	69	94	86	51	92	57	96	81	96	80
	Female	62	57	90	77	45	89	49	90	85	94	74
Juniors at universities	Male	24	13	63	58	17	7	19	18	16	59	29
	Female	14	4	60	38	14		16	19	18	50	26
Seniors at other HEIs	Male		76	92	89	39	90	83	90	63		78
	Female		75		87	32	94	74		88		75
Juniors at other HEIs	Male		62	77	88	25		63		12	79	58
	Female		60	62	77	18		67		15	88	55

Question A11: What is the duration of your current employment contract at your higher education institution or research institute? Permanently employed (tenured)

[a]No data available for Croatia and Italy

Table 4.8 Country[a] index: gender gap of permanent employment at universities

	Seniors	Juniors	Score	Index
Austria	1	2	3	1
Netherlands	3	1	4	2
Switzerland	2	2	4	2
Finland	4	5	9	4
Poland	5	5	10	5
UK	8	2	10	5
Ireland	6	5	11	7
Norway	5	8	13	8
Portugal	9	9	18	9
Germany	7	NA	NA	NA

NA: Insufficient number of cases
[a]No data available for Croatia and Italy

4.4.2 Impact of Being a Woman

For full-time employment, we first used logistic regressions in two steps to identify in which countries gender had a significant impact on full permanent employment.[3] The first model includes only gender, whereas the second adds the control variables for age, marital status, having children at home, education of father, type of institution and discipline.

In all countries except Portugal, gender alone is significant in the first model. However, the explicative power of the models is very low. It is the highest in Austria and Germany, whereas for countries such as Finland, Poland and Portugal it is nonexistent.

After controlling for the aforementioned variables, gender remains (or becomes, in the case of Portugal) significant in Ireland, Germany and Portugal ($p < .01$), as well as in Austria, Finland and Norway ($p < .05$). In Portugal, as was the case for full-time employment, the effect of gender is the opposite to other countries.

4.4.3 Weight of Gender for Permanent Employment

Logistic regressions were then used to improve our understanding of gender differences regarding permanent employment (see Table 4.9). The models have a very strong explanatory power: 0.50 or more in Austria, Switzerland, Germany, Finland and Norway. This is clearly due to the strong effect of age and status. For instance, in Norway, for each 5 years added to age, likelihood of permanent employment doubles. Another very significant variable is the institutional types, particularly in Switzerland, the Netherlands, Germany, Finland, Norway and the UK: temporary contracts are more frequent at other higher education institutions.

[3] Detailed results available on request.

Table 4.9 Factors influencing permanent employment by gender[a] (logistic regression, odds ratios and statistical significance)

	2010									
	AT		CH		IE		NL		PL	
	M	F	M	F	M	F	M	F	M	F
Age	1.15***	1.19***	1.11***	1.14***	1.03*	1.07***	1.11***	1.15***	1.11***	1.13***
Marital status (single)	0.71	0.47	0.93	0.46*	0.50	1.00	1.03	0.70	1.25	0.76
Children at home (no)	1.39	0.77	1.43	0.70	2.48**	1.89*	2.61**	1.02	1.03	1.14
Father tertiary education (no)	0.98	0.77	1.04	0.96	1.16	0.40**	1.09	0.96	1.28*	1.21
University/other (other)[b]			4.12***	18.28***	0.94	0.97	2.39**	3.78**	0.88	0.87
Business and law (SHS)	2.17*	2.56*	1.70	1.74	0.69	1.66	0.69	1.40	0.65	0.93
Life sciences and med. (SHS)	1.56	0.82	0.96	2.32*	0.77	0.99	0.59	0.51	0.94	1.61**
Physics and eng. (SHS)	1.11	1.16	0.88	1.78	0.92	0.94	0.50	0.68	0.84	1.19
Constant	0.00***	0.00***	0.00***	0.00***	0.65	0.12**	0.03***	0.01***	0.00***	0.00***
Pseudo R2 (Nagelkerke)	0.46	0.43	0.44	0.57	0.15	0.18	0.28	0.41	0.35	0.32
	2007/2008									
	DE		FI		NO		PT		UK	
	M	F	M	F	M	F	M	F	M	F
Age	1.17***	1.13***	1.15***	1.15***	1.22***	1.21***	1.13***	1.22***	1.08***	1.07***
Marital status (single)	0.29*	1.67	0.47*	0.91	0.70	0.90	0.96	0.26**	1.13	0.92
Children at home (no)	1.85*	1.81	1.19	1.70	1.24	0.89	1.51	1.22	3.50***	2.32**
Father tertiary education (no)	1.15	1.91	0.64	1.21	0.85	0.86	1.07	1.65	2.16**	1.15
University/other (other)[b]	2.76**	16.54***	3.87***	3.15***	2.16	5.38*	0.37***	0.87	1.09	5.05*
Business and law (SHS)	2.78*	9.00	0.67	1.09	2.45	2.33	0.61	0.25*	0.51	2.16
Life sciences and med. (SHS)	0.44*	1.03	0.82	0.78	0.76	0.67	1.78	1.04	0.26***	1.12
Physics and eng. (SHS)	1.09	0.66	0.83	0.69	1.67	0.80	1.55	1.36	0.51*	1.74
Constant	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.11***	0.04***
Pseudo R2 (Nagelkerke)	0.58	0.42	0.50	0.50	0.62	0.57	0.35	0.48	0.32	0.24

SHS Social and human sciences

*$p<.05$; **$p<.01$; ***$p<.001$

[a]No data available for Croatia and Italy

[b]No data available for other HEI in Austria

4.4.4 Individual Variables

As already discussed, age plays a major role. In addition, being married has a negative influence on the probability of being permanently employed in some countries. This is the case for Finnish and German men as well as for Portuguese and Swiss women. Conversely, having children at home positively influences the probability of being permanently employed in the case of Dutch and German men, as well as for both women and men in Ireland and the UK. Finally, having a father with tertiary education positively influences the probability of being permanently employed for Polish and British men, and, strangely, has a negative influence in the case of Irish women.

4.4.5 Professional Variables

Being employed in the university sector influences positively the probability of being permanently employed in various countries: it is the case for all academics in Finland, Germany, the Netherlands and Switzerland, as well as for women in Norway and the UK. For Portuguese men, the relationship is the opposite. The discipline seems to have less influence on permanent employment than on full-time employment. Being in business studies and law has a positive influence for Austrian men and women and German men, and a negative influence for Portuguese women. Being in life sciences and medicine has a negative effect in the case of German and British men and a positive influence on Polish and Swiss women. In physics and engineering, we only note a negative influence as regards permanent employment in the UK.

4.5 Gender in Teaching and Research

While in the previous sections dimensions of employment were addressed, in this section we focus on gender differences in academic work. Based on the Carnegie comparative survey of the academic profession undertaken in the early 1990s, Poole et al. (1997) underlined "the gendered nature of academic work". Do the EUROAC data suggest that this is still the case more than 10 years later in the European countries? This will be analysed in this section as regards preferences for research and teaching and time spent on research, teaching and service.

4.5.1 Preference for Research and Teaching

Academics were asked whether they (a) were primarily interested in research, (b) interested both in teaching and research but lean towards research, (c) interested both in teaching and research but lean towards teaching or (d) primarily interested

Table 4.10 Interest or primary interest in research by institutional type, status and gender[a] (percentage)

		2010						2007/2008						
		AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	Male	83	78	65	79	79	56	74	77	76	78	58	72	73
	Female	80	82	63	75	71	47	77	79	78	85	73	67	73
Juniors at universities	Male	73	79	63	69	78	69	71	82	78	87	47	75	73
	Female	75	79	52	53	80	67	72	79	71	80	56	62	69
Seniors at other HEIs	Male		45			50	44	20	30		72			44
	Female					57	32		48					46
Juniors at other HEIs	Male		60		20	23	67	41	18		92	50		46
	Female		46		18	14	41		11		85	37		40

Question B2: Regarding your preferences, do your interests lie primarily in teaching or in research?

Table 4.11 Interest or primary interest in research by discipline and gender (percentage)

		2010						2007/2008						
		AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Hum. & Soc. Sc.	Male	69	59	58	62	55	59	47	62	82	84	39	63	62
	Female	69	61	62	47	48	52	60	53	72	76	47	60	59
Business & law	Male	82	70		63	40	56	46	66	81	75	46	54	62
	Female	78	61		54	38	52	65	61	59		27	70	57
Life sc. & med.	Male	77	74	64	64	53	73	72	84	67	90	54	78	71
	Female	91	78	53	53	58	64	72	74	81	88	66	66	70
Phys. & eng.	Male	82	82	67	57	70	58	70	66	80	80	52	80	70
	Female	83	75	42	40	46	51	80	73	76	83	46	65	63

Question: as in Table 4.10

in teaching. In most countries, as Table 4.10 shows, more than two-thirds of university academics are primarily interested in or lean towards research, with smaller shares only in Croatia, Poland and Portugal. Except for Norway and the United Kingdom, the respective proportion is below half amongst academics at other higher education institutions.

On average across countries, men and women in senior positions at both types of higher education institutions are equally interested in research. However, there are substantial differences by country: Portuguese and Norwegian women university professors are clearly more often interested in research than men, while men are clearly more interested in research in the Netherlands and Poland.

Across institutional types and academic status, we note that men are more strongly oriented towards research than women in three disciplinary groups: physics and engineering (70% vs. 63%), business studies and law (62% vs. 57%) and humanities and social sciences (62% vs. 59%). In life sciences and medicine (71 and 70%), the respective proportions are more or less the same (Table 4.11).

4.5.2 *Distribution of Work Time*

It is widely assumed that women spend more time on teaching and related activities than on research. Prior research also suggests that women tend to spend a greater amount of time teaching and fulfilling administrative tasks than men (see, e.g. Davis and Astin 1990; Olsen et al. 1995). Therefore, the time spent on these various functions is of interest in the analysis of the EUROAC results.

As Table 4.12 suggests, the weekly hours spent *on teaching and teaching-related activities* are, on average, more or less the same for men and women. Surprisingly, seniors at universities spend almost the same number of hours on the teaching function (18 h) as academics at other higher education institutions (19 and 18 h). Junior university staff report fewer hours, while there are striking differences in some countries in this respect. The number of hours devoted to the area of teaching is similar in half the countries surveyed: Croatia, Ireland, the Netherlands, Poland, Italy and Portugal.

Women university professors spend on average 2 h more in the area of teaching than men; a gender difference is worth noting for Finland, Switzerland, Poland and Italy, as well as for Croatia, Germany and Poland. In contrast, men professors spend more time in the area of teaching across countries. This holds true for the United Kingdom, the Netherlands and Switzerland, while the opposite is true for Ireland and Poland.

The greatest gender differences are observed in business and law, with women teaching 5 h less on average in Germany, the Netherlands and the UK, and in physics in Norway (each 5 h less), the Netherlands (4 h less) and the UK (3 h less). In contrast, women teach more hours than men in life sciences in Italy and the UK (4 h more each) and in Finland and Poland (3 h more each); the same holds true in physics in Poland (4 h more) and in humanities and social sciences in Croatia and Italy (3 h more each).

Table 4.12 Weekly hours spent on teaching and related activities by type of higher education institution, status and gender (arithmetic mean)

		2010						2007/2008						
		AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	Male	14	15	18	16	18	17	18	18	17	18	16	18	17
	Female	14	19	21	16	19	21	21	24	21	18	19	18	19
Juniors at universities	Male	11	8	17	17	20	18	10	11	17	7	19	13	14
	Female	11	7	19	19	20	20	10	13	19	7	21	16	15
Seniors at other HEIs	Male		18		18	19	16	27	20		17	18		20
	Female		14		24	14	22	26	19		15	17		18
Juniors at other HEIs	Male		16		26	26	16	11	24		9	21		18
	Female		15		26	21	21		28		4	21		18

Question B1: Considering all your professional work within your current main employment, how many hours do you spend in a typical week on each of the following activities? Hours per week spent on teaching (preparation of instructional materials and lesson plans, classroom instruction, advising students, reading and evaluating student work)

Table 4.13 Weekly hours spent for research and related activities by type of higher education institution, status and gender (arithmetic mean)

		2010						2007/2008						
		AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	Male	16	17	15	16	15	15	17	14	18	13	14	14	15
	Female	16	19	16	13	12	16	18	13	17	11	11	10	14
Juniors at universities	Male	17	25	14	16	14	16	20	22	17	17	13	18	17
	Female	16	24	14	13	14	15	17	23	18	16	14	12	16
Seniors at other HEIs	Male		10		12	9	13	8	7		13	13		11
	Female		9		9	10	14	8	7		10	8		9
Juniors at other HEIs	Male		12		7	4	14	7	6		9	10		10
	Female		9		7	2	13		4		16	10		11

Question B1: Considering all your professional work within your current main employment, how many hours do you spend in a typical week on each of the following activities? Hours per week spent on research (reading literature, writing, conducting experiments, fieldwork)

Table 4.13 suggests, as one might expect, that university academics spend much more time on *research* than academics at other higher education institutions. At both types of institutions, junior staff devote somewhat more time to research than senior staff. Moreover, we note that national differences in spending time on research are more pronounced than in spending time on teaching and related activities.

Altogether, gender differences in time spent on research are very small. However, women at universities spend less time on research in some countries: both juniors and seniors in Ireland and the United Kingdom, only seniors in Portugal and only juniors in Germany. Amongst seniors at other higher education institutions, women spend less time on research in Portugal, Ireland and Norway. Female juniors at universities spend more time on research in Norway and the United Kingdom.

The number of weekly hours spent on *administration* varies substantially by country: between 3 h in Germany and 9 h in Ireland and the United Kingdom. The results must be taken with caution because there is enormous interindividual diversity (leading to a high standard deviation). Differences between men and women are relatively small.

Altogether, the findings of this section suggest that gender differences in the time spent on teaching, research and administration are smaller than previous literature has suggested. We must bear in mind, though, that the available data present an extremely varied picture for the individual countries, for the status categories and the types of higher education institutions with respect to gender differences.

Finally, this section addresses the involvement of academics in scientific committees, boards, etc. in the current academic year. As Table 4.14 shows, there are substantial differences by status, as one might expect: more than half the university professors and about half the senior academics at other higher education institutions, but only about a third of junior academics at other higher education institutions and only about one quarter of junior academics are active in these domains. In these categories, we also note substantial differences by country: for example, regarding seniors at universities, involvement ranges from 28% in Poland to 90% in Switzerland, while for juniors at universities, it ranges from 7% in Germany to 42% in Ireland.

Table 4.14 Participation in scientific committees by type of institution, status and gender (percentage)

		2010						2007/2008						
		AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	Male	66	90	38	78	63	32	43	56	60	57	68	41	58
	Female	64	87	50	78	53	22		47	53	68	68	42	57
Juniors at universities	Male	26	35	12	43	29	11	7	16	44	16	34	9	24
	Female	20	37	9	41	26	10	8	12	37	12	21	18	21
Seniors at other HEIs	Male		75		64	17	23	17			60	79		48
	Female		73			11						77		54
Juniors at other HEIs	Male		41		30		10	100				25		41
	Female		47		25		8					15		24

Question A13: During the current academic year, have you done any of the following? Served as a member of national/international scientific committees/boards/bodies

Table 4.15 Country index: gender gap in academic views and activities at universities

	Research preference		Teaching hours		Research hours		Participation in committees			
	Seniors	Juniors	Seniors	Juniors	Seniors	Juniors	Seniors	Juniors	Score	Index
Ireland	4	1	9	2	2	2	7	8	35	1
Poland	1	7	2	2	9	4	1	9	35	1
Netherlands	2	2	8	8	2	8	1	6	37	3
Italy	7	4	2	2	6	10	4	2	37	3
UK	3	10	9	1	1	1	9	12	46	5
Croatia	6	3	5	2	9	8	11	6	50	6
Finland	7	6	12	2	6	10	3	4	50	6
Portugal	12	12	5	2	2	10	7	1	51	8
Austria	5	10	9	8	8	4	6	3	53	9
Norway	11	4	9	8	5	4	10	4	55	9
Switzerland	10	8	2	12	12	4	5	11	64	11
Germany	9	9	5	8	9	2	NA[a]	10	NA	NA

[a]Insufficient number of cases

The involvement of women as compared to men in scientific committees varies substantially by country. Amongst university professors, women are clearly less involved in four countries (Netherlands, Poland, Finland and Italy) and slightly less involved in one (Switzerland); in contrast, a higher proportion of women is involved in Croatia and Norway. Amongst junior academics, women are clearly less involved in scientific committees in Portugal, Italy and Austria and slightly less involved in Croatia, the Netherlands, Finland and Norway; in contrast, more women amongst juniors are involved in committees in the United Kingdom. On average, across country, a gender gap does not exist amongst university professors, but a moderate gap exists amongst junior university staff, that is, at a career stage where networks represent important vehicles for entry into professional life (Baldwin 1985).

In summing up the gender gaps across the academic views and activities discussed above (see Table 4.15), we note the strongest gender gaps in disfavour of

women in Ireland and Poland and altogether an almost similar situation in the Netherlands and Italy. In contrast, women differ least from men in their academic views and activities in Switzerland.

4.6 Gender and Power

As has already been mentioned, the available literature points out that access to the academic networks is strongly influenced by gender; similar intra-institutional influence seems to vary substantially in this respect. In the framework of the EUROAC study, respondents were asked about their influence on academic policies in their institution at department, faculty and institution level. In the subsequent analysis, we focus on department level, that is, the level where the highest proportion of respondents has some influence and only refer briefly to other levels.

Summing up key findings from comparisons of means that are not detailed here, it appears that in all countries women are slightly more likely to think that they are less influential in shaping key academic policies at the department level than men. It is true amongst seniors at universities, expect in the Portuguese case (see also Table 4.15). Amongst the junior university academics, this is true in 7 of the 12 countries, whereas men and women score equally in the Netherlands, Norway and Switzerland and women consider themselves as more influential than men, except in the UK and Ireland. At other higher education institutions, women in senior positions view themselves as slightly more influential than men in three out of nine countries (Finland, Germany and Portugal); the same holds true for junior academics at these institutions in four countries (Germany, Norway, Poland and the UK).

These differences in self-perception are mainly related to the specificity of the positions that women hold in academia. When controlling for status, type of institution, discipline, age and part-time work, we find that women perceive they have less influence at the department level than men in only three countries: Italy, Poland and to a lesser extent Switzerland ($p < .05$). In addition, in the Netherlands, there is a marginally significant impact ($p < .10$).

Regarding other variables, a higher academic rank is associated with a greater feeling of influence in all countries, whereas more advanced age has a significant impact in all countries except Ireland and the Netherlands. Part-time employed academics tend to feel that they have less influence on what happens in their department, except for those in Germany, Italy, Ireland and Portugal. Academics at other higher education institutions, in contrast, feel that they have more influence than their university counterparts. This is more particularly the case in Switzerland and Germany and to a lesser extent Portugal.

Disciplinary differences are rare and no clear pattern emerges. Academics working in life sciences and medicine as well as business studies and law feel less influential in their departments in three countries than those in humanities and social sciences (Finland, Switzerland and the UK for the former and Netherlands, Portugal and Switzerland for the latter) and more influential in a single country each (Portugal for the former, Poland for the latter). In physics and engineering, women consider

Table 4.16 Factors affecting the perception of influence at the departmental level by country (ordered logistic regression[a])

	2010						2007/2008					
	AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK
Age	++	++	+				++	++	+	++	++	++
Female (male)		–				––			––			
Full-time (part-time)	++	++			+	++		++		+		++
Junior academic (senior)	––	––	––	––	––	––	––	––	––	––	––	––
Other institution (university)		++					++				+	
Business and law (SHS)		––			–	++					––	
Life sciences and medicine (SHS)		–						–			++	–
Physics and engineering (SHS)	++	––				–						

Question E2: How influential are you, personally, in helping to shape key academic policies? 1 = not at all influential to 4 = very influential

+/– $p < .05$; ++/–– $p < .001$

[a]The ordered logistic regression allows us to keep the four categories of the dependent variable and thus not lose information as we would in a normal logistic regression with a dichotomised variable. As we have an ordinal dependent variable (and not interval), an ordinary regression model would not be adequate either

themselves less influential than men in two countries (Poland and Switzerland) and more influential in one (Austria).

As a result, it appears that, in most countries, women's perception that they are less influential than men is linked to the position they occupy in the higher education system. While in Italy, Poland, Switzerland and to some extent the Netherlands, this perception remains "everything else being equal" and can be interpreted as the expression of a broader societal context of gender inequalities (Table 4.16).

Altogether, academics perceive themselves as less influential at the faculty level than at the department level. Here again, women tend to see themselves as less influential than men, except in Ireland and the UK where the mean is quite similar. The gap is smaller if the respondents are disaggregated by status; in that case, men and women amongst senior university academics perceive their influence as equal in Switzerland, and women consider themselves more influential in Ireland and Portugal. Amongst junior university academics, little or no differences can be observed in half the countries (Austria, Germany, Ireland, Italy, Norway and Switzerland). The situation is similar at other higher education institutions. Finally, academics consider themselves even less influential at the institutional level than at the faculty level. Gender differences are similar at this level as at the other ones, with a few countries showing no significant differences.

When we created an index using the different levels, Austria stood out as having the highest difference of perception between women and men. At the other extreme are Ireland, the UK and Norway. The Netherlands, Finland, Croatia, Germany, Italy and Poland also all show relatively great differences regarding this aspect. The differences between faculty and department levels, and especially between juniors and seniors, can be quite high. In Portugal for instance, in the case of senior academics, the situation is very egalitarian compared to other countries, whereas for junior

Table 4.17 Country index: gender gap of the influence at departmental and faculty level at universities

	Department		Faculty			
	Seniors	Juniors	Seniors	Juniors	Score	Index
Austria	1	2	6	4	13	1
Netherlands	2	8	2	6	18	2
Finland	7	7	3	2	19	3
Croatia	8	1	8	3	20	4
Germany	10	4	1	7	22	5
Italy	3	5	5	10	23	6
Poland	9	6	4	5	24	7
Portugal	12	3	12	1	28	8
Switzerland	5	9	10	8	32	9
Ireland	4	11	11	11	37	10
UK	6	12	7	12	37	11
Norway	11	10	9	9	39	12

Question: as in Table 4.16

academics, the situation is very different. Especially for female senior academics, the number of cases is sometimes relatively low, so the results must be taken with precaution (Table 4.17).

4.7 Conclusion

The proportion of women amongst all academics has increased in all countries. Yet, they comprise less than half in the 12 European countries surveyed. They are less represented in senior positions, and this is most striking in countries where their share amongst academics is low. In the same vein, unequal representation across disciplines is most prominent in countries where the share of women amongst all academics is the smallest. We find substantial differences by country, with the highest differences by gender appearing in the Netherlands, Switzerland and Austria, and the lowest in Ireland, Poland and Portugal.

The study has shown that there was a gender gap according to employment conditions (full-time and permanent employment), academic work (e.g. preferences for research, time spent on research and involvement in scientific committees) and academic power within higher education institutions (see Table 4.18). However, the differences vary depending on the country and the academic status of the individuals.

Various factors seem to be at play with respect to the individual dimensions of employment, work and academic power. For example, gender gaps in employment seem to be more substantial if the share of part-time employed and short-term employed persons amongst all academics is relatively high. The overall massification of higher education could affect the time devoted by men and women to teaching and research.

Table 4.18 Country index: gender gap in composition, employment conditions, academic work and academic power at universities

	Composition[a]	Employment	Work	Governance	Score	Index
Netherlands	3	1	3	2	9	1
Austria	6	3	9	1	19	2
Finland	6	5	6	3	20	3
Poland	10	6	1	7	24	4
Switzerland	2	2	11	9	24	4
UK	11	4	5	10	30	6
Ireland	12	8	1	11	32	7
Norway	5	7	9	12	33	8
Portugal	8	9	8	8	33	8
Croatia	9	NA	6	4	NA	NA
Germany	1	NA	NA	5	NA	NA
Italy	4	NA	3	6	NA	NA

[a]The items refer to the tables above. Composition: share of women as in Table 4.3; Employment: full-time employment as in Table 4.5; Work: preferences and time use as in Table 4.15; Governance (equal to power and influence) as in Table 4.17

Interestingly enough, countries where the gender gap is the most striking regarding access to the most prestigious positions are not necessarily those where work-related activities are most gendered. Switzerland, for example, illustrates itself by being amongst the most unequal countries regarding access to academic positions, but amongst the less gendered regarding work-related activities. This tension between differences in access to the profession and differences in work-related activities must probably be understood in the light of the extent and path of the massification process in access to higher education and its corollary, the greater need for professors in teaching-related activities: one hypothesis could be that where higher education systems remain elitist, where the enlargement of the academic profession is thus limited, women benefit little from this process but, simultaneously, have been less often hired specifically for teaching-related positions. In massified higher education systems such as the UK, women are better represented in the academic profession but are more often hired for academic positions involving a larger share of teaching activities.

Can these differences between men and women be interpreted in terms of inequalities: that is, do women, everything else being equal, less often access the most desirable positions? If we take the example of access to full-time positions, after controlling for age, marital status, having children at home, father's education, academic rank, discipline and internationalisation of career, gender appears highly significant in predicting employment status in Finland, Germany, the Netherlands, Portugal, Switzerland and the UK ($p<.001$), as well as in Austria and Ireland ($p<.05$). Also, the negative impact of being a woman on access to permanent employment prevails in most countries except Austria, Poland and Switzerland. This suggests the permanence of some barriers to women's careers.

These differences in academic positions can lead to differences in academic activities. Regarding time spent on teaching, research and administration, however, no clear global trend can be identified regarding gender specificities. The status, higher education sector and discipline impact on gender differences differently depending on the country.

But when we look at the probability of being involved in national/international scientific committees, boards or bodies for instance (except in the UK context, where no gender difference are observed), *women are always less likely to be involved*. These differences in positions and activities are accompanied by a different self-perception of their power. In all countries, women are slightly more likely to think that they are less influential in shaping key academic policies at the department level than men. But when controlling for status, type of institution, discipline, age and part-time work, we find that women perceive that they have less influence at the department level than men in only three countries: Italy, Poland and to a lesser extent Switzerland ($p < .05$). In addition, in the Netherlands, there is a marginally significant impact ($p < .10$).

Thus, in most countries, women's perception that they are less influential than men is to a large extent linked to the position they occupy in the higher education system rather than to gender-specific issues. This can be interpreted as the consequence of a broader societal context of gender inequalities that would weigh on women's self-perception.

Gender differences and inequalities have been shown to decrease in academia and to be intertwined. Our comparative research shows that developments in individual countries vary substantially in this respect, probably according to the degree of prestige of an academic position in the different societies. But differences and inequalities do still remain. This calls for national and institutional in-depth research to identify "academic organising and its gender effects" (Benschop and Brouns 2003).

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Chapter 5
The Teaching Function of the Academic Profession

Ester Ava Höhle and Ulrich Teichler

5.1 Introduction

Teaching and research are the key tasks of the academic profession. The medieval universities in Europe, widely viewed as the predecessors of the modern universities, used to serve teaching primarily or exclusively. With the birth of the neo-humanistic university and the expansion of higher education, the role of the university changed and increasingly comprised both teaching and research. The close nexus between teaching and research is said to result from Wilhelm von Humboldt's concept of the University in Berlin formulated in the early nineteenth century whereby the highest quality in teaching shall be nurtured by the symbiosis with the most innovative research. This concept influenced most top higher education institutions up to the present, even though it was never viewed as being easily realised (Schaeper 1997), and the balance of these two core functions of the modern university remained a challenge both for the institutions and the individual scholars.

For various reasons, however, experts claim that the history of the modern university was primarily shaped by the teaching function of higher education. In talking about the expansion of higher education after WWII, we primarily consider the worldwide growth in the number of students from more than 10 million to over 100 million in recent years. The terminology of international organisations shifted from university education to higher education and eventually to tertiary education, thereby taking into consideration that research did not spread as widely in its link to teaching as teaching spread. Moreover, concern was widespread that the quality of teach-

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ing would remain deplorable if academics who put stronger emphasis on research were not pushed to take teaching more seriously, if they were not systematically trained for their teaching functions and if curricula and other study provisions were not highly organised. The concepts of teaching were under continuous pressure to strike a balance between a research-influenced reflection of academic concepts and laying the foundation for professional practice. Moreover, higher education institutions in most countries are viewed as having more or less the monopoly for systematic teaching and related degree-granting, while substantial proportions of research are undertaken in other institutions – independent research institutions, state institutions linked to practical functions and research and development in industry. Last but not least, the importance of academic teaching was emphasised as the training ground for young researchers and therefore as the basis of the quality of research (Arimoto 2010; see also various contributions in Locke and Teichler 2007).

Hence, the EUROAC survey had to address the relationship between these core functions of higher education. This chapter, which primarily addresses teaching, discusses the balance between teaching and research in two respects: the academics' preferences for teaching and research and the work time allotted per week to the various functions. In turning to teaching, special attention will be given to the time spent on teaching during the periods of the year when classes are in session. In addition, we will examine the conditions for teaching with respect to regulatory frame, the organisational conditions and the resources provided. Moreover, the available data allow us to examine the extent to which the academics are involved in various teaching activities and their attitudes to the character of teaching and learning in higher education. Finally, a multivariate analysis will be presented which examines the factors that influence the allocation of work time to teaching.

Like other chapters of this volume, the analysis focuses on the extent to which we note common thrusts across countries or a substantial variety across Europe concerning teaching in higher education. In this framework, attention is also paid to the commonalities or differences in the views and activities of senior and junior academics. Last but not least, any analysis of the teaching function of higher education is interested in the questions of similarity or differences in the role of teaching in other higher education institutions with a prime emphasis on teaching and in universities which emphasise both teaching and research (see also Jacob and Teichler 2011).

5.2 Weekly Work Hours

Academics in most countries are relatively free to arrange the time and location of their work. They could be expected to work as much as other persons, that is, somewhat less than 40 h in many European countries, if they are employed full time. As will be discussed below, most academics must comply to rules, set at national, institutional or departmental level, or even individual contracts, as regards the teaching load and the number of "contact hours" in classrooms. However, it is mostly up

to their own discretion whether they spend 1, 2, even 3 or more hours per teaching hour on teaching-related activities such as preparation, assessment and guidance. To have an overview of how much time academics spend for what activities, they were asked to estimate the average number of hours for teaching, research, service, administration and other academic activities both for the periods when classes are in session and when classes are not in session. In the questionnaire, only these major functions were addressed without further specification. Therefore, it is not possible to establish how much of the teaching time is allocated directly to teaching or to teaching-related activities such as curriculum development, preparation of classes, assessment and guidance.

As academics are often very devoted to their work and as time is a flexible resource for enhancing their academic work, one can expect that they work more hours than usually required. Moreover, self-estimates of work time might be inflated when schedules are flexible. According to the international survey of the academic profession undertaken in the 1990s (Altbach 1996), university professors of the four participating European countries reported a weekly work schedule of 51 h (52 h for full-time employment), junior staff at universities 45 h (50 h) and academics at other higher education institutions 40 h (44 h).

The respondents were asked in the questionnaire to state the weekly working hours separately for the period when classes are in session and for the period when classes are not in session. This distinction was made because a single question to academics as regards the work time is likely to elicit responses that only reflect the period when classes are in session. We estimate the annual working time of academics by assuming, first, that the period when classes are in session covers 60% of the annual work time and the period when classes are not in session 40% (see Teichler 2010a). In analysing the overall working time, we refer to full-time employed academics only because they tend to be viewed as the prototypical academics at higher education institutions who are in charge of all the functions, whereas part-timers might have a restricted role (e.g. little responsibility for administration, no balance between teaching and research) (see Enders and de Weert 2004).

According to estimates on the basis of their self-reports, we estimate, as presented in Table 5.1, that full-time university professors of the 12 European countries work 47 h per week, that is, about one-fifth more than the typical work schedule of full-time employed persons. The figures vary substantially by country: 52 h are reported each by university professors in Germany and Switzerland and 50 h in Ireland. In most other countries, university professors report 45 and 49 h, while the lowest number of weekly hours is stated by university professors in Norway (39 h) and Portugal (41 h).

Junior staff at universities employed full-time works 42 h on average. The average figures vary less by country than in the case of university professors. Those from Ireland report 47 h. In almost all the other countries, they report between 41 and 45 h. There is a single exception of junior staff in Norway reporting 28 h, but this includes doctoral candidates who are expected to work less, even though it is not officially a part-time job.

Table 5.1 Annual weekly work hours spent on various academic functions (only full-time academics)

	2010						2007/2008					
	AT	CH	HR[a]	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Teaching	11	12	15	12	15	14	14	15	14	13	13	15
Research	19	21	18	19	17	19	20	17	21	15	16	17
Service	5	5	3	3	4	3	7	3	4	2	2	2
Administration	9	9	7	11	5	9	7	8	5	7	6	11
Other activities	4	5	4	5	3	3	5	4	2	3	3	4
Total hours	48	52	47	50	43	48	52	47	46	39	41	48
Juniors at universities												
Teaching	9	5	14	14	15	15	9	11	14	5	16	11
Research	21	28	18	18	18	20	21	23	21	19	18	19
Service	5	4	2	2	3	2	7	2	4	1	1	1
Administration	6	4	5	9	4	4	3	3	3	2	4	10
Other activities	3	3	3	4	3	3	2	2	2	2	2	4
Total hours	44	45	42	47	43	44	42	41	44	28	41	45
Seniors at other HEIs												
Teaching		14		15	16	18	21	14		12	14	
Research		13		12	14	12	11	8		13	14	
Service		5		2	4	2	3	2		3	2	
Administration		11		11	5	3	5	11		4	6	
Other activities		5		4	4	3	2	2		2	3	
Total hours		48		44	42	38	42	38		34	38	
Juniors at other HEIs												
Teaching		14		20	13	22	9	20		4	17	
Research		14		10	15	4	8	6		17	14	
Service		3		2	5	2	4	2		1	1	
Administration		7		6	4	4	6	5		3	5	
Other activities		4		3	3	4	4	1		2	2	
Total hours		42		40	40	37	30	34		29	39	

Question B1: Considering all your professional work, how many hours do you spend in a typical week on each of the following activities?

[a]Croatia: data for all respondents (including part-time staff not reported separately)

Senior academics at other higher education institutions of the countries surveyed who are employed full-time work on average 41 h per week. Only full-time senior academics at Swiss "Fachhochschulen" (universities of applied sciences) report substantially longer work time than usual schedules, that is, 48 h on average. Finally, junior staff at other institutions who are employed full-time spends 38 h on average on their job – the mean not exceeding 42 h in any country.

5.3 Distribution of Time on Various Academic Functions

While Table 5.1 shows the number of hours spent by academics on the academic core functions, Table 5.2 presents the proportion of time spent. University professors employed full time in the 12 European countries spend 14 h per week on their teaching activities during the whole year; this corresponds to 30% of their overall work time. As no detailed information was collected on the teaching load, we can only estimate on the basis of general information about teaching loads in the respective countries that university professors in the various countries spend on average between 2 and 3 h on teaching-related activities per teaching hour.

Table 5.2 Percentage of annual weekly work time spent on various academic functions (only full-time academics)

	2010						2007/2008					
	AT	CH	HR[a]	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Teaching	23	23	32	24	36	30	28	33	31	33	34	31
Research	40	41	39	38	38	40	38	37	45	37	38	35
Service	11	9	6	6	8	5	11	5	8	5	6	4
Administration	18	17	14	22	11	18	14	17	11	18	15	22
Other activities	8	9	9	10	7	7	9	7	5	7	8	8
Total percentage	100	100	100	100	100	100	100	100	100	100	100	100
Juniors at universities												
Teaching	20	12	34	31	37	35	21	27	32	16	41	25
Research	47	63	43	39	40	45	51	56	48	69	42	43
Service	11	9	4	4	7	3	16	5	8	2	3	2
Administration	14	9	12	19	9	9	7	8	7	8	9	22
Other activities	7	7	7	8	7	7	5	5	5	6	5	8
Total percentage	100	100	100	100	100	100	100	100	100	100	100	100
Seniors at other HEIs												
Teaching		28		35	41	49	52	41		33	38	
Research		27		26	31	29	24	20		39	33	
Service		10		5	8	7	7	5		8	4	
Administration		25		25	12	8	12	27		13	16	
Other activities		10		9	9	6	5	6		7	9	
Total percentage		100		100	100	100	100	100		100	100	
Juniors at other HEIs												
Teaching		32		53	36	61	28	60		19	45	
Research		33		22	36	10	24	17		53	35	
Service		8		4	11	6	16	7		6	2	
Administration		17		14	9	11	20	12		11	11	
Other activities		10		7	8	11	12	4		11	6	
Total percentage		100		100	100	100	100	100		100	100	

Question B1: as in Table 5.1

[a]Croatia: data for all respondents (including part-time staff not reported separately)

Clearly, more time is devoted to research than to teaching: 18 h and 38% of their work time. University professors on average spend more time on teaching than on research when classes are in session, but the time spent on research when classes are not in session clearly outweighs this. Finally, they spend almost as much time during the year on other activities: 4 h and 7% on service, 8 h and 17% on administration and 4 h and 8% on other – unspecified – tasks.

The amount of time spent on teaching activities ranges from 23% in Austria and Switzerland to 36% in Poland, while the time spent on research varies between 35% in the United Kingdom and 45% in Italy. In all the European countries that were surveyed, university professors spend more time on research than on teaching during the year. The ratio of time spent on research to time spent on teaching ranges from 1.7 in Switzerland and Austria to 1.2 in Portugal, Finland, Norway and the United Kingdom and only 1.1 in Poland. The amount of time spent on services is exceptionally high in Austria and Germany (11% each), while it is around 5% in about half the countries. Time spent on administration ranges from 11% in Italy and Poland to 22% in Ireland and the United Kingdom.

Junior staff spends l2 h a week on teaching activities on average during the year; this corresponds to 28%, that is slightly less than the respective amount in the case of university professors. They spend 20 h on average on research, that is 49% of their work time. This is higher than in the case of university professors. In contrast, juniors at universities spend less time on services, administration and other functions.

Juniors at universities show greater variety in their functions by country, ranging in teaching activities from 12% in Switzerland to 41% in Portugal and in research from about 40% in Ireland and Poland to 69% in Norway. In Ireland, Portugal and the Netherlands, juniors at universities spend much more time on teaching activities than seniors at universities. In Norway and Switzerland, in contrast, they spend only about half the time on teaching activities as the seniors. In Switzerland, Germany and Finland, junior staff also spends more time on research than professors at universities. The amount of time junior academics spend on service, administration and other academic activities is less than university professors.

One could have expected that the number of hours spent on teaching activities by professors at other higher education institutions was substantially higher than the hours spent by university professors. However, the average of 16 h is only 2 h more than in the case of university professors. As the teaching load seems to differ more strongly, we conclude that professors at other institutions spend less time on teaching-related activities (preparation, assessment, guidance, etc.) per teaching hour. The difference by country in the proportion of time spent on teaching is more substantial, that is, 40% versus 30%; this reflect a lower number of working hours on the part of the professors at other higher education institutions. As regards research, we note an average of 12 h and 27%. On the one hand, professors at other higher education institutions in Portugal, the Netherlands and Germany spend more than twice as much time on teaching than on research. On the other, time spent on research is about equal to time spent on teaching in Austria and even higher in Italy.

Juniors at other higher education institutions teach almost as much (15 h) as seniors in their institutions. In Finland, Ireland and the Netherlands juniors at these institutions teach considerably more than seniors; the opposite is true in Germany, Norway and the United Kingdom. In the latter countries, junior staff at other institutions more frequently has other responsibilities, for example, research, services and administration.

5.4 Teaching Time When Classes Are in Session

In the previous section, information was provided on how (full-time) academics distributed their time according to academic functions. It is interesting to know how much time for teaching is actually available in those periods of the year when teaching actually takes place. Therefore, the subsequent information refers to the work time of all academics (including part-timers) when classes are in session.

As Table 5.3 shows, university professors in European countries spend on average 18 h on teaching and related activities when classes are in session. The country means vary only moderately from 16 to 20 h, with the exception of Austria where university professors report only 14 h a week.

Junior staff at universities report on average 15 h on teaching when classes are in session. In 7 of the 12 countries, they seem to be as much involved in teaching as seniors, but in five countries, they clearly have more limited teaching activities: notably Norway and Switzerland but also Germany, Austria and Finland.

Senior academics at other higher education institutions spend more time on teaching and teaching-related activities (20 h on average) than senior academics at universities. One could have expected an even more substantial difference; however,

Table 5.3 Time spent on teaching activities when classes are in session (weekly hours and percentage of all academic work, all respondents)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Weekly hours												
Seniors at university	14	16	19	16	19	17	19	20	18	18	17	18
Juniors at university	11	7	18	18	19	20	10	12	18	7	20	15
Seniors at other HEIs		17		20	19	18	27	20		16	18	
Juniors at other HEIs		15		26	19	23	11	26		6	21	
Percentage of total												
Seniors at university	29	30	40	32	43	41	35	42	40	42	44	40
Juniors at university	29	19	44	41	45	49	27	28	42	26	52	36
Seniors at other HEIs		38		41	47	48	63	49		42	44	
Juniors at other HEIs		40		62	46	69	40	66		25	57	

Question B1: as in Table 5.1

the difference is only substantial in the case in Germany, where university professors spend 19 h a week on teaching and professors of other higher education institutions (Fachhochschulen) 27 h when classes are in session.

Junior academics at other higher education institutions spend on average slightly less time on teaching when classes are in session than senior academics: 18 h a week on average of all the European countries surveyed. However, we note more striking differences here than in the other categories: on the one hand, junior staff at Finnish AMK and Irish other third-level institutions spend more time on teaching (26 h each when classes are in session) than their seniors (20 h each). On the other, the teaching function of junior staff at these institutions is limited in Norway (8 h), Germany (12 h) and the United Kingdom (12 h).

Table 5.4 illustrates how involvement in teaching differs when classes are in session. Forty-one percent of the university professors on average of the 12 countries report that they spend between three-tenths and half of their working time on teaching activities. Thirty-one percent spend between one-tenth and three-tenths. Only very few spend a marginal proportion on teaching (6%). In contrast, 22% spend more than half of their time on teaching activities when classes are in session, among them few in Austria (6%), Ireland (10%) and Switzerland (11%).

Involvement in teaching, as already mentioned above, is more dispersed among junior staff at universities. On the one hand, three times as many junior staff (19% on average of the 12 European countries) spend only up to one-tenth of their time on teaching activities when classes are in session. These proportions are highest in Switzerland (44%), Finland (43%) and Norway (35%). On the other, fewer juniors at university spend more than half the time on teaching activities (26%) than their seniors. This proportion is highest in Portugal (48%) and the Netherlands (42%). Also, junior academics at universities in Poland and Croatia are more strongly involved in teaching activities than senior academics.

At other higher education institutions, about twice as many senior academics (41%) spend more than half their time on teaching activities when classes are in session as university professors. This is most pronounced at German Fachhochschulen (39%) where the teaching load is especially high. The previous overview on number of working hours by full-time staff has shown a smaller difference between university professors and senior academics from other higher education institutions; we must bear in mind, in this context, that the share of work devoted to teaching is especially high among those employed part-time – which is more often the case among senior staff from other institutions than among senior academics at universities.

As one might anticipate from the previous information about the overall allocation of work time for various functions, the time allotted to teaching activities by junior staff at other higher education institutions varies substantially by country. The share of those spending more than half their time on teaching activities is highest among junior academics at Finnish AMK (74%), Dutch HBO and Irish other third-level institutions (73% each).

Women at universities spend more time on teaching when classes are in session than men. As Table 5.5 shows, the difference by gender is 4% for university professors and also 4% for junior staff at universities, while at other institutions no difference can be observed on average in the countries surveyed. More teaching on the part of

Table 5.4 Percentage of working hours spent on teaching and teaching-related activities when classes are in session

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Below 10%	10	11	1	5	2	7	9	5	2	6	1	8
11–30%	46	42	19	45	27	26	35	22	32	20	25	30
31–50%	38	36	62	40	40	40	40	44	43	42	45	34
51–70%	5	9	16	9	24	16	12	18	17	26	20	16
71–100%	1	2	2	1	8	11	3	10	7	7	8	13
Average	29	30	40	32	43	41	35	42	40	42	44	40
Juniors at universities												
Below 10%	23	44	3	8	2	7	28	43	3	35	4	27
11–30%	38	32	19	22	22	18	36	20	25	29	8	18
31–50%	24	17	48	44	42	33	22	12	44	16	39	24
51–70%	8	4	20	19	24	24	7	11	19	12	30	15
71–100%	7	2	10	7	11	18	7	14	9	8	18	15
Average	29	19	44	41	45	49	27	28	42	26	52	36
Seniors at other HEIs												
Below 10%		15		13	2	7	0	9		8	11	
11–30%		23		29	19	23	6	16		31	16	
31–50%		37		13	40	31	25	29		31	42	
51–70%		15		27	25	17	30	27		19	18	
71–100%		11		18	14	22	39	20		12	13	
Average		38		41	47	48	63	49		42	44	
Juniors at other HEIs												
Below 10%		22		3	6	2	24	7		35	1	
11–30%		20		6	20	8	24	5		25	5	
31–50%		24		18	38	16	24	15		25	40	
51–70%		16		33	19	20	9	22		15	30	
71–100%		19		40	16	53	21	52		0	25	
Average		40		62	46	69	40	66		25	57	

Question B1: as in Table 5.1

women is most pronounced among university professors in Finland, where they spend 11% more time than men on teaching and among university junior staff in the United Kingdom where women spend 10% more time than men when classes are in session. There are exceptions though: among university professors in Austria and Croatia, men spend slightly more time on teaching than women; Switzerland is the exception in the case of junior staff at universities.

The overall higher amount of time spent on teaching when classes are in session by women can be explained by disciplinary composition. Across the European countries examined, the amount of time devoted to teaching activities when classes are in session does not vary strikingly by discipline; however, academics at universities in humanities and social sciences spend on average about 4% more time on teaching activities when classes are in session than academics in science and engineering. In contrast, the amount of time spent on teaching by academics in humanities and

Table 5.5 Percentage of working hours spent on teaching and teaching-related activities when classes are in session, by gender

	AT		CH		HR		IE		PL		NL	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Seniors at univers.	29	28	29	35	40	39	32	33	41	45	42	43
Juniors at univers.	30	30	19	18	42	46	36	44	44	47	49	50
Seniors at oth. HEIs			40	32			37	49	43	50	49	43
Juniors at oth. HEIs			40	40			64	60	38	52	69	69

	DE		FI		IT		NO		PT		UK		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Seniors at univers.	34	38	39	50	39	46	42	44	42	49	39	42	37	41
Juniors at univers.	26	30	27	31	41	44	26	26	47	54	32	42	35	39
Seniors at oth. HEIs	62	63	51	44			41	47	43	42			47	46
Juniors at oth. HEIs	43	46	62	70			38	18	57	58			50	50

Question B1: as in Table 5.1

social sciences at other higher education institutions hardly differs on average from that of their colleagues in science and engineering.

Altogether, the average time spent on teaching when classes are in session does not vary strongly by country within the individual disciplines. For example, it ranges in the groups of humanities and social sciences in the case of university professors across all European countries between 41 and 45% (except for law where teaching activities represent only 34%) and in science and engineering between 34 and 40%.

5.5 Preferences for Teaching and Research

Since time distribution is greatly determined by the academics themselves, it is interesting to examine the preferences academics harbour regarding teaching and research. It is also worth examining whether these preferences are linked to their allocation of working time.

In the survey of the 12 European countries, the same question regarding preferences was posed as in 1992 in the Carnegie Survey. This earlier survey showed that most academics appreciated a link between teaching and research, but those at universities mostly leaned more strongly towards research, while those at other higher education institutions leaned more strongly towards teaching. Moreover, the previous survey showed that those who preferred research and those who leaned more strongly towards research reported higher weekly working hours, that is, beyond those customary for ordinary employees in other occupational areas, than those who leaned towards teaching or who preferred teaching (Altbach 1996).

Among the university professors of the 12 European countries surveyed recently, almost three-quarters (73%), as Table 5.6 shows, report that they lean towards research or have a preference for research. The respective average quota is almost identical for junior staff at universities (71%). As the teaching function plays a considerably stronger role at other higher education institutions, one could have expected that a very small proportion of academics at those institutions had a preference for research. Thus, it is surprising to note that more than 40% of academics at other higher education institutions report that they have a clear preference for or lean towards research.

There are noteworthy differences by country in this respect:

- A clear preference for teaching and a leaning towards teaching are only frequent among university professors in Poland (47%), Portugal (39%) and Croatia (35%), while in various other countries only about 20% state a similar attitude.
- Among junior staff at universities, high proportions hold true for Portugal (47%), Croatia (42%) and Ireland (40%).
- Also, among academics at other higher education institutions, preferences for teaching differ substantially by country, with the highest proportion among senior academics in Germany (77%) and Ireland (71%) and among junior academic staff in Finland (85%), the Netherlands (83%) and Ireland (81%).

Table 5.6 Preferences for teaching or research (percentage)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Primarily in teaching	1	1	2	3	13	5	5	2	2	2	3	8
Both, leaning towards teaching	17	20	33	19	34	17	20	19	22	18	36	23
Both, leaning towards research	58	59	62	65	45	55	63	61	67	60	48	48
Primarily in research	24	20	3	13	8	23	12	18	10	20	14	22
Juniors at universities												
Primarily in teaching	5	3	4	7	3	5	7	8	3	2	6	9
Both, leaning towards teaching	21	17	38	33	29	17	22	12	22	14	41	24
Both, leaning towards research	42	47	50	51	54	49	38	39	60	44	47	37
Primarily in research	33	32	8	8	14	30	33	42	15	40	6	30
Seniors at other HEIs												
Primarily in teaching		15		20	14	16	42	15		3	11	
Both, leaning towards teaching		37		51	47	33	35	49		22	43	
Both, leaning towards research		33		18	35	40	22	26		58	37	
Primarily in research		15		11	4	11	1	10		17	9	
Juniors at other HEIs												
Primarily in teaching		18		36	12	47	46	49		5	13	
Both, leaning towards teaching		28		45	34	36	17	36		8	44	
Both, leaning towards research		33		15	43	15	19	11		51	37	
Primarily in research		21		3	10	2	18	4		37	7	

Question B2: Regarding your own preferences, do your interests lie *primarily* in teaching or in research?

We must be cautious, however, in inferring major consequences of these orientations as regards a broad range of activities. An in-depth analysis of these findings has shown, for example, that 71% of the teaching-oriented university professors in Germany were involved in curriculum development, as compared to 59% of their research-oriented colleagues. The respective figure for university professors in the United Kingdom was 87% as compared to 73% (Teichler 2010b). There is an impact, but not a dramatic one.

In most countries, however, the actual share of working time spent on teaching activities when classes are in session complies with preferences. That means that those with teaching preferences teach considerably more than those with research preferences ($r=-426^{**}$). This holds true notably for Finland: Finnish university professors with a preference for teaching spend 66% of their time on teaching, while those with a preference for research spend only 32% of their time on teaching (for Finnish juniors at universities we note a wider gap: 72% versus 12%). Altogether, juniors at universities are those where preferences and time spent are most closely linked. This could be due to the fact that some of the junior staff at universities are exclusively or almost exclusively in charge of research, while others have a higher teaching load than university professors.

However, this is not the case consistently in all countries. At Italian and Swiss universities, as well as at other higher education institutions in the Netherlands and

Norway, no link is visible between time use and preferences. Similar results can be found in other cases.

5.6 Institutional Settings for Teaching

Academics are exceptional in the degree of regulation of their work tasks. They are often only clearly assigned the task of teaching a certain number of classes and are otherwise expected to serve teaching, research and related functions and activities.

In response to a corresponding question, about five-sixth of the academics surveyed stated that their institution set quantitative targets or expected a certain number of teaching hours from the academics. As the question might be misunderstood as referring to specific targets set for the respondents, we can assume that teaching loads are set for an even higher number of academics. But even if there are no general rules, one can assume that more or less all individual academics are informally expected or are formally required to teach a certain number of hours.

Other regulations and institutional expectations are addressed in Table 5.7. The academics were questioned on four issues:

- Whether funding of departments is based on the number of students and/or graduates
- Whether the quality of teaching is considered in personnel decisions
- Whether targets or regulatory expectations are set for the individual academic with regard to classroom hours, number of students in class, number of graduate students to be supervised, percentage of students passing exams and time for student consultation (in Table 5.7, the percentage of respondents is presented naming at least three of the targets as applicable)
- Whether they are encouraged to improve their instructional skills in response to teaching evaluation

Funds made available to the departments in institutions reflect *quantitative* targets, that is, the number of students and/or the number of graduates. It should be borne in mind, though, that no question was asked in the questionnaire concerning the extent to which funding varied according to student and graduate figures.

Austria is the only country where only a minority of academics at universities states that funding at departments is influenced by such quantitative targets (this question was not asked in Croatia and in Switzerland). In most countries, the student numbers play a major role in comparison to graduate numbers. Finnish universities are an exception here, where graduate figures seem to play a more important role than student numbers. In the Netherlands, Norway and at Finnish, other higher education institutions graduate numbers are almost as often named by respondents as student numbers.

Less than a quarter of the academics at universities believe that personnel decisions as regards academics (i.e. recruitment and promotion) are strongly based on the presumed *teaching quality* of the respective persons. Only the academics at

Table 5.7 Perceived institutional regulations and expectations as regards teaching (percentage*)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
a. Funding / students	27			61	52	67	50	33	55	53	57	76
b. Funding / graduates	16			33	9	58	33	74	23	57	23	30
c. Teaching quality	21			20	23	37	28	32	13	24	17	35
d. Workload target	17	2		14	79	42	26	17	21	40	31	45
e. Teaching improvement	30	49	26	55	10	49	37	16	59	42	40	52
Regulations (mean a–d)	21			34	41	51	34	39	28	43	32	46
Juniors at universities												
a. Funding / students	31			62	49	64	42	39	52	49	47	68
b. Funding / graduates	20			37	9	60	21	71	23	55	27	32
c. Teaching quality	20			15	20	28	21	21	10	26	15	28
d. Workload target	17	6		19	72	37	18	17	15	32	36	52
e. Teaching improvement	33	47	24	60	12	49	31	11	62	58	36	56
Regulations (mean a–d)	21			35	38	47	26	37	25	40	31	45
Seniors at other HEIs												
a. Funding / students				63	40	81	65	77		45	37	
b. Funding / graduates				18	8	75	41	71		45	11	
c. Teaching quality				21	32	53	51	54		39	15	
d. Workload target		4		28	77	42	40	31		27	58	
e. Teaching improvement		50		40	16	50	48	20		58	30	
Regulations (mean a–d)				33	39	63	49	58		39	30	
Juniors at other HEIs												
a. Funding / students				53	44	83	66	69		55	34	
b. Funding / graduates				16	11	65	39	61		47	17	
c. Teaching quality				17	22	34	57	34		28	19	
d. Workload target		3		27	67	47	18	37		31	40	
e. Teaching improvement		53		49	17	52	39	14		53	32	
Regulations (mean a–d)				29	36	57	45	50		40	27	

Question C4: Please indicate your views on the following…
Question E6: To what extent does your institution emphasise…
Question C3: Does your institution set quantitative load targets or regulatory expectations for individual faculty for… number of hours in the classroom
*Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree
a. Funding of departments substantially based on numbers of students
b. Funding of departments substantially based on numbers of graduates
c. Considering teaching quality when making personnel decisions
d. three or more responses to "Number of hours in the classroom"; "Number of students in your classes; "Number of graduate students for supervision"; "Percentage of students passing exams"; Time for student consultation"
e. Encouraged to improve instructional skills in response to teaching evaluations

universities in the Netherlands and the United Kingdom often state that the teaching quality is taken into consideration, while this is least often reported by academics at Italian universities.

At other higher education institutions, where teaching is clearly the core function, the picture is somewhat different. In most countries, more respondents from these institutions than from universities state that teaching quality is often considered when making personnel decisions. This is stated by more than half the professors at these institutions in Finland, the Netherlands and Germany, as well as by more than half the junior staff in Germany. Conversely, the teaching quality seems to be hardly taken into consideration at other higher education institutions in Portugal.

As already stated, the academics were asked if their institution set regulations or certain targets as regards *workload-related targets*, that is, the teaching performance of the individual person: in terms of classroom hours (teaching load), number of students in class, number of graduate students to be supervised, percentage of students passing exams and time for student consultation. The academics were asked in the questionnaire to respond affirmatively, if at least three of such targets were in place. Such individualised workload-related targets are by far most widespread in Poland and to a certain extent in the United Kingdom. In contrast, they hardly seem to play any role in Switzerland. There are differences in this respect both according to type of higher education institutions and between senior and junior academics in the individual countries, but altogether we do not observe any clear dividing lines according to institutional types and staff category in this respect.

In Table 5.7, an average score is presented in the bottom lines for the four institutional regulations and expectations. This score of institutional *Regulations* altogether varies to a lesser extent by country than the individual lines above. A similar number of such mechanisms are used in about half a dozen countries, led by the Netherlands and the United Kingdom, while they play a lesser role in Austria and Italy (no information is available on Switzerland and Croatia). At other higher education institutions, such pressures seem to play a stronger role across countries and notably in the Netherlands and Finland.

Evaluation of both of teaching and research has become customary in higher education. In response to a respective question, more than 90% of academics at universities and more than 80% at other higher education institutions stated that teaching was evaluated at their institution or department. Widespread practices are students' assessment of classes, followed by formalised self-evaluation and by assessments on the part of department heads. The fifth line of Table 5.7 shows the percentage of academics who note that teaching *evaluation plays a role at their institution in encouraging academics to improve their instructional skills*. This is observed by more than half the university-based academics in Italy, Ireland and the United Kingdom, and the respective figures are not much lower in the Netherlands, Norway and Switzerland. In contrast, such a practice is hardly observed at universities in Finland and Poland. At other higher education institutions, it is reported as widespread in the Netherlands and Finland. Previous findings from Finland suggest that the role of regulations, expectations and evaluation varies strongly between the university sectors and other higher education institutions.

5.7 Institutional Support for Teaching

Pressures and incentives for the improvement of teaching may be futile if the infrastructure is not congenial. Therefore, the questionnaire also addressed the quality of various elements of institutional support for teaching: training courses for the enhancement of teaching quality, the attitude of administrative staff towards teaching, support staff for teaching as well as the classroom and library infrastructure.

Training provisions for the enhancement of the teaching quality are available for more than half the academics at universities in Ireland, the United Kingdom and the Netherlands. In various other countries, such training provisions are quite frequent, as the first line in Table 5.8 shows. They are only exceptional at universities in Italy and Poland. At other higher education institutions, such training provisions are less frequently cited; this could be due to the fact that the size of these institutions is often smaller. The highest percentages are reported in Ireland and by far the lowest in Poland.

It is interesting to note that junior staff in some countries reports the availability of training provisions for the enhancement of teaching less frequently than senior academics. This is most strikingly the case for junior staff at universities in Finland and at other higher education institutions in Germany. One could have expected the opposite because training programmes of that kind often put an emphasis on junior academics.

The academics' views as regards *supportive attitudes of their administrators towards their teaching activities* vary to a lesser extent by country than all the other perceptions stated in this context. There is no overwhelming enthusiasm about the teaching support on the part of administrative staff in the surveyed countries. As the second line of Table 5.8 shows, the most frequent positive statements are made in this respect by academics at universities in the Netherlands, Norway, Switzerland and the United Kingdom, while they are rare for academics in Italy and notably university professors in Finland.

Supporting teaching through *specialised staff not primarily involved in teaching*, for example, guidance counsellors or persons in charge of curriculum coordination, is not necessarily a widespread and qualitatively well-established practice. Positive ratings are only made, as the third line of Table 5.8 shows, by half and more of the university professors in Switzerland, academic junior staff at universities both in Switzerland and Croatia and by junior staff at other higher education institutions in Germany. The least frequent positive statements are made by academics at universities in Italy as well as – interestingly enough in contrast to the positive statements made above by junior staff – by professors at other higher education institutions in Germany. The latter discrepancy could be explained by the fact that the number of support staff is very small in Germany, but those who have this kind of job might do their job well (some of the respondents might be support staff).

Most of the academics surveyed are convinced that the *infrastructure for teaching* they experience is relatively good, as the fifth through seventh lines of Table 5.8 show. Classrooms and technology of teaching are highly appreciated by about

Table 5.8 Perceived institutional support (percentage)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Teacher training[a]	42	56	20	63	9	60	34	53	3	43	30	65
Administrative support[b]	27	43	28	32	29	46	30	20	20	43	30	44
Teaching support staff	23	51	44	36	22	37	28	37	16	17	22	36
Classrooms	54	77	52	53	49	64	40	75	38	55	61	36
Technology for teaching	59	79	62	60	45	60	47	75	37	58	52	42
Library facilities and services	60	74	46	71	67	67	44	68	56	71	62	52
Mean of all above	45	63	42	53	37	56	37	55	28	48	43	46
Juniors at universities												
Teacher training[a]	43	47	19	66	9	57	29	37	2	33	22	56
Administrative support[b]	25	43	29	28	28	45	26	27	17	44	30	38
Teaching support staff	27	50	51	44	17	39	26	45	14	26	27	35
Classrooms	52	75	49	61	47	62	51	73	35	63	45	36
Technology for teaching	57	77	59	67	39	63	54	68	35	63	50	42
Library facilities and services	65	73	42	77	58	73	51	75	49	81	46	55
Mean of all above	45	61	42	57	33	57	40	54	25	52	37	44
Seniors at other HEIs												
Teacher training[a]		37		61	8	44	38	33		26	22	
Administrative support[b]		45		26	36	42	30	29		40	21	
Teaching support staff		37		44	21	37	13	36		19	31	
Classrooms		67		53	61	55	59	72		47	69	
Technology for teaching		79		70	53	57	58	66		58	61	
Library facilities and services		64		76	70	57	49	77		92	42	
Mean of all above		55		55	42	49	41	52		47	41	
Juniors at other HEIs												
Teacher training[a]		28		56	9	49	11	29		28	17	
Administrative support[b]		41		38	30	39	39	19		40	28	
Teaching support staff		40		39	14	34	63	44		20	22	
Classrooms		67		54	42	52	62	58		45	48	
Technology for teaching		78		64	34	56	54	72		60	51	
Library facilities and services		62		66	65	61	59	84		100	45	
Mean of all above		53		53	32	49	48	51		49	35	

Question C4: Please indicate your views on the following… Responses 1 and 2 added (Scale from 1=strongly agree to 5=strongly disagree)

Question B3: At this institution, how would you evaluate each of the following facilities, resources or personnel you need to support your work? Responses 1 and 2 added (Scale of answers from 1 = excellent to 5 = poor)

[a]At your institution there are adequate training courses for enhancing teaching quality;

[b]A supportive attitude of administrative staff towards teaching activities

three-quarters of the academics at universities in Finland and Switzerland; the respective infrastructure at other higher education institutions is slightly less frequently praised. Cautious or negative ratings are only frequent in Italy and Poland. Library facilities and services are viewed positively by 70% or more of each of the university professors in Switzerland, Ireland and Norway, junior academic staff in these countries as well as in Finland, professors at other higher education institutions in Norway, Finland, Ireland and Poland, and finally by junior academic staff at other higher education institutions in Norway and Finland.

In the final line of Table 5.8, an *aggregate of the various ratings of the support for teaching* is provided. In summarising the ratings across institutional types and staff categories we note the positive ones in Switzerland, slightly ahead of Finland, Ireland, the Netherlands and Norway. Less than half the ratings are positive in Austria, Croatia, Germany, Portugal, the United Kingdom and even fewer are positive in Poland. Least frequent positive ratings in this respect are found in Italy.

5.8 Attitudes Towards Teaching and Teaching-Related Activities

Despite the various regulations, sanctions and incentives and the external resource conditions, academics have enormous flexibility in handling their teaching activities, as was already demonstrated with respect to the time spent on teaching. It is generally assumed that the goals and values of the academics as regards teaching have a substantial impact in this respect. In the questionnaire, five dimensions of *approaches as regards teaching* were addressed, which could be formulated as follows:

- *Practice-oriented approach*, addressed in the questionnaire with the following formulation: “Practically oriented knowledge and skills are emphasised in your teaching”.
- *International approach*: “In your courses you emphasise international perspectives or content”.
- *Value-oriented approach*: “You incorporate discussions of values and ethics in your course content”.
- *Honesty approach*: “You inform students of the implications of cheating or plagiarism in your courses”.
- *Meritocratic approach*: “Grades in your courses strictly reflect levels of student achievement” (cf. Teichler 2010a).

A *practice-oriented approach* in teaching is by no means only customary at other higher education institutions; rather, as Table 5.9 shows, it is emphasised at universities almost as often as at other higher education institutions. About three-quarters or more of the professors at both types of institution point this out in Croatia, Ireland, Germany and Portugal as well as those at other higher education institutions in Austria. In contrast, practice-oriented teaching is emphasised by less than half the

Table 5.9 Attitudes towards teaching and teaching-related activities (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Practice-oriented approach	67	53	79	75	44	40	75	31	54	49	75	69
International approach	84		77	86	31	64	79	63	62	69	90	66
Value-oriented approach	62		62	68	24	48	57	53	40	45	71	69
Honesty approach	57		62	82	63	53	53	41	32	36	78	94
Meritocratic approach	81		69	94	30	54	72	95	79	78	55	87
Mean of the items above	71		70	81	39	52	67	56	53	55	73	77
Juniors at universities												
Practice-oriented approach	77	58	82	80	45	42	77	48	54	51	77	67
International approach	67		59	84	29	60	50	46	60	60	82	60
Value-oriented approach	58		55	74	20	44	36	41	34	36	71	70
Honesty approach	59		63	85	65	58	41	38	28	36	88	86
Meritocratic approach	82		51	90	31	59	59	89	81	71	53	79
Mean of the items above	68		62	83	38	52	52	52	51	50	74	72
Seniors at other HEIs												
Practice-oriented approach		83		93	48	84	93	79		57	81	
International approach				75	22	58	60	52		61	68	
Value-oriented approach				70	33	71	54	53		39	73	
Honesty approach				85	73	67	58	60		41	72	
Meritocratic approach				85	25	42	80	98		80	47	
Mean of the items above				80	39	64	69	68		57	68	
Juniors at other HEIs												
Practice-oriented approach		74		90	47	90	99	80		70	82	
International approach				75	21	38	40	45		64	75	
Value-oriented approach				82	23	62	21	57		48	62	
Honesty approach				92	66	62	81	55		60	75	
Meritocratic approach				89	26	44	76	95		52	51	
Mean of the items above				86	37	59	63	66		59	69	

Question C4: Please indicate your views on the following…

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

professors at both institutions in Finland, the Netherlands and Poland. It is striking to note that higher proportions of juniors emphasise practice orientation: in addition to those from the countries named above, there are also those in Switzerland, Finland, the Netherlands and the United Kingdom.

International perspectives are emphasised everywhere quite strongly, but they are slightly more often pointed out by respondents from Ireland and Portugal than by those from most other countries. In contrast, academics from Poland seldom report an international emphasis.

Discussions of values seem to happen frequently but are not on the top of the list. They are emphasised by more than two-thirds of both seniors and juniors in Ireland

and the United Kingdom and almost consistently in Portugal. On the other hand, they are seldom addressed in Poland.

An *honesty approach* in terms of warning students against cheating and plagiarism is most widespread among academics in Ireland and the United Kingdom. Also, academics in Portugal are critical about dishonest behaviour. This is least emphasised by academics in Italy.

A *meritocratic approach* in terms of grading strictly according to achievement is most strongly underscored by academics in Ireland, Finland, the United Kingdom, Austria and Italy. In contrast, by far the least emphasis is expressed by academics in Poland.

Across all these kinds of values addressed in the questionnaire, the academics in Ireland seem to have the strongest positive emphasis. In contrast, most academics in Poland seem to care the least about these approaches.

5.9 Diversity of Teaching Activities

Classroom lecturing is assumed to be the most frequent teaching method. Thus, it does not come as a surprise to note that about 95% of the respondents apply this method. But other methods are often viewed as highly valuable to motivate the students and enhance their competences. The project teams wanted to know how far teaching methods varied. Therefore, the questionnaire aimed to explore the frequency of other methods and addressed the following seven additional teaching and learning activities:

- *Individualised instruction* is cited according to country by an average of 66% of the university professors.
- *Learning in projects* by 46%.
- *Practice instruction or laboratory work* by 44%.
- *ICT-based learning or computer-assisted learning* by 30%.
- *Distance education* by 12%.
- *Face-to-face interaction with students outside class* by 77%.
- *Electronic communication (e-mail) with students* by 77%.

The responses to the seven additional modes of teaching are aggregated in Table 5.10. Senior academics at other higher education institutions use a broader range of teaching modes (4.0) than university professors (3.6). In both types of institutions, professors report on average a higher variety of teaching activities than junior academics (3.7 at other higher education institutions and 3.4 at universities). The greatest frequency of diverse teaching activities is reported by academics in the United Kingdom and Finland, followed by academics in Ireland, Croatia and Italy. In contrast, the variety of teaching modes is smallest in Austria and is also quite limited in Germany.

Table 5.10 Frequency of additional teaching activities (mean of number of responses*)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at university	2.3	3.4	4.0	3.7	3.7	3.2	2.8	4.4	3.7	4.1	3.3	4.5
Juniors at university	1.9	3.0	3.8	3.9	3.7	3.2	2.3	3.7	3.8	3.4	3.7	4.0
Seniors at other HEIs		4.0		4.1	3.7	3.7	3.2	5.1		3.7	3.5	
Juniors at other HEIs		3.6		4.1	3.6	3.5	2.6	4.9		3.2	3.6	

Question C2: During the current (or previous) academic year, have you been involved in any of the following teaching activities?
*Average number of seven teaching activities named others than regular classroom teaching

Moreover, academics were asked whether they had been *involved in the development of course material and in curriculum/programme development*. This is confirmed by 73 and 65% of the university professors on average across countries.

5.10 Interrelationships Between the Academic Functions

Universities in Europe are based on the belief – often attributed to the Humboldtian ideal – that teaching and research should not merely coexist at universities but that the two activities would have a cross-fertilising effect. In the questionnaire, respondents were asked what influence research and service had on teaching and whether they considered teaching and research compatible in academic work.

The *fertilising effect of research activities on teaching* is attested by about 80% and more of university professors in all countries except Poland where only about half the professors responded affirmatively. As Table 5.11 shows, large proportions of the juniors at universities – again except Poland – and of seniors at other higher education institutes observe such a reinforcing effect. Among juniors at other higher education institutions, however, the proportion of those responding affirmatively is lower on average – notably in Ireland, Poland, Germany and Finland.

The question of whether *teaching and research are hardly compatible* can be viewed as contradicting the previous one. Thus, it does not come as a surprise to note that only about 30% of the respondents have this notion. In fact, the responses to the two questions correlate negatively (e.g. $r=-.244$** for university professors). We also observe that the notion of non-compatibility of teaching and research correlates with the responses to the item "my job is a source of considerable personal strain". Again, it does not come as a surprise to note that many respondents from Poland consider teaching and research as hardly compatible; Table 5.11, however, shows that this even more frequently stated by respondents from Croatia.

Service activities are viewed as *reinforcing teaching* by less than half the academics. Frequent statements of a positive effect of service activities vary by county: they are reported frequently by academics at universities in Ireland

Table 5.11 Relationship between service and research activities in teaching (percentage*)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Research reinforces teaching	84	79	81	92	54	82	86	83	85	86	86	83
T & R hardly compatible	28	16	74	14	47	18	33	37	12	13	19	25
Service reinforces teaching	48	32	42	66	30	45	37	44	52	69	6	35
Juniors at universities												
Research reinforces teaching	77	61	68	87	46	82	60	73	78	75	75	73
T & R hardly compatible	33	19	59	18	61	25	34	35	17	14	28	25
Service reinforces teaching	50	29	35	62	28	33	31	32	45	54	7	33
Seniors at other HEIs												
Research reinforces teaching		75	81	51	76		74	68		86	76	
T & R hardly compatible		25	11	45	31		47	38		20	32	
Service reinforces teaching		49	72	39	74		56	47		59	6	
Juniors at other HEIs												
Research reinforces teaching		52	74	45	37		44	42		65	69	
T & R hardly compatible		30	27	58	26		27	45		10	36	
Service reinforces teaching		44	65	29	71		35	39		32	2	

Question B5: Teaching and research are hardly compatible with each other
Question C4: Your research activities reinforce your teaching; Your service activities reinforce your teaching
*Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

and Norway but seldom by academics at other higher education institutions in Croatia and Poland.

5.11 Determinants of the Time Spent on Teaching Activities

As already stated, academics are relatively free to decide how much time they devote to teaching-related activities, for example, preparation, counselling and curriculum development. It may depend on contextual factors, such as regulations and expectations, support and favourable resources, or it may be influenced by their own motives. In a multiple regression analysis, we explore which factors are most powerful in influencing the time spent on teaching activities when classes are in session.

Tables 5.12 and 5.13 show that academics' preferences – whether they want to put a strong emphasis on teaching or on research – have the strongest impact on the amount of time that is spent on teaching or teaching-related activities. The academics allocate their time according to their preferences. This holds true both at universities and at other higher education institutions. This factor plays the strongest role in universities in Germany, Austria and Finland and at other higher education institutions in Germany, Finland and Switzerland. Only Italian universities and Portuguese other higher education institutions are exceptions.

Table 5.12 Factors influencing the time spent on teaching activities by academics at universities when classes are in session (multiple regression analysis)

	2010						2007/2008						
	AT Adj. $R^2 = .221$	CH Adj. $R^2 = .081^a$	HR Adj. $R^2 = .116^a$	IE Adj. $R^2 = .067$	PL Adj. $R^2 = .144$	NL Adj. $R^2 = .031$	DE Adj. $R^2 = .233^a$	FI Adj. $R^2 = .410$	IT Adj. $R^2 = .077$	NO Adj. $R^2 = .182$	PT Adj. $R^2 = .080$	UK Adj. $R^2 = .251$	All Adj. $R^2 = .199$
Standardised beta													
Regulations													
Number of hours in the classroom				(−0.117)						(−0.083)			
Number of students in your classes					0.062				0.097			−0.164	0.032
Number of graduate students for supervision					0.061								0.035
Percentage of students passing exams								(0.094)					
Time for student consultation					−0.053		(−0.071)	−0.111					−0.082
Number of all teaching activities					(0.036)			0.187		0.167		0.223	0.136
Organisational aspects													
Funding based on numbers of students													
Funding based on numbers of graduates													
Teaching quality considered in personnel decisions								(−0.088)					(−0.027)
Support													
Training courses for teaching quality													0.042

(continued)

Table 5.12 (continued)

	2010						2007/2008						
	AT Adj. R^2 = .221	CH Adj. R^2 = .081[a]	HR Adj. R^2 = .116[a]	IE Adj. R^2 = .067	PL Adj. R^2 = .144	NL Adj. R^2 = .031	DE Adj. R^2 = .233[a]	FI Adj. R^2 = .410	IT Adj. R^2 = .077	NO Adj. R^2 = .182	PT Adj. R^2 = .080	UK Adj. R^2 = .251	All Adj. R^2 = .199
Support of administrative staff towards teaching			−0.198		(−0.034)			0.122	(−0.073)				(−0.01)
Teaching support staff													0.032
Classrooms					(−0.06)								
Technology for teaching					0.053								0.024
Library facilities and services	(0.094)		(0.145)				(0.081)						(0.024)
Humboldtian aspects													
Research activities reinforce teaching	(−0.071)												−0.036
Service activities reinforce teaching	0.133				(0.040)		0.103		0.194		0.181	(0.122)	0.101
Teaching and research are hardly compatible	(−0.101)				−0.157	−0.23		−0.12	−0.104				−0.107
Preferences	−0.444	−0.268	−0.258	−0.238	−0.301	−0.26	−0.46	−0.446	−0.157	−0.333	−0.298	−0.359	−0.363

Only significant standardised beta values are reported. Significance level 0.01 and in brackets 0.05

[a]No values for following variables: CH: Number of students in your class; Funding of departments substantially based on numbers of students; Funding of departments substantially based on numbers of graduates; Considering teaching quality in personnel decisions; HR: Number of hours in the classroom; Number of students in your class; Number of graduate students for supervision; Percentage of students passing exams; Time for student consultation; Funding of departments substantially based on numbers of students; Funding of departments substantially based on numbers of graduates; Considering teaching quality in personnel decisions; DE: Number of hours in the classroom

Table 5.13 Factors influencing the time spent on teaching activities by academics at other higher education institutions when classes are in session (multiple regression analysis)

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	All
		Adj. R^2 = .362[a]		Adj. R^2 = .139[a]	Adj. R^2 = .199	Adj. R^2 = .071	Adj. R^2 = .255[a]	Adj. R^2 = .211			Adj. R^2 = .130		Adj. R^2 = .187
Standardised beta													
Regulations													
Number of hours in the classroom		–0.172		–0.239									(–0.056)
Number of students in your classes													0.064
Number of graduate students for supervision					–0.126						0.222		
Percentage of students passing exams						–0.167							–0.062
Time for student consultation													
Number of all teaching activities													
Organisational aspects													
Funding based on numbers of students								0.188			0.152		(0.059)
Funding based on numbers of graduates					–0.176						–0.199		–0.116
Teaching quality considered in personnel decisions													
Support													
Training courses for teaching quality							(–0.236)						

(continued)

Table 5.13 (continued)

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	All
		Adj. R^2 = .362[a]		Adj. R^2 = .139[a]	Adj. R^2 = .199	Adj. R^2 = .071	Adj. R^2 = .255[a]	Adj. R^2 = .211			Adj. R^2 = .130		Adj. R^2 = .187
Support of administrative staff towards teaching		(0.107)											
Teaching support staff													
Classrooms													
Technology for teaching													
Library facilities and services		–0.185									–0.205		
Humboldtian aspects													
Research activities reinforce teaching											(0.109)		
Service activities reinforce teaching						(0.163)					(–0.115)		0.096
Teaching and research are hardly compatible					(–0.100)								–0.058
Preferences		–0.47		–0.38	–0.365	–0.235	–0.581	–0.429					–0.388

Only significant standardised Beta values are reported. Significance level 0.01 and in brackets 0.05

Excluded are Norway and the United Kingdom, because the absolute number of respondents to all variables is very low

[a]No values for following variables: CH: Number of students in your class; Funding of departments substantially based on numbers of students; Funding of departments substantially based on numbers of graduates; Considering teaching quality in personnel decisions; DE: Number of hours in the classroom

Three other factors play an additional role at universities in some countries. Academics at universities who are involved in a broad range of teaching and learning modes and those who consider service activities as reinforcing their teaching spend substantial time on teaching. Furthermore, it is interesting to note that those who teach more than others state that teaching and research are hardly compatible.

In the case of academics at other higher education institutions, one additional variable shows a link with time spent on teaching. We observe in a number of countries (notably Poland and Portugal) that academics who note funding linked to graduate numbers at their institution spend more time on teaching activities. Otherwise, the respective links are similar for academics at both types of higher education institutions.

Altogether, the explanatory power of all the variables included in the model is below 20%, that is, somewhat limited. There are two exceptions: at Finnish universities and at other higher education institutions in Switzerland, the time spent on teaching can be explained at over 35% by the factors examined. As already noted above, these are also the cases where preference for teaching versus research plays the strongest role.

5.12 Conclusion

Teaching and research are viewed as the core functions of universities in Europe. While research is left by and large to the discretion of the individual academics, teaching takes place with minimum rules as regards teaching loads, teaching periods during the year, physical presence, etc. However, academics are extremely free as regards reserving time and energy for all teaching-related activities, for example, preparation, assessment, counselling and curriculum development. The EUROAC survey shows that university professors in Europe spend only about 30% of their overall working time on teaching and teaching-related activities, that is, somewhat less than for research. Even during the periods of the year when classes are in session the time spent on teaching and related activities remains below 40%, even though it exceeds the time spent on research. Less than 30% of university professors have a stronger preference for teaching. It is interesting to note that junior academics at universities differ in those respects only marginally on average across Europe.

Apart from regulations regarding teaching load, there are few aspects of regulations and few favourable aspects of the work setting that most academics at university underscore: many underscore that funding is based on the number of students. Slightly more than half reports that evaluation acts as a stimulus for the improvement of educational activities, and more than half states that appropriate courses exist at their university to enhance the quality of teaching. However, as a multivariate analysis shows, the extent to which such rules exist and favourable conditions are in place has hardly any impact on the time allotted to teaching; rather, preferences for teaching and the variety of teaching modes are important for the time reserved for teaching activities.

In various respects, the academics at other higher education institutions – information is available for eight European countries – report more similar conditions and attitudes towards teaching than one could have expected on the basis of the different institutional "missions". For example, university professors state almost as often as senior academics at other higher education institutions that they favour practice-oriented teaching. It is surprising to note that professors at other higher education institutions spend only about 10% more time on teaching than university professors on average across Europe. As they often have a heavier teaching load, the results of the EUROAC survey suggest that professors from other institutions spend less time on teaching-related activities per teaching hour than academics at universities. It is also surprising to note that over 40% of academics at other higher education institutions lean more strongly towards research than towards teaching.

As regards the teaching activities, the EUROAC survey explored the variety of modes. In addition to the customary lectures, more than three-quarters of the teachers do not only communicate with students face-to-face outside classes but also electronically. Two-thirds cite individualised instruction of students, and almost half the academics are involved in activities which stimulate students' learning in projects as well as practical instruction and laboratory work. Altogether, professors at other higher education institutions are involved in a slightly broader variety of teaching and learning modes than university professors and the latter in a broader variety than junior staff at both institutions.

Asked about various principles and values that guide their teaching activities, most academics respond affirmatively in every respect: they grade according to achievements and they warn against cheating, their teaching is practice-oriented and internationally oriented and they address values as well. These responses, however, are not merely indications of compliance to generally shared values. It is interesting to note that the responses to those respects vary substantially by country.

In looking at the working time, the amount of time spent on teaching, the preferences for teaching and research, as well as respective values and activities, we note the following. Academics at *universities in Austria* and *Switzerland* spend almost twice as much time on research as on teaching. Few have a preference for teaching, but this does not substantially differ from some additional countries. University professors in Switzerland work many hours. Austrian academics are least involved in a variety of teaching activities. With regard to teaching-related attitudes, academics from these two countries hardly differ from the European average: It worth mentioning that academics in Austria strongly emphasise a meritocratic approach and that junior staff in Switzerland is strongly practice-oriented.

Academics from universities in a relatively *large number of European countries* are similar in spending more time on research than on teaching, even though not as much as those in Austria and Switzerland. They also mostly have a preference for research. University professors in *Germany* and *Ireland* work many hours. They lean towards research and spend slightly more than average time on research. While German academics at universities report a limited variety of teaching activities, we note an average variety among university professors and a clearly above variety among junior staff at universities in Ireland. German academics at universities are

very practice-oriented; Irish academics underscore an international orientation as well as honesty in teaching and learning. Academics at universities in *Finland* and the *Netherlands* hardly differ from the country means in all four respects; as regards teaching-related values, university professors from both countries – in contrast to junior staff – are not strongly practice-oriented, and the academics at universities in Finland underscore meritocratic values. Similarly, responses by academics in *Italy* hardly differ from the European average. Academics at universities in *Croatia* and the *United Kingdom* are close to country means in various respects, but they excel in the variety of teaching methods. As regards values, academics at universities in Croatia are strongly practice-oriented. Academics at universities in the United Kingdom strongly underscore various teaching-related values: They put emphasis on addressing value in teaching and learning, and they emphasise honesty and meritocratic values. Finally, within this group of countries, academics at universities in *Norway* report the lowest number of working hours. Otherwise, they are close to the country means in most respects.

Academics at universities in *Poland* and *Portugal* clearly differ from those in other countries as regards teaching: they spend a relatively large amount of their time on teaching and express relatively often preference for teaching. Their working time on average is low, and professors in these two countries are not involved in a great variety of teaching activities. In addition, they share least the teaching-related values addressed in the questionnaire: notably they do not say that they emphasise international dimensions, an explicit discourse on values in teaching, and a meritocratic approach.

As already pointed out, at the European level, academics from *other higher education institutions* differ from those at universities to a lesser degree than one might have expected. However, senior academics at the former institutions more often prefer teaching in Germany and Ireland and spend a substantially higher amount of their work time on teaching in the Netherlands. Among junior staff at higher education institutions, those in Poland, Germany and Switzerland spend much time on teaching activities, while the strongest preferences for teaching are expressed by those in Finland and the Netherlands. As regards attitudes towards teaching, senior academics at Fachhochschulen in Austria clearly differ from senior academics in their country by being strongly practice-oriented.

As regards the context of teaching, we note that various *regulations and incentives* as regards teaching play a role at both universities and other institutions in the Netherlands, at universities in the United Kingdom and at other higher education institutions but also in some respects at universities in Finland. In Poland, regulations play a major role as regards the workload of academics. In contrast, regulations and incentives as regards teaching play a limited role in Austria and Italy. Institutional support for teaching is often reported in Switzerland, but not much less in Finland, Ireland, the Netherlands and Norway. It seems to be least available in Italy and in Poland.

There cannot be an undisputable conclusion as regards the homogeneity or heterogeneity of the academic profession in Europe. However, the variety across countries is certainly striking in various respects: country means of the amount of time

spent on teaching activities range from 28 to 52% in the case of senior staff at other higher education institutions, and the range is even wider in the case of junior staff at both institutions. With respect to preference for teaching, we note a country range among university professors from 18 to 45%. And to take a final example: less than one-fifth of university professors in six European countries state that teaching and research are hardly compatible. This is the case for almost half in Poland and three-quarters in Croatia. European variety in the teaching functions at higher education institutions is by no means negligible.

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Chapter 6
The Research Function of the Academic Profession in Europe

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6.1 Introduction

Research, along with teaching, is viewed as a central component of academic work. However, not all academics engage in research, or if they do, there is variation on the extent to which research is implicit in academic work (Brew and Boud 2009). Nevertheless, the centrality of research within the role of academics working in the higher education sector is without question. Since the 1980s, there has been increasing interest in the research productivity of academics. Indicators of research productivity, such as publication rates and conference presentations, are a determining factor in decisions related to promotion, tenure and the granting of research funding (Ramsden 1994). Research outputs also impact on the reputation of universities and other institutes of higher education as well as affect the career trajectories of academics. The impact of research at a reputational level is evident in the impetus from management in universities to increase the global standing of their institutions through research outputs and the acquisition of research funding. Furthermore, the investment in research has been aligned to the economic goals of countries and is explicitly stated in policy documents at European Union (EU) level. There is also worldwide evidence that faculty research productivity is a central component of ascertaining the quality of higher education institutions (Teodorescu 2000).

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This chapter presents an analysis on the research function of academics in 12 European countries: Germany (DE), Finland (FI), Italy (IT), Norway (NO), Portugal (PT), Poland (PL), the United Kingdom (UK), Austria (AT), Switzerland (CH), Croatia (HR), Ireland (IE) and the Netherlands (NL). A number of areas relating to the research role of academics are measured including levels of research collaboration, research outputs (publications and dissemination of research work), primary emphasis of research, time academics spend on research, research functions and perceptions of the conditions of research work. Comparisons are made at a number of levels including country and career stage of the academics (junior and senior) and institutional type (universities and other higher education institutions). The final section of this chapter presents a model that explores the factors associated with research productivity for each of the 12 countries.

The majority of the data presented in this chapter refers to academics working full-time in the university sector. The rationale for this was that research is less central to the ethos and mission of other institutions of higher education and that many part-time academics are hired principally for teaching purposes (Teodorescu 2000; Porter and Umbach 2001). However, Section 6.8 presents data on research in other institutions of higher education in comparison to the university sector.

6.2 Perceptions of the Conditions of Research Work

There is emerging evidence that academic freedom, a central component of the academic profession, is increasingly coming under pressure (Kogan and Teichler 2007). These pressures are multifaceted and come from a variety of sources including the increasing managerialism of the higher education sector, demands from higher education management and funders to measure the performance of academics through audit and evaluation and a demand from governments and the public to demonstrate the relevance and economic value of research undertaken by academics. As Rostan (2010) highlights, a number of actors are now involved in funding and determining the research goals of academics working in higher education. These actors include governments, private sector organisations and nongovernmental bodies as well as the university itself. The demands and expectations of these internal and external stakeholders might impact on the freedom academics traditionally perceived as being associated with their research work and ultimately change the conditions of research work. To this end a number of questions from the comparative survey were analysed to ascertain academics' perceptions of the conditions of their research work and whether pressures from internal and external stakeholders were impacting on this aspect of their work.

Academics were asked to rate the extent to which they *perceived restrictions placed on the publication of results from both publically and privately funded research had increased since they were first appointed to the university sector*. There is variation in perceptions of junior and senior academics across the 12 European countries surveyed on the extent to which they perceived restrictions had occurred (see Table 6.1). Generally, the majority of junior and senior academics

Table 6.1 Perceptions of the conditions of research work at universities (percentage agreement[a] – full-time employed academics)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors												
Restrictions on publication – publically funded[b]	57	14	22	17	21	23	40	14	18	22	19	11
Restrictions on publication – privately funded[b]	47	20	15	13	14	18	33	20	14	22	24	12
External sponsors have no influence[b]	63	62	49	51	53	59	61	53	53	67	50	42
Pressure to raise external research funds has increased[b]	94	78	65	93	85	90	93	88	81	87	88	90
Funding should concentrate on most productive[b]	63		58		50	28	52	40	67	42	44	29
Expectations of productivity increase threat research quality[b]	58		75		60	69	48	71	53	65	58	76
Expectations of useful results threat research quality[b]	68		60		55	64	58	58	48	60	46	60
Juniors												
Restrictions on publication – publically funded[b]	47	12	19	9	25	22	30	12	14	10	33	8
Restrictions on publication – privately funded[b]	39	12	39	7	13	17	25	15	10	12	18	7
External sponsors have no influence[b]	55	62	55	42	53	54	50	48	51	63	49	39
Pressure to raise external research funds has increased[b]	87	64	49	80	81	83	81	72	73	69	83	81
Funding should concentrate on most productive[b]	49		36		40	22	38	25	70	29	33	17
Expectations of productivity increase threat research quality[b]	68		67		65	74	53	75	54	72	60	78
Expectations of useful results threat research quality[b]	68		60		53	71	54	47	51	54	47	60

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree
Question D6: Please indicate your views on the following:
[b]The items were truncated, the full formulations are:
Restrictions on the publication of results from my publicly funded research have increased since my first appointment
Restrictions on the publication of results from my privately funded research have increased since my first appointment
External sponsors or clients have no influence over my research activities
The pressure to raise external research funds has increased since my first appointment
Research funding should be concentrated (targeted) on the most productive researchers
High expectations to increase research productivity are a threat to the quality of research
High expectations of useful results and application are a threat to the quality of research
For country codes, please see Table 1.1 in Chap. 1

surveyed do not agree that there are increased restrictions on the publication of results from both publically and privately funded research. However, a substantial proportion of both senior and junior academics in Austria and Germany, as well as junior academics in Portugal, report that restrictions on the publication of results from publically funded research have increased since they first have been appointed. In Austria, 57% of senior academics and 47% of junior academics report that restrictions have increased since they have been appointed. Although proportionally lower, the same patterns are evident in Germany with 40% of seniors and 30% of juniors. The greatest discrepancy between the perceptions of junior academic staff and senior academics is in Portugal; only a fifth of senior academics in the Portuguese higher education system report such publication restrictions as compared to a third of junior academics. A somewhat smaller proportion of senior (47%) and junior (39%) academics at Austrian universities report restrictions on publishing results from privately funded research. German academics are evenly split in this respect: 33% of senior academics agreed that restrictions have increased whereas 34% disagree; similar patterns are found among junior academics (25% agree vs. 26% disagree).

Overall, the majority of junior and senior academics throughout the European countries surveyed are in agreement that *external clients have no influence over research activities*. Levels of agreement among senior academics range from 49% (Croatia) to 67% (Norway). Among junior academics, levels of agreement are lower than those reported by senior academics ranging from 39% (UK) to 63% (Norway).

Academics were also asked to rate their level of agreement to the statement: *the pressure to raise external research funds has increased since my first appointment*. There is a high level of agreement among all academics surveyed with this statement, notably on the part of senior academics. Over 90% of senior academics in Austria, Ireland, the Netherlands, Germany and the UK respond affirmatively as well as more than three quarters in the other countries, with the exception of Croatia (65%). The respective proportions are slightly lower among junior academics ranging from more than 80% in Austria (87%), the Netherlands (83%) and Poland (81%) to less than 70% in Norway (69%) as well as Switzerland (64%) and less than half in Croatia (49%).

Attitudes were also measured on whether respondents' agreed or disagreed that *research funding should be concentrated on the most productive researchers*. With the exception of the Netherlands (43%) and the UK (44%), the majority of senior academics agreed, most notably those in Italy (67%) and Austria (63%). Similar patterns of agreement and disagreement were reported for junior academics, though, in most countries, on a slightly lower level. The highest level of agreement is reported by junior academics at Italian universities (70%) – which was higher than that reported by their senior counterparts.

Aligned to the pressures identified in the literature relating to the need for academics to increase research productivity and produce results that are useful for national economies and society (Rostan 2010), the extent to which academics

perceived these pressures are a threat to the quality of research was also measured. Overall, both senior and junior academics are in agreement that *pressures to increase research productivity are a threat to the quality of research*. In the vast majority of countries surveyed, a higher proportion of junior academics were in agreement when compared to senior academics; however, differences, in most cases, were not large and in many countries the perceptions of two cohorts were similar. The highest levels of agreement that research quality was threatened due to expectations that research productivity is increased were found among senior and junior academics in Croatia (senior 75% vs. junior 67%), Finland (71% vs. 75%), the Netherlands (69% vs. 74%), Norway (65% vs. 72%) and the UK (76% vs. 78%).

Although a lower proportion of senior and junior academics agree that high expectations of useful results are a *threat to the quality of research* when compared to the *threat of increased productivity*, the vast majority of both cohorts are also in agreement. The highest levels of agreement are reported by academics in Austria (68% both seniors and juniors) and the Netherlands (senior 64% vs. junior 71%).

6.3 Research Activities

Academics are involved in varied activities associated with research including preparing and conducting research projects, supervising research teams or graduate students, preparing papers for publication, involvement in the process of technology transfer and proposal writing. There are also various administrative activities associated with research including the management of research contracts and budgets and the purchase of research supplies. Finally, academic research has a collaborative dimension within the scientific community including involvement in the peer review process, undertaking editorial duties and membership of scientific committees.

Table 6.2 shows that involvement in research activities varies throughout European higher education systems. *Involvement in the preparation of research projects* among senior staff ranges from 43% in Poland to 75% in Finland and among junior academics ranges from 46% in Poland to 72% in the Netherlands. In half of countries surveyed (Austria, Ireland, Poland, the Netherlands, Portugal, the UK), relatively similar proportions of junior and senior academics are active in this domain, whereas the respective proportion is higher among juniors than among their senior colleagues in Switzerland, in Norway and most strikingly in Germany (71% junior as compared to 59% senior). Finland, in contrast, is the only country where a significantly lower proportion of junior staff (64%) are involved in the preparation of projects when compared to senior academics (75%).

The proportion of academics reporting that they *actually conduct research* is similar to those involved in project preparation. Except for the UK, a higher pro-

Table 6.2 Research activities at universities (percentage – full-time academics)

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors											
Preparing experiments/inquiries	59	58	56	43	70	59	75	53	53	53	52
Conducting experiments/inquiries	52	50	64	38	61	50	59	60	58	52	47
Supervising a research team[a]	77	81	61	69	61	66	74	69	54	57	53
Writing academic papers[b]	95	91	82	90	87	84	84	81	88	88	87
Involvement in technology transfer	21	30	12	12	17	27	32	15	15	24	21
Proposal writing[c]	76	79	60	65	63	70	71	72	84	51	71
Managing research budgets/contracts	66	72	45	28	29	62	60	51	52	48	51
Purchasing research supplies[d]	47	48	41	56	19	53	49	58	39	50	41
Juniors											
Preparing research projects	62	65	57	46	72	71	64	60	58	52	50
Conducting research projects	62	64	68	46	67	68	59	60	48	50	46
Supervising a research team[a]	43	36	36	49	53	48	35	51	23	31	35
Writing academic papers[b]	85	80	61	91	86	86	74	81	78	77	83
Involvement in technology transfer	12	17	13	9	14	15	30	14	8	16	13
Proposal writing[c]	56	47	44	63	59	57	55	69	71	29	56
Managing research budgets/contracts	39	28	32	16	21	43	26	32	21	22	29
Purchasing research supplies[d]	39	35	30	51	19	47	44	60	33	41	33

Question D3: Have you been involved in any of the following research activities during this (or the previous) academic year?

[a]Supervising a research team or graduate research assistants

[b]Writing academic papers that contain research results or findings

[c]Answering calls for proposals or writing research grants

[d]Purchasing or selecting equipment and research supplies

portion of junior academics are involved in conducting research projects than senior academics. The differences between the two cohorts are small, however, in Ireland, Norway and Portugal.

A substantially higher proportion of academics – more than 70% – are involved in writing academic papers. The highest percentages of senior academics undertaking this activity are in Austria (95%), Switzerland (91%) as well as Poland (90%), whereas the highest proportion of junior academics involved in this activity are from Poland (91%), the Netherlands (86%) and Germany (86%).

Areas where senior academics generally have greater involvement in research activities than junior academics are those of supervising a research team, technology transfer, proposal writing, managing research budgets and contracts as well as purchasing research supplies. Over half of the senior academics surveyed reported that they were supervising a research team:

- *Writing proposals* is a major research activity for most of senior academics surveyed in the university sector. Involvement ranges from 51% in Portugal to over 70% in Austria, Switzerland, Italy and the UK, rising to 84% in Norway. The respective proportions are lower among junior academics in most countries.

Table 6.3 External research activities at universities (percent, full-time academics)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Member of committee[a]	66	84	42	75	38	43	35	48	58	60	62	41
Served as a peer reviewer	91	78	85	92	75	55	52	68	63	73	76	78
Served as editor	53	43	49	33	14	25	42	70	13	19	38	33
Member of committee	23	37	10	36	11	16	10	12	40	16	34	16
Served as a peer reviewer	49	35	28	56	36	34	17	26	44	33	42	59
Served as editor	18	10	12	14	4	10	11	8	4	5	14	13

Question A13: During the current academic year, have you done any of the following?
Items formulated: [a]Served as a member of national/international scientific committees/boards/bodies; Served a peer reviewer (e.g. for journals, research sponsors, institutional evaluations); Served as an editor of journals/book series

- *Managing research budgets and contracts* is generally the remit of senior academics but varies substantially by country from 28% in Poland to 72% in Switzerland. The proportion of junior academics active in this area is lower ranging from 16% in Poland to 43% in Germany.
- The proportion of senior academics *supervising a research team* ranged from 53% in the UK to 81% in Switzerland. Among juniors, only in the Netherlands (53%) and Italy (51%) are more than half involved in this research activity.
- The overall proportion of academics involved in *technology transfer* is relatively low. For senior academics, this ranges from 12% in Ireland and Poland to 32% in Finland. Junior academics (30%) in the Finnish higher education system also reported a relatively high level of involvement in this activity.

The work of academics may also involve activities related to the assessment of research such as participation in the peer review process, undertaking editorial duties and membership of scientific committees. Involvement in these activities is more frequent among senior academics than among junior staff, as shown in Table 6.3.

Peer reviewing is the most frequently reported external research activity undertaken by academics. A total of 72% of senior academics, on average, across countries are active in this area, ranging from approximately 52% in Germany and 55% in the Netherlands to more than 90% in Austria and Ireland. The respective proportion is only 38% among junior academics, ranging from 17% in Germany to 56% in Ireland and 59% in the UK.

On average across countries, 52% of senior academics serve as a *member of a national/international scientific committee* with only half as many (26%) reporting that they serve as an *editor of a journal or book series*; the respective figures for junior staff are 21% and one tenth. Membership of scientific committees is highest among senior academics in Switzerland (84%) and Ireland (75%); Finland (70%) and Croatia (49%) reported the highest level of involvement in book or journal editorship. Among junior academics, scientific committee membership ranges from approximately 10% in Croatia, Poland and Germany

to about a third in Switzerland, Ireland, Italy and Portugal. The proportion of junior academics involved in editorship ranges from 5% in Norway to 18% in Austria.

6.4 Time Spent on Research

One of the salient conditions for research is the time which is available to academics or which academics themselves make available for research. Table 6.4 outlines the time, measured in hours per week that academics – in this case full-time academics at universities – spend on research activities when classes are in session and not in session. Overall, academics spend about 8 h per week more on research, when classes are not in session, than they do when classes are in session. The respective self-reported time is 23 h as compared to 16 h among senior academics and 26 vs. 18 h among junior staff.

Senior academics in Switzerland and Italy spend the greatest number of hours on research when classes are both in and out of session. The lowest number of hours per week spent on research when classes are in session was reported by senior academics in Norway and the United Kingdom (13 h respectively). The lowest number of hours spent on research by senior academics when classes are out of session was reported by senior academics in the Norwegian (17 h) higher education system. Similar to their senior colleagues, junior academics in Switzerland spend, on average, the most time on research when classes are both in (28 h) and out (33 h) of session, whereas junior academics in Norway (13 h) and the UK (13 h) spend the least time on research when classes are in session.

When classes are in session, junior staff in Switzerland, Austria, Finland and Norway spend more time on research than their senior colleagues. About the same amount of time is spent by both categories in Ireland, the Netherlands, Germany, Italy, Portugal and the United Kingdom. Only in Poland (17 h) did senior academics spend more time on research when classes are in session than juniors (15 h); this pattern is similar to when classes are not in session.

Table 6.4 Hours per week spent on research at universities (arithmetic mean, full-time academics)

	2010					2007/08					
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors											
When classes in session	16.6	18.1	15.6	17.1	16.1	17.3	13.8	17.4	13.3	13.5	13.3
When classes not in session	24.2	26.4	24.1	21.8	23.6	24.1	24.3	27.1	17.1	21.9	23.0
Juniors											
When classes in session	19.9	28.3	14.1	15.4	15.8	17.4	20.6	17.6	16.7	13.8	13.1
When classes not in session	26.3	33.1	24.7	22.8	26.9	22.8	27.4	28.7	21.8	24.5	24.4

Question B1: Considering all your professional work, how many hours do you spend in a typical week on each of the following activities?

6.5 Research Collaboration

It is widely assumed that collaborative research work among academics at national and international levels has increased in recent years. To this end, the European survey explores the extent to which academics work with others not only in their own institution but also the extent of national and international collaboration.

Table 6.5 shows that research collaboration is widespread. Senior academics in Croatia (89%), Switzerland (85%), Finland (83%) and Germany (83%) report the highest levels of national collaboration across the European countries surveyed, while the lowest figure was reported by academics in Norway (65%). International research collaboration was also predominant in Switzerland (95%), Austria (92%) and Ireland (90%).

The figures are slightly lower, on average, for junior academics. Those in Croatia (81%) and Italy (74%) report the highest levels of research linkages nationally in contrast to Norway where approximately half of junior academics surveyed reported some form of national research collaboration. International research collaboration is most frequent among junior academics in the Netherlands (73%), Austria (72%), Croatia (70%) and Ireland (70%), but also relatively high in Finland (67%) and Switzerland (67%), while the respective proportion is less than half in Poland (47%).

Table 6.5 Involvement in research collaboration at universities (percent, full-time academics)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors												
Without collaboration	57	39	43	55	47	74	65	9	44	27	31	60
Project collaboration	86	94		77	83	93	75	93	83	84	70	86
National collaboration	75	85	89	73	74	73	83	83	78	65	77	72
International collaboration	92	95	86	90	64	77	73	87	62	72	67	68
Juniors												
Without collaboration	62	45	39	61	61	77	64	17	51	32	34	59
Project collaboration	83	83		71	71	90	70	88	79	79	63	80
National collaboration	61	58	81	57	61	66	58	66	74	51	67	60
International collaboration	72	66	70	70	47	73	45	67	55	56	56	53

Question D1: How would you characterise your research efforts undertaken during this (or the previous) academic year? – Are you working individually/without collaboration on any of your research projects? Do you have collaborators in any of your research projects? Do you collaborate with persons at other institutions in your country? Do you collaborate with international colleagues?

Large differences between senior and junior staff in the extent of national research collaboration were identified in Switzerland (seniors 85% vs. juniors 59%) and Germany (83% vs. 58%). As regards international research collaboration, large differences are reported again for Switzerland (95% seniors vs. 67% juniors) and Germany (73% vs. 46%) as well as Finland (88% vs. 67%) and Ireland (90% vs. 70%).

6.6 Emphasis of Research

Academics in 12 European countries were surveyed regarding the emphasis and orientation of their research. In addition, comparisons were made on the commercial or social orientation of research, the international focus of the research and the level of disciplinary involvement (see Table 6.6).

Emphasis on *basic and theoretical research* is reported most frequently by academics at universities in Austria, Switzerland, Poland, the Netherlands and Norway, whereas *applied and practical research* is identified as main focus by a majority of academics in Croatia, Portugal and the UK. Both approaches are more or less equally emphasised by academics in Ireland, Germany, Finland and Italy. Across all countries surveyed, a *commercial emphasis* on research is least frequently reported.

Table 6.6 Research emphasis at universities (percent, full-time academics)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors												
Basic/theoretical	75	66	40	55	64	62	66	62	61	72	45	58
Applied/practical	63	49	80	58	56	57	69	65	59	57	74	68
Commercial[a]	15	11	22	12	19	15	16	16	15	11	17	16
Social[a]	37	34	54	46	27	39	49	35	33	32	46	43
International[a]	74	79	63	82	43	81	70	78	78	73	69	71
One discipline[a]	42	33	28	29	45	52	33	37	36	64	19	43
Multidiscipl.[a]	58	67	84	64	60	65	70	63	66	58	83	64
Juniors												
Basic/theoretical	66	53	51	52	60	67	59	63	54	66	43	57
Applied/practical	60	52	73	64	56	57	67	62	60	60	71	60
Commercial[a]	17	14	22	15	18	11	18	19	19	15	17	13
Social[a]	35	32	56	52	31	43	28	32	33	30	45	48
International	55	61	45	65	42	76	51	57	70	65	59	59
One discipline[a]	37	30	19	29	45	49	36	39	30	61	17	38
Multidiscipl.[a]	54	63	68	61	56	69	59	57	66	52	74	61

Question D2: How would you characterise the emphasis of your primary research this (or the previous) academic year?

[a]Full formulation of items is: Commercially oriented/intended for technology transfer; Socially oriented/intended for the betterment of society; International in scope or orientation; Based in one discipline; Multi-/interdisciplinary

Patterns of socially orientated research were also similar across the vast majority of European countries with the exception of Germany where a higher proportion of senior academics (49%) were involved in social research when compared to their junior counterparts (28%).

The majority respondents characterise their research approach as *international;* however, this is stated more frequently by senior academics than by junior staff. Only in Poland and the Netherlands were the differences between the two cohorts on the extent they emphasised international research small.

A *disciplinary emphasis* on research is reported more or less as often as a *multidisciplinary emphasis*. However, there are substantial differences by country in both respects. Whereas the former emphasis is similarly frequent among senior and junior academics, the latter is slightly more often reported by senior academics, most notably in Croatia (84% seniors, 68% juniors) and Portugal (83% vs. 74%).

6.7 Publications and Other Forms of Research Dissemination

Research productivity, in terms of publications and other forms of research dissemination, is a central component of the research function of an academic. This section explores the research productivity in terms of books and papers published, reports written for funded projects, papers presented at academic conferences as well as professional articles published in newspapers and magazines.

Over the most recent 3-year period, senior academics at universities have *authored or co-authored* 0.7 books on average across the European countries surveyed. Equally, they have *edited or co-edited* 0.7 books, and they have written 1.8 *research reports*. The mean number of *articles published in books or journals* during the 3-year period is 8.9, and the *number of papers presented at research conferences* is 8.0. Moreover, 2.0 articles have been written on average for newspapers and magazines. Eighty percent of the academics have published in one form or another, while 20% have not published at all. Professors from Germany and Switzerland report the highest numbers of academic papers published (Table 6.7).

Altogether, a third of professors had published between one and five papers with approximately one fifth reporting that they had been involved in publishing between six and ten academic papers; a quarter of professors had published in excess of ten papers over the 3-year period measured in the survey.

The number of papers presented by professors at academic conferences ranged from a mean of 3.9 in Poland to an average of 13.3 in Austria. Similar to the rates of publications, a fifth of professors report that they have not presented at a conference in the last 3 years with approximately two fifths reporting that they have presented between one and five papers, and one in five reporting that they have presented between six and ten papers; 20% of senior academics report that they have presented at more than ten conferences.

Junior academic staff at universities publish about half as much as senior academics. Junior academics have *authored or co-authored* an average of 0.3 books,

Table 6.7 Mean number of texts over a 3-year period at universities (arithmetic mean, full-time academics)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors												
Books (co-)authored[a]	0.7	0.8	1.2	0.5	0.3	0.5	0.6	0.6	1.1	0.8	1.3	0.5
Books (co-)edited[a]	0.8	0.7	1.1	0.5	0.2	0.6	1.0	0.7	0.6	0.4	1.4	0.5
Articles in books[a]	6.4	11.9	7.5	9.9	5.1	8.4	12.1	10.9	9.5	7.4	9.7	7.8
Project reports[a]	3.2	2.7	1.5	1.8	0.4	1.6	2.8	1.8	1.8	0.8	2.8	1.6
Conference papers[a]	13.8	8.6	6.9	9.4	3.9	5.8	8.0	7.8	8.0	5.8	10.8	7.2
Article for magazines[a]	1.5	2.9	2.1	1.6	0.9	2.6	2.8	2.5	2.2	2.1	2.1	1.0
Juniors												
Books (co-) authored[a]	0.4	0.2	0.4	0.2	0.2	0.4	0.3	0.3	0.8	0.2	0.5	0.2
Books (co-) edited[a]	0.3	0.1	0.2	0.2	0.1	0.3	0.2	0.2	0.3	0.1	0.4	0.1
Articles in books[a]	3.6	3.6	3.6	3.8	3.9	6.9	5.6	4.0	7.2	3.1	4.4	4.1
Project reports[a]	2.2	1.4	0.4	1.4	0.3	1.1	1.6	1.0	1.4	0.6	1.4	0.8
Conference papers[a]	7.1	3.7	4.1	5.2	3.0	4.9	5.5	3.9	6.8	3.3	6.6	4.0
Article for magazines[a]	0.6	0.7	1.0	0.8	0.8	1.5	1.2	0.9	1.4	0.8	1.0	0.5

Question D4: How many of the following scholarly contributions have you completed in the past 3 years?

[a]Full formulation of the items: Scholarly books you authored or co-authored; scholarly books you edited or co-edited; articles published in an academic book or journal; research report/monograph written for a funded project; paper presented at a scholarly conference; professional article written for a newspaper or magazine

edited or co-edited 0.2 books and written, on average, 1.1 *research reports* in the last 3 years. The average *number of articles published in books or journals* is 4.5; the *number of papers* presented is 4.8 and the *number of articles in newspapers and magazines* 0.9. Overall, approximately 70% of junior academics have published one or more academic papers, whereas 44% of junior academic staff have published between 1 and 5 papers, 15% between 6 and 10 academic publications, and a tenth more than 10 publications in a 3-year period. There are variations between countries in the number of articles published by junior academic staff with averages ranging from 3.0 in Austria and 3.1 in Norway to 6.9 in the Netherlands and 7.2 in Italy.

6.8 The Research Activities of Academics at Other Institutions of Higher Education

The majority of European countries participating in the 12-country survey have binary higher education systems. Generally, these systems consist of universities and – depending on the country differently named – other higher education institutions. Most of the latter institutions principally focus on the applied and practical sciences. For example, Austria, Germany, the Netherlands and Switzerland have a

Table 6.8 Weekly hours spent on research at universities and other higher education institutions (arithmetic mean, full-time academics)

	2010				2007/2008				
	CH	IE	PL	NL	DE	FI	NO	PT	UK
Universities									
When classes are in session	24.5	14.9	16.1	16.0	17.3	18.4	14.7	13.8	13.2
When classes are not in session	30.7	24.5	22.4	25.3	23.1	26.4	19.0	23.7	23.4
Other institutions of HE									
When classes are in session	11.2	8.1	14.4	6.5	8.4	5.8	13.0	10.6	10.7
When classes are not in session	17.5	13.1	19.1	8.6	13.5	8.3	16.8	18.6	13.4

Question B1: as in Table 6.4

Fachhochschule or *Hogeschool* sector (universities of applied sciences), Ireland's system includes institutes of technology, and Croatia, Finland and Poland have a polytechnic sector. In most countries these 'other' higher education institutions do not award doctoral degrees. In this section, academics at other types of higher education institutions are compared to those at universities regarding a select number of themes discussed hitherto, whereby, again, only full-time employed academics are compared. In contrast to the preceding sections, no distinction is made in most cases between senior and junior academics; rather the emphasis is on the comparison of the two institutional types.

6.8.1 Time Spent on Research

Overall, academics at other institutions spend 10 h per week on research when classes are in session compared to 17 h on the part of academics at universities. In Switzerland and Finland, the former spend approximately 13 h less than their counterparts at universities; the respective difference is also relatively high in Ireland, Germany and the Netherlands. In contrast, as outlined in Table 6.8, this difference is smaller in Poland (less than 2 h) as well as in Norway, Portugal and the UK.

Academics at other types of higher education institution spend on average 14 h per week on research when classes are not in session, i.e. only 4 h more than during the period, when classes are in session. In contrast, academics at universities spend about 11 h more on research when classes were not in session; this difference is greater in the university sector than in other higher education institutions. Altogether, academics at other higher education institutions spend, on average, approximately 14 h per week and academics in the university sector 24 h per week on research when classes are not in session. The discrepancy of the hours spent on research, when classes are not in session, between the two institutional types is most evident in Finland, the Netherlands, Switzerland, Ireland, Germany and the UK, while relatively small differences are reported in Poland and Portugal.

Table 6.9 Research emphasis at universities and other institutions of higher education (percent, full-time academics)

	2010				2007/2008				
	CH	IE	PL	NL	DE	FI	NO	PT	UK
Universities									
Basic/theoretical[a]	58	55	62	67	62	63	70	43	59
Applied/practical	51	61	56	56	68	62	59	72	66
Commercial	13	14	18	15	17	17	13	18	15
Social	30	50	29	38	34	32	31	46	44
International	68	72	42	81	59	64	70	61	67
One discipline	32	29	45	52	34	39	62	18	41
Multidisciplinary	62	62	58	67	64	58	57	77	63
Other HEIs									
Basic/theoretical	29	35	55	29	29	26	64	43	20
Applied/practical	83	69	59	93	95	82	64	63	89
Commercial	45	25	19	17	47	23	12	17	47
Social	35	42	41	66	34	41	18	44	40
International	48	47	35	41	43	43	71	45	42
One discipline	31	30	48	49	47	44	70	18	46
Multidisciplinary	56	48	57	69	56	49	55	70	58

Question D2: How would you characterise the emphasis of your primary research this (or the previous) academic year?
[a]Formulation cp. Table 6.6

6.8.2 *Research Emphasis*

As one might expect, academics at other higher education institutions differ most strikingly from those at universities in the emphasis placed on applied and practical research. The emphasis on applied and practical research among other institutions of higher education ranges from 63% in Portugal to 95% in Germany compared to the range within the university sector (51% in Switzerland to 72% in Portugal). The largest differences in research emphasis are reported in the Netherlands (90% at other institutions of higher education vs. 56% at universities) and in Switzerland (83% vs. 51%); in Portugal, in contrast, there are no differences on the applied and practical emphasis between the two institutional types (Table 6.9).

Academics at other institutions of higher education also report a greater emphasis on commercially orientated research than those working in the university sector. Country averages range from 17% in the Netherlands and Portugal to 47% in Germany and the UK as compared to 13% in Switzerland and Norway to 18% in Poland and Portugal among academics at universities. The most substantial differences are evident in Switzerland (45% at other institutions of higher education vs. 13% at universities), the United Kingdom (47% vs. 15%) and Germany (47% vs. 17%).

It was identified that academics at other institutions do not differ as much from their colleagues at universities as one might expect in emphasising basic and theoretical research. The respective proportion is, on average, only 6% lower at other institutions of higher education with highest scores in Norway (64%), Poland (55%) and Portugal (43%).

Table 6.10 Mean number of texts over a 3-year period at universities and other higher education institutions (arithmetic mean, full-time academics)

	2010				2007/2008				
	CH	IE	PL	NL	DE	FI	NO	PT	UK
Universities									
Books (co-)authored[a]	0.5	0.3	0.2	0.5	0.5	0.4	0.6	0.8	0.4
Books (co-) edited[a]	0.4	0.3	0.2	0.6	0.6	0.4	0.3	0.6	0.4
Articles in books[a]	8.6	7.1	4.5	10.8	10.0	6.2	6.0	6.5	6.5
Project reports[a]	2.1	1.7	0.4	1.7	2.3	1.2	0.8	2.0	1.1
Conference papers[a]	6.9	7.8	3.4	7.5	7.9	5.0	5.1	8.1	6.2
Article for magazines[a]	1.4	1.2	0.9	2.1	2.1	1.4	1.7	1.5	0.8
Other HEIs									
Books (co-)authored[a]	0.5	0.2	0.3	0.2	0.4	0.3	0.6	0.5	0.1
Books (co-) edited[a]	0.3	0.1	0.2	0.1	0.4	0.1	0.7	0.5	0.2
Articles in books[a]	3.8	2.4	1.1	1.1	4.0	1.3	5.8	3.6	6.6
Project reports[a]	2.2	0.8	0.3	0.3	1.4	1.4	0.4	1.2	2.9
Conference papers[a]	3.2	2.9	3.3	0.9	2.6	1.4	3.8	5.7	5.6
Article for magazines[a]	1.9	0.7	0.9	1.2	1.8	1.1	1.0	0.9	1.4

Question D4: as in Table 6.7
[a]Formulations as in Table 6.7

Comparisons were also made between the two sectors on the extent to which research was internationally orientated. Generally, a higher proportion of academics in the university sector report that there is an international emphasis to their research when compared with other institutions of higher education. Large differences in the proportions reporting an international emphasis to their research were noted in Switzerland, Ireland and the Netherlands. The exception of this trend is reported in Norway where academics in the university sector (70%) state a similar emphasis on the international nature of their research compared to academics in the other institutions of higher education (71%).

Academics at both institutional types report a disciplinary orientation of research to the same extent. In contrast, academics at other institutions of higher education emphasise multidisciplinary involvement slightly less often than academics at universities. The largest difference is noted in Ireland (48% other institutions vs. 62% universities).

6.8.3 Research Productivity

Academics at other institutions of higher education publish less than half as many articles in books and journals as compared to academics at universities within a 3-year period (3.3 other institutions vs. 7.4 universities) and present about half as many papers at academic conferences (3.3 vs. 6.4). The differences are smaller with respect to other research outputs: authorship of books (0.3 vs. 0.5), editorship of books (0.3 vs. 0.4), research reports (1.2 vs. 1.5) and articles in newspapers and magazines (1.1 vs. 1.5) (see Table 6.10).

Table 6.11 Mean number of texts over a 3-year period at other higher education institutions (arithmetic mean, full-time academics)

	2010				2007/2008				
	CH	IE	PL	NL	DE	FI	NO	PT	UK
Seniors									
Books (co-)authored[a]	0.7	0.6	0.4	0.2	0.5	0.4	0.7	0.6	0.2
Books (co-) edited[a]	0.4	0.2	0.2	0.1	0.4	0.3	0.1	1.5	0.4
Articles in books[a]	5.3	5.3	4.3	1.3	4.3	1.6	7.0	7.3	9.6
Project reports[a]	2.3	1.0	0.3	0.4	1.5	1.5	0.4	2.8	4.7
Conference papers[a]	4.0	3.7	3.4	1.0	2.7	1.4	4.3	10.6	7.1
Article for magazines[a]	2.9	1.0	0.8	1.2	1.8	1.2	1.2	3.0	1.1
Juniors									
Books (co-) authored[a]	0.4	0.1	0.2	0.1	0.2	0.3	0.2	0.4	0.1
Books (co-) edited[a]	0.1	0.1	0.1	1.0	0.2	0.1	0.0	0.4	0.0
Articles in books[a]	2.6	1.6	4.0	0.6	3.6	1.1	3.1	3.0	3.9
Project reports[a]	2.5	0.7	0.4	0.1	1.4	0.7	0.3	0.9	0.9
Conference papers[a]	2.1	2.6	3.1	1.6	3.6	1.1	2.4	4.9	4.0
Article for magazines[a]	1.0	0.6	1.0	1.2	0.7	1.0	0.6	0.6	0.9

Question D4: as in Table 6.7
[a]Formulations as in Table 6.7

As regards articles in books and journals, the largest difference was reported between the two institutional types in the Netherlands (1.1 other institutions vs. 10.8 universities); large differences in publication rates between the two institution types were also noted in Ireland, Germany and Finland, while relatively small differences were reported in Norway and the UK. As regards papers presented at conferences, the most substantial difference was again noted in the Netherlands (0.9 vs. 7.5). In contrast, conference papers are most frequently presented by academics working in other higher education institutions in Portugal (5.7) and the UK (5.6).

6.8.4 Research Productivity of Senior and Junior Academics

Research outputs vary, as shown above, substantially by the academics' status: senior academics publish substantially more on average than junior academics. Therefore, Table 6.11 is provided to show the respective differences between senior academics and junior academics at other institutions of higher education. In comparing the findings of Table 6.11 to those in Table 6.7 for those nine countries, where a distinction between a university sectors and a sector of higher education institutions is made, we can establish the differences of academic productivity between senior and junior academics at other higher education institutions and universities.

In the respective nine countries, senior academics at other higher education institutions publish fewer articles in books and journals (5.1 vs. 9.2) and conference papers (4.2 vs. 7.5) within a 3-year period when compared to senior academics at universities. As regards other outputs, there are smaller differences: 0.5 vs. 0.7 in authorship of books, 0.4 vs. 0.7 in editorship of books, 1.7 vs. 1.8 in writing research reports and 1.6 vs. 2.0 in writing articles for newspapers and magazines.

Junior academics at other institutions of higher education also publish less than junior academics at universities, but this difference is slightly smaller than in the case of senior academics. In the respective nine countries surveyed, junior academics at other institutions publish on average over a 3-year period 2.6 articles in books and journals as compared to 4.4 on the part of junior academics at universities. The respective figures for conference papers are 2.8 vs. 4.5, and the differences are very small as regards authorship of books (0.2 vs. 0.3), research reports (0.9 vs. 1.1) and articles in newspapers and magazines (0.8 vs. 0.9). The number of books published (0.2) does not differ between junior academics within the two institutional types.

6.9 Predictors of Research Productivity

This section aims at identifying factors associated with research productivity by academics in each of the 12 European countries surveyed. Research productivity has been defined as 'the totality of research performed by academics in universities and related contexts within a given time period' (Print and Hattie 1997: 454). A number of measures of research performance and productivity have been identified including research grants achieved, number of peer-reviewed papers and book chapters published, refereed conference presentations, media outputs, postgraduate research degrees supervised to completion and editorships or editorial board membership of recognised journals (ibid.; Porter and Umbach 2001; Kaya and Weber 2003). Recently, other outputs have been considered such as creative works, exhibitions and films (Smeby and Try 2005). However, the primary measures of academics' research productivity remain the number of publications in peer-reviewed journals and book chapters completed.

Research productivity in this analysis, similar to a number of previous studies (Teodorescu 2000; Porter and Umbach 2001; Lee and Bozeman 2005; Shin and Cummings 2010), has been measured by a composite variable composing of the average number of books authored/co-authored, edited/co-edited and articles published in the 3 years prior to the survey.[1] Based on previous research (Teodorescu 2000; Shin and Cummings 2010), and the emphasis of the survey, separate multiple

[1] This composite variable was log transformed to approximate a normal distribution.

regression models were conducted to determine the linear combination of variables that best predict publication outputs for academics in each of the 12 European countries surveyed. Variables associated with research productivity have been entered in three blocks: (1) demographic variables, (2) academic variables and (3) institutional variables. Demographic variables included age and gender, whereas academic variables measured academics' workload (time spent on teaching, administration and research), time working in higher education, tenure, preference for teaching or research and the extent to which they collaborate on research. Institutional variables measured job satisfaction, managerial support and the importance of the discipline and institution. The results are presented below under each of these three headings.

6.9.1 Demographic Variables

The demographic variables age and gender, when included in the model with academic and institutional variables, were found to have little or no relationship with publication outcomes with the exception of Germany, Italy, Portugal and Switzerland (see Table 6.12). *Age* is a strong predictor for publication productivity in Germany and Switzerland and to a lesser extent in Portugal; the older the respondent, the greater their publication rates. Both in Portugal and Switzerland, age and holding senior academic positions are also associated with publication outputs. Although findings from previous studies are mixed, the overall pattern, as identified in this analysis, is that age is generally not a predictor of research productivity. For example, Teodorescu (2000) in a study of the academic profession in ten countries only found a correlation between age and publication outputs in the USA.

Similarly, *gender* is found not to be a strong predictor for productivity in the majority of countries surveyed. Exceptions are Italy and Switzerland where being male is linked with high publication rates. Although statistically significant, gender is, however, a relatively weak predictor in each of these countries. Contrary to the view widely held that gender (being male) is a predictor of publication outputs, this analysis finds that this is moderated by other factors including research collaboration, stating a preference for research over teaching and involvement in the wider research community. This holds true specifically for Ireland and the UK where gender (male) has been initially identified as a factor in publication rates however has been moderated when individual academic variables such as a preference for research over teaching and involvement with the wider research community have been added to the model. Various studies are supportive of the changing trends in relation to gender and publication and counter the argument that women publish less than men. A recent study (Lee and Bozeman 2005) reports that in the early to mid stages of academic careers in science, men have a higher productivity rates; however, this reverses in the mid to later stages of career. Lee and Bozeman (2005) also have concluded that, overall, gender is not a significant predictor of publication rates.

Table 6.12 14 Linear multiple regression analysis for variables predicting research publications[a] of full-time senior and junior academics at universities

	AT	HR	FI	DE	IE	IT	NL	NO	PT	PL	CH	UK
Variable	β	β	β	β	β	β	β	β	β	β	β	β
Demographic												
Age				.28						.12	.43	
Gender						−.08					−.12	
Academic												
Years working in higher education									.17		.20	
Academic rank										.13	.16	
Years working at current rank										.12		
Tenure					−.14							
Time spent on teaching												
Time spent on research								.09	.06	.09		.12
Time spent on administration												
Teaching – undergraduate						−.38						
Teaching – graduate						−.32						
Research collaboration – national				−.14		−.16						
Research collaboration – international		−.15				−.10		−.12		−.18	−.13	−.16
Research involvement	−.23	−.35	−.31	−.24	−.21	−.21	−.40	−.34	−.13	−.30	−.34	−.26
Focus of interest – teaching/research				.11	.18	.07		.16	.08	.18		.21
Job satisfaction			−.11						−.10			
Institutional												
Work environment					−.15				−.09			
Rating of the institution										−.14		
Managerial support										−.12		
Institutional research funding												
Model statistics												
Adjusted R square	0.10	0.31	0.33	0.31	0.29	0.20	0.24	0.35	0.06	0.36	0.50	0.39
F – statistic	10.57***	4.41***	7.54***	9.58***	5.85***	9.09***	3.92***	10.10***	6.60***	10.43***	10.37***	11.68***

*Only statistically significant coefficients are displayed; ***Significant at $p < 0.001$ level

[a]Dependent variable – Research publications were measured by a composite variable composing of the average number of books authored/co-authored, edited/co-edited and articles published in the 3 years prior to the CAP survey. This composite variable was log transformed to approximate a normal distribution

6.9.2 Academic Variables

Academic predictors identified as being positively related to higher publication outputs include *length of time working in higher education* (Poland and Switzerland), *holding a senior academic rank* (Portugal and Switzerland), *years working at current rank* (Portugal) and *holding a tenured position* (Ireland). However, as in other studies, rank is not identified as a particularly strong predictor of productivity. As Teodorescu (2000) highlights, academics – regardless of rank – appear to be consistent in their outputs throughout their academic lives.

In addition, *the amount of time spent on teaching and administration* has not been found to be a predictor of publication productivity; however, *time spent on research* is positively associated with higher publication rates in Norway, Portugal, Poland and the UK. The number of undergraduate and graduate courses taught has also been identified as not being a determinant of publication productivity, except for Italy, where an increase in the number of courses taught is negatively correlated with publication outputs.

The strongest *academic determinants* of publication outputs identified in the analysis include *national and international research collaboration*, a stated *preference for research over teaching* and *involvement in the wider research community*. *International collaboration* has been identified as a predictor for higher publication rates in Croatia, Italy, Norway, Poland, Switzerland and the UK with *national collaboration* predicting higher publication productivity in Germany and Italy. A stated preference for research over teaching is also a predictor for increased output in seven countries (Germany, Ireland, Italy, Norway, Portugal, Poland and the UK). Involvement in the research community[2] is the only predictor evident across all countries. It is the strongest predictor for publication productivity in eight countries (Austria, Croatia, Finland, Ireland, Netherlands, Norway, Portugal and the UK).

Job satisfaction as a predictor of publication outputs has been identified in only two countries, Finland and Poland, where higher satisfaction is associated with higher publication outputs. Few studies have measured this variable as a predictor of publication outputs and those that have examined the relationship between job satisfaction and publication rates have also found no correlation (Lee and Bozeman 2005). However, as Lee and Bozeman (2005) argue, this may be due to the way the construct job satisfaction is measured.

6.9.3 Institutional Factors

Institutional factors were found to have very little impact on research productivity. Only in Ireland, Poland and Portugal institutional factors are significant predictors and even then account for very little in the overall variance of the model in each of

[2] Measured as an additive index of three variables: *peer reviewing, membership of scientific committees and editorial positions* (lower scores indicate greater involvement, higher scores indicate lower involvement).

these countries. In particular, *satisfaction with the work environment*[3] is a predictor of research productivity in Ireland and Portugal. In Poland, identifying high *rating of the institution*[4] and an environment with strong *managerial support*[5] turn out to be predictive of higher publication outputs. Satisfaction with the *research funding*[6] provided by respondents' institutions does not show any prediction in this model. This may be due to the decreasing levels of internal research funding available to researchers and the increasing pressure on academics to acquire funding for research from external resources (Leisyte et al. 2009). The relatively low impact of institutional variables on research productivity is also supported in previous studies (Teodorescu 2000).

6.9.4 Variance Explained

The regression models for the 12 countries have various common predictors as well as indicators that are unique to a particular country. As often in regression analyses, the causal direction is not absolutely clear for certain variables, e.g. involvement in the research community, and there might also be effects in the other direction, as high publication rates may promote the invitation for peer reviewing, memberships and editorial positions.

The predictive power of the models also differs ranging from 6% of the variance explained for Poland to 50% variance for Switzerland. The total average variance is approximately 30%, which is similar to the coefficients identified in Teodorescu's (2000) model for ten countries that participated in Carnegie study (Australia, Brazil, Chile, Hong Kong, Israel, Japan, Korea, Mexico, the UK and the USA). The predictive utility of the variables varies according to the country surveyed; however, there were consistencies across the data. Research collaboration, a stated preference for research over teaching and involvement in the research community are identified as the principal predictors of research productivity across the majority of countries surveyed.

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[3] Measured as an additive index of variables evaluating satisfaction with the work environment: *laboratories, research equipment, computer facilities, library facilities, office space, secretarial support, telecommunications, research support staff* (lower scores indicate greater satisfaction, higher scores indicate lower satisfaction).

[4] Measured as additive index of variables rating the institution: *strong emphasis on the institution's mission, good communication, top-down management style* (reverse coded), *collegiality, strong performance orientation, cumbersome administration* (reverse coded), *supportive attitude of administration towards teaching/research* (lower scores indicate higher ratings, higher scores indicate lower ratings).

[5] Measured as additive index of variables evaluating managerial support: *administrators are providing competent leadership, I am kept informed about what is going on at this institution, lack of faculty involvement is a real problem* (reverse coded), *the administration supports academic freedom* (lower scores indicate greater managerial support, higher scores indicate less managerial support).

[6] Research funding: Scale from 1 = excellent to 5 = poor.

6.10 Conclusion

Research is a central component of the work of the academic profession; however, the academic profession is faced with various challenges that potentially impact on autonomy and academic freedom as well as on the types of research undertaken. Academics are now required to be accountable and make explicit their research work including how this work is funded, conducted and disseminated. This chapter has analysed the research work of academics in 12 European countries. It identified a number of similarities across countries and rank in academics' research activities as well as highlighting that there is considerable diversity in roles and functions across the European university sector. In this section, the findings, including the outcomes from the regression model that identified factors related to research productivity, are summarised and discussed.

6.10.1 Research Functions of Academics at Universities

There is diversity in how academics perceive the conditions associated with research work. In response to the question about potential influences of both internal and external stakeholders, the majority of academics surveyed state that they do not perceive that they are restricted in publishing results from publically or privately funded research. In contrast, the majority of senior academics and junior academics in Austria and senior academics in Germany note that restrictions on the publication of results from publically funded research have increased since their first appointment to the university sector. Respondents in both Austria and Germany also report some restrictions on publishing findings from privately funded research, although this is emphasised less so than restrictions on publishing findings from publically funded research.

Most academics across the countries surveyed note growing pressure to acquire increased research funding from external sources; this is particularly the case in Austria, Ireland, the Netherlands, Germany and the UK and is predominantly an issue for senior academics. However, junior academics also identify this as an issue, most notably in Austria, the Netherlands and Poland. Most respondents agree, particularly in Italy, that research funding should be targeted towards the most productive researchers; however, there are exceptions, most notably senior academics in the Netherlands and the UK disagree.

Pressures to increase research productivity and produce results that are useful and applicable have been identified by the majority of respondents across the countries surveyed to be a threat to the quality of research. Both senior and junior academics in Austria, Croatia, Finland, the Netherlands, Norway and the UK perceive this to be an issue that impacted on the conditions of their research work, while only a minority state this among senior and junior academics in Portugal and junior academics in Finland.

The majority of academics across the European universities sector are involved in the various processes of research. More than half of both senior and junior academics in almost all countries – except for Poland – are active in preparing and conducting research projects. In several countries, Switzerland, Norway and, in particular, Germany, the responsibility for preparing research projects is more likely to be undertaken by junior academics. Finland is the only country where senior staff are proportionally more likely to prepare research projects when compared to their junior counterparts. Junior academics are also more likely to conduct research than were senior academics. The research activity in which the highest proportion of both senior and junior academics are involved is related to the writing of research papers.

A higher proportion of senior academics than junior staff are active in various aspects of the research process including writing research proposals, supervising a research team, managing research budgets and contracts, purchasing research supplies and technology transfer. Although relatively low compared to other research activities, technology transfer was generally the remit of senior academics. The exception is Finland; not only is the proportion of senior academics involved in technology transfer in Finland higher than other countries, it is also a component of the role of junior academics.

External functions of research coordination are also taken over by seniors more frequently than by juniors. About three quarters of university professors are involved in peer review processes – this is especially extensive in Austria and Ireland. Membership of scientific committees and editorship positions is also more frequent among senior academics.

Although senior academics play a central role in managing research and preparing proposals for research funding, junior academics, on average, spend slightly more time on research than their senior counterparts when classes are both in and out of session. Finally, levels of national and international research collaboration are high among European academics, especially among those in senior ranks. The frequency of national collaboration is highest in Croatia and Italy, whereas the frequency of international collaboration is particularly high in Switzerland, Austria and Ireland. Senior academics are also highly involved in research with an international focus; this is particularly the case in Ireland, Finland, Switzerland and Italy.

6.10.2 Research of Academics at Other Institutions of Higher Education

In 9 of the 12 European countries surveyed, other institutions of higher education can be viewed as a separate sector of the higher education system. On average, academics at other higher education institutions report that they spend 10 h per week on research when classes are in session and 4 h more, i.e. 14 h, when classes are not in session. In comparison, academics at universities spend 16 h on research, when

classes are in session, and 24 h, when classes are not in session. Thus, the lesser involvement of the former in research is only in part due to the higher teaching load while classes are in session; rather, to lesser extent, they opt to be involved in research outside the lecture period. The difference in the time spent on research is most pronounced between academics of the two types of higher education systems in Switzerland, Ireland, the Netherlands, Germany, Finland and the UK.

As one might expect, the customary research approaches at other institutions of higher education differ from those at universities. In all countries surveyed, with the exception of Portugal, the emphasis on applied and practical research is higher at the former institutions. The greatest emphasis on applied and practical research is visible at *Fachhochschulen* and *Hogeschoolen,* respectively, in Germany, Switzerland and the Netherlands. There is also a greater emphasis placed on commercially orientated research in other institutions of higher education; this is most pronounced in Germany and Switzerland.

In addition, the international orientation of research undertaken by academics at other institutions is not as high as at universities. This difference is most pronounced in Switzerland, Ireland and the Netherlands; in contrast, no such differences were identified between the two systems in Norway.

Academics at other institutions of higher education publish less than half as many articles in books and journals and present less than half as many articles at conferences as academics at universities. Altogether, about a third of academics at other institutions of higher education report that they have not published at all in the preceding 3 years as compared to approximately a fifth of academics in the university sector.

6.10.3 Predictors of Research Productivity

Factors associated with research productivity are identified as being multidimensional and, in part, country specific. In the country-specific regression models, the strongest predictors of research productivity are identified as individual academic factors, and these accounted for the greatest variance in each of the three blocks of variables evaluated (demographic, individual academic and institutional). The variables reported as consistent predictors of publication are collaboration and research involvement. Research involvement – measured as membership of scientific committees, acting as a peer reviewer and editorships – is a predictor across all 12 countries surveyed.

Collaboration at both national and international levels has long been identified as a factor in research productivity, and European academics report high levels of national and, in particular, international collaboration. The opportunity to express and communicate ideas with colleagues, as found in this analysis, facilitates the generation of ideas that are subsequently communicated to the wider academic community through publication (Fox 1983). A number of studies have also identified collaboration as a predictor of publishing productivity (Teodorescu 2000; Lee and

Bozeman 2005; Abramo et al. 2009; Shin and Cummings 2010), with collaboration at international level being a stronger predictor than that at national level. Although collaboration is identified as a strong predictor in this study, it is a measure that can be influenced by the types of collaboration, the number of collaborators and the extent to which collaboration occurs. At a European level, collaboration is being driven by a number of factors including the availability of Europe-wide research grants and EU policy directives (Commission of the European Communities 2007). The findings from this analysis add to the emerging evidence that collaboration leads to an increase in publication outputs; as Abramo et al. (2009: 158) states: 'If the single determinants of productivity are considered, scientific collaboration is among those universally recognised as exerting a significant influence on the performance of individual researchers and institutions, in terms of both effectiveness and efficiency.'

Involvement in the research community and the development of collaborative working relationships both nationally and internationally were also found to be key factors in predicting publication outputs of academics working at European universities.

Junior academics in all European countries publish substantially less than senior academics. The grade of faculty and tenure has previously been associated with higher levels of research output; generally, the higher the rank of the academic, the greater their productivity. Teodorescu (2000) previously identified senior academic rank as a predictor of research productivity in Australia and the UK. This finding is based on the premise that faculty at higher grades have achieved tenure as a consequence of their high levels of research productivity (Porter and Umbach 2001). However, in the regression model, academic rank is identified as a predictor of publication rates in only two countries, Poland and Switzerland. The model developed in this chapter shows that several other factors have a moderating effect on rank as a predictor of research outputs.

Individual commitment to research is a predominant factor in determining publication outputs across a number of countries. Although it is associated with a number of other variables, it appears a strong motivation towards research results in increased production of articles and papers. Preference for research over teaching is a strong predictor in seven of the countries surveyed (Germany, Ireland, Italy, Norway, Poland, Portugal and the UK). A number of previous studies have also identified a stated preference for research over teaching as a determinant of publication productivity (Porter and Umbach 2001; Shin and Cummings 2010). Time spent on research is also a factor in determining research productivity; a finding also found in correlates of research outputs in South Korea (Shin and Cummings 2010).

The relationship between teaching workloads and research productivity has been previously explored in the research literature, but to a somewhat lesser extent than other explanatory variables (Porter and Umbach 2001; Marsh and Hattie 2002). In general, it has been found that there is a negative relationship between teaching hours and research productivity. Porter and Umbach (2001) explored teaching load from the perspective of undergraduate and graduate teaching loads and found that faculty with greater undergraduate teaching loads had less research productivity. However,

in this analysis teaching or administrative workloads are not found to be predictors of research productivity across any of the 12 countries surveyed and adds to the emerging evidence that these workloads do not necessarily impact negatively on publication outputs (Teodorescu 2000; Shin and Cummings 2010). In the development of a model, similar to the one used in this study, Shin and Cummings (2010) also identified that the number of hours an academic was required to teach had a zero-order correlation with research productivity. In addition, the number of courses taught – at undergraduate or graduate level – is not associated with publication productivity with the exception of Italy where the number of courses taught is negatively linked with publication rates. At the other end of the scale, time spent on research is positively associated with publication outputs in Norway, Poland, Portugal and the UK.

Institutional variables account for relatively small variance in research productivity. Only three countries identify institutional variables as predictors of research productivity: Ireland, Poland and Portugal. At an institutional level, Shin and Cummings (2010) have reported that a supportive attitude of management and administration and the mission and orientation of the institution are predictors of research publication; however, individual academic variables have been identified as having a greater impact on research productivity than that explained by institutional variables.

Demographic variables (gender and age), tenure or number of years in higher education are, with some exceptions, generally not found to influence research productivity. Previous studies have also reported mixed findings regarding the relationships with these variables and research productivity. For example, Teodorescu (2000) has reported that gender was not associated with research productivity, except in the UK where it was identified as having an indirect effect on output. In relation to tenure, which was found to be a predictor of increased productivity in Ireland, Teodorescu (2000) concluded that productivity early in an academic's career tends to continue as their career progresses. Research productivity has been associated with age (Fox 1983) and years of academic experience (Teodorescu 2000). However, generally, as in this analysis, it has been found that there is a weak correlation between age and publication rates.

In conclusion, although the extent of research involvement and research productivity is country specific, it is evident that research is a central component of the work of the vast majority of academics whether they are at junior or senior levels. Research productivity is relatively high across all the countries surveyed; however, a substantial minority of academics report that they did not publish nor are they involved in research, and the reason for these 'absences' (Brew and Boud 2009: 193) from research requires further investigation. One consistent finding is the levels of research collaboration that academics are involved in at national and international levels. The theme on collaboration is evident in the extent that academics report involvement in the wider research community; specifically, the majority of academics surveyed report that they are involved in the peer review process. Academic freedom is evident in that the vast majority of academics report that they are not restricted in the publication of results from either publically or privately funded research. The greatest

pressure reported by academics in all countries is the pressure to raise external funds. This is perceived by both junior and senior academics to have increased since their first appointment. In addition, there is also a perception across the majority of countries surveyed that the quality of research is being threatened due to the pressure to increase research productivity and to produce useful results. Finally, predictors of research productivity are found to be multifactorial and, to some extent, country specific. However, there are a number of factors identified that predict research productivity across the majority of countries surveyed. These include a stated preference for research over teaching, involvement in the research community through service on national/international scientific committees, peer reviewing and working collaboratively with colleagues nationally and internationally. In this chapter, we have also shown that there are a number of challenges facing academics working in the European higher education system, in particular, the challenges facing academics to develop collaborative working relationships across Europe and to ensure that the pressures to attract research funding and publish do not negatively impact on the quality of research produced.

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Chapter 7
The Academic Profession and the Role of the Service Function

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7.1 Introduction

Teaching and research are traditionally regarded as two academic pillars and are considered to be the most important in the system of academics' advancement. Each has been the focus of numerous studies, as has the nexus between them. Such studies have contributed significantly to our knowledge of the nature of academic activities, their interdependence and faculty workload, and they have influenced various institutional and governmental policy practices. Service activity has been less highlighted in the academic world. Some argue that the value of and commitment to (community) service remain on the margin of reality and academic debate (Star 2007).

There was little comprehensive discussion of the latter thematic area prior to Boyer's book *Scholarship Reconsidered* (1990). He opened the field of an ongoing debate about the notion of 'service' in his insightful call for a scholarship of service. Subsequently, numerous scholars have followed his work (Checkoway 2001; O'Meara 2002; Ostrander 2004; Macfarlane 2005; Harkavy 2006; Greenbank 2006; Karlsson 2007; Ledić 2007; Ćulum and Ledić 2010).

With greater attention to this thematic area in higher education research, it is not surprising to note that 'service' has been subjected to different interpretations. One could argue that they reflect the landscape of higher education and the tremendous challenges it has been going through. Academic debate has proven that there has been little consensus on what 'service' stands for and how to perform (various) service activities. The interpretation of service and the respective cooperative

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outreach activities vary considerably. Shin (2010) is right in discussing the difficulty of deciding whether a specific faculty's activity is a service.

The literature reveals that various and sometimes completely different issues are discussed in the context of service. They include:

1. *Internal services* (which overlap with management and administration, e.g. evaluation)
2. *Technology transfer/innovation/commercial activities* (which overlap with research, plus extension and paid consulting activities)
3. *Civic activities* (which overlap with both teaching and research, e.g. service-learning, community-based action research, community and civic engagement, free consulting services)
4. *Organised service functions of the university* (e.g. university hospitals, various projects with marginalised populations) for the welfare of the community (region).

There is also some confusion among academics. Macfarlane's (2005) study reveals five interpretations of how academics perceive 'service':

- *Administration*, viewed mostly in a negative light with service activities seen as an ever increasing burden on academics
- *Customer service* for students and business organisations
- *Collegial virtue* as a moral obligation to support colleagues in one's institution
- *Civic duty* as doing voluntary work or outreach for the benefit of the local community, though not necessarily connected with scholarly expertise
- *Integrated learning* which connects academic engagement with community-based projects and internships carried out by students, but not academic staff

Despite the growing academic attention it has received, service is still a vaguely defined concept – or scholarly discipline – and its conceptualisation has been an ongoing process. It is still searching for a broader and deeper scientific discourse.

This chapter aims to contribute to the academic debate and offer some reflections on the concept of academic service. It discusses data collected in recent years in 12 European countries. The common questionnaire did not comprise a major section on the service function, but this chapter explores various elements which could be subsumed under the notion of 'service', e.g. services to clients and/or patients, unpaid consulting, academic, public and voluntary services. They were addressed in the questionnaires as themes in their own right, i.e. not subsumed under 'administration', as we often note in the respective analyses (e.g. McInnis 1996, 2000).

In analysing the data from the 12 European countries and highlighting the similarities and differences between senior and junior university academics as well as between academics at other higher education institutions (HEIs), this chapter tackles various themes linked to 'service': academic workload in service activities, the nature of service activities, the interconnection of service with other academic activities, 'service character' in academic teaching and research, academics' views on the scholarship of service and academics' perception of institutional strategies that encourage service activities. Finally, we present a

model that studies the factors associated with the orientation towards service activities in each of the 12 countries.

Bearing in mind that there is no common notion of 'service' among the academics or the researchers involved in the project, challenges inevitably arise. As a consequence of the divergent and fuzzy use of the term, an umbrella term is occasionally used because one does not know what the respondents mean when they respond. Occasionally, varying (or incomplete) specifications are made.

7.2 Academics' Workload: Any Room for Service?

According to the concepts advocating the service function, a well-developed academic is thought to be one who engages in all three domains of academic work – teaching, research and service – and continuously improves this engagement through self-reflection and personal development (Star 2007). The tripartite role of academics in teaching, research and service activities is considered as a cornerstone of conventional assumptions about higher education (Cummings 1998), as well as a common element of an academic practice which is recognised on an international basis (Macfarlane 2011). Achieving the balance between these functions is often the subject of research (Bess 1998; Menges 1999; Bloomgarden and O'Meara 2007; Kogan and Teichler 2007; Locke and Teichler 2007; Macfarlane 2011). The dynamic and changing demands that academics must respond to affect the distribution of their activities and their basic tasks and call for their increasing engagement (Rice et al. 2000; Kogan and Teichler 2007). Various analyses indicate that academics of all scientific disciplines recognise the need for integration and synergy of their tripartite roles in teaching, research and 'serving' the community (Colbeck 1998, 2002; Neumann 1992, 1996).

In response to the question of how much time is spent on various activities, senior academics at universities of the 12 countries spend 17.4 work hours per week when classes are in session on teaching and almost as much on research (15.2 h), while only an average of 3.4 h devoted to various service activities, i.e. less than half as much as on administrative tasks (7.8 h).

As Table 7.1 reveals, German senior academics at universities spend most of their time on service activities (6.8 h per week) when classes are in session, followed by Austrians (6 work hours) – both about 12% of the work time. In contrast, only about 2 h are spent on service activities by academics in the UK and Portugal (1.8 h), and Norway (2.0) and the Netherlands (2.1 h). Junior university academics spend less time on service activities (2.6 h) when classes are in session than senior academics (3.4 h on average of the 12 countries). Again, German junior academics (6.0 h) are most active in this respect, followed by the Austrian juniors (5.2 h), while the lowest proportions are reported by juniors in the UK (1.1 h) and Norway (0.7 h).

Table 7.1 Weekly hours spent on service activities and total work hours while classes are in session (arithmetic mean)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Service												
Seniors at universities	6.0	4.6	2.9	3.0	3.4	2.1	6.8	2.6	3.7	2.0	1.8	1.8
Juniors at universities	5.2	3.2	1.5	2.0	3.0	1.6	6.0	1.8	3.7	0.7	1.8	1.1
Seniors at HEIs		4.1		1.8	3.3	3.2	2.8	2.5		3.3	1.9	1.7
Juniors at HEIs		3.1		1.8	4.4	2.1	3.1	2.1		0.9	1.4	1.6
Total work hours												
Seniors at universities	49.3	51.8	47.5	50.6	45.8	44.5	55.8	47.2	46.3	42.1	40.9	46.9
Juniors at universities	41.4	42.4	41.8	46.1	44.8	41.9	39.1	40.7	44.3	27.2	41.4	42.0
Seniors at HEIs		44.9		47.1	43.7	37.0	45.4	42.1		37.3	41.2	41.8
Juniors at HEIs		38.0		42.8	43.2	34.3	30.7	39.6		24.6	38.3	36.7

Question B1: Considering all your professional work, how many hours do you spend in a typical week on each of the following activities? – service (services to clients and/or patients, unpaid consulting, public or voluntary services)
For country codes, please see Table 1.1 in Chap. 1

Table 7.2 Weekly hours spent on service activities while classes are not in session (arithmetic mean)

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Service												
Seniors at universities	4.6	4.8	3.3	3.5	4.3	3.2	6.7	2.8	4.0	2.1	2.6	1.9
Juniors at universities	3.3	3.5	1.8	2.4	4.0	1.5	6.6	1.8	3.7	1.0	2.1	1.1
Seniors at HEIs		4.8		2.7	4.5	3.6	4.0	1.9		4.1	1.9	1.7
Juniors at HEIs		4.0		2.1	5.8	2.6	6.0	1.9		2.0	1.4	1.6
Total work hours												
Seniors at universities	45.6	49.4	45.6	48.1	40.5	43.3	51.3	44.7	45.8	46.0	40.9	46.1
Juniors at universities	38.1	42.4	41.5	44.5	42.8	39.6	41.8	38.8	44.1	42.8	41.7	41.1
Seniors at HEIs		43.3		39.8	40.0	34.1	39.3	31.1		44.9	35.3	44.9
Juniors at HEIs		36.4		35.0	39.5	28.0	34.4	23.9		41.9	38.6	39.7

Question B1: as in Table 7.1

The service workload of seniors and juniors at other higher education institutions is somewhat lower than that of their colleagues at universities, as shown in Table 7.2. The respective averages are 2.6 h for senior academics and 2.1 h per week for junior academics. The greatest numbers of hours are reported by seniors in Switzerland (4.1 h on average per week) and Poland and Norway (3.3 h each) and the lowest by those in Portugal (1.9 h), Ireland (1.8 h) and the UK (only 0.9 h). Among juniors, most time is devoted to service activities in Poland (4.4 h) and somewhat less in Germany and Switzerland (3.1 h), while those in the UK (1.2 h), Portugal (1.0 h) and Ireland (0.9 h) are the least engaged in service activities while classes are in session. While differences

in working hours devoted to service among seniors and juniors are small in most countries, Norwegian senior academics at other higher education institutions devote substantially more time on service activities (3.3 h) than juniors (0.9 h per week).

The number of weekly hours spent on service activities varies more strongly when classes are not in session, but the number of hours spent on service activities is similar to when classes are in session (see Table 7.2): 3.6 h (as compared to 3.4 h when classes are in session) on average of the 12 countries among senior academics and 2.7 h (as compared to 2.6 h) among junior university academics. The longest numbers of hours are reported by seniors in – again – Germany (6.7 h), Switzerland (4.8 h) and Austria (4.6 h) and by juniors in Germany (6.6 h), Poland (4.0 h) and Italy (3.7 h). While juniors in Germany and Poland spend more time on service activities when classes are not session, those in Italy spend about the same time on average when classes are and are not in session.

Also, academics at other higher education institutions spend about as much time on service activities when classes are not in session as they do when classes are in session. Seniors spend 4.8 h on average in Switzerland, 4.5 h in Poland, 4.1 h in Norway and 4.0 h in Germany. The highest figures among juniors are reported by respondents from Germany (6.0 h), Poland (5.8 h) and Switzerland (4.0 h per week).

In sum, two results on academics' workload are most striking in this context. First, the time academics spend on service activities is clearly less than the time they spend on administration, when all variables included (country, status and institutional type). Second, academics in Germany, according to status and institutional type, clearly stand out in spending most time on service activities. Altogether, the relatively small amount of time that academics devote to service activities reflects the hierarchy of academic functions rather than their interdependence. The engagement in various service activities remains on the margins of the academic 'holy trinity' of teaching, research and services.

This does not come as a surprise if we look at the available literature. Many authors claim that academics will not become closely involved in service activities if they are not properly rewarded (see Boyer 1990; Braxton et al. 2002; Lynton 1995; O'Meara 2002) and if they do not benefit from institutional and formal importance in terms of their own academic advancement (Bloomgarden and O'Meara 2007; Ledić 2007; Star 2007; Ćulum and Ledić 2010). Moreover, service activities cannot be mapped by standard indicators, which play an increasing role in the new 'performative' (Ball 2003; Skelton 2005) culture of academic life in measuring scientific excellence (see Krücken et al. 2009; Göransson et al. 2009; Ledić 2007; Ćulum and Ledić 2010). 'Service' does not seem to be regarded as something that provides professional credit: "There was a keen awareness among academics that service work suffers both a lack of status, and further, won't get you tenure, promotion or a pay rise" (Macfarlane 2005: 173). As long as new service assignments are simply added to the existing load and they are not properly rewarded (Cummings 2006), one cannot expect academics to invest more of their time in such activities.

7.3 The Nature of Service Activities and Academics' Engagement

Drawing from the recent work on faculty services based on CAP data (Shin 2010), and, to some extent, on Macfarlane's pyramid of five communities and associated service activities academics become engaged in, a division into three areas has been made: (a) being a member of research committees, or engaging as a peer reviewer or editor, or becoming a manager of an academic and professional association stand for academic service; (b) political service covers academics' involvement in politics; (c) community service encompasses academics' engagement in community organisations as well as cooperation with social service agencies.

Tables 7.3 and 7.4 show the proportion of academics involved in various service activities in the most recent academic year. Altogether, it becomes clear that

Table 7.3 Involvement in service activities at universities (percent, multiple responses)

		2010						2008/08					
Service activity		AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Academic service													
Committees/boards[a]	Senior	67	90	41	77	40	64	48	57	66	66	67	47
	Junior	34	54	18	44	19	31	17	22	55	24	39	21
Peer reviewer[b]	Senior	92	95	86	95	81	83	72	84	71	80	84	88
	Junior	64	63	50	74	64	74	37	49	58	48	49	77
Editor[c]	Senior	54	53	49	36	13	38	62	35	15	21	37	36
	Junior	31	15	22	18	7	17	23	14	5	9	16	15
Leaders of associations[d]	Senior	58	47	44	45	34	28	51	56	18	26	37	23
	Junior	32	12	23	30	20	16	28	29	6	11	26	10
Political service													
Involved in politics[e]	Senior	3	13	9	10	9	6	3	5	4	9	13	5
	Junior	5	10	2	7	8	7	3	4	4	6	5	5
Officer/union leader[f]	Senior	2	5	7	3	1	2	1	42	1	8	1	5
	Junior	2	3	6	3	1	1	2	33	1	8	3	4
Community service/engagement													
Community projects[g]	Senior	12	14	19	36	16	16	0	27	15	27	22	23
	Junior	13	21	28	44	21	18	0	23	20	44	25	30
Worked with service agencies[h]	Senior	22	11	6	19	18	9	19	21	10	12	5	15
	Junior	20	12	8	21	20	8	35	16	13	14	6	14

Question A13: During the current academic year, have you done any of the following?
[a]Served as a member of national/international scientific committees/boards/bodies
[b]Served as a peer reviewer (e.g. for journals, research sponsors, institutional evaluations)
[c]Served as an editor of journals/book series
[d]Served as an elected officer or leader in professional/academic associations/organisations
[e]Been closely involved in local, national or international politics
[f]Served as an elected officer or leader of unions
[g]Been a member of a community organisation or participated in community-based projects
[h]Worked with local, national or international social service agencies

Table 7.4 Involvement in service activities at other institutions of higher education (percent, multiple responses)

		2010				2007/2008			
Service activity		CH	IE	PL	NL	DE	FI	NO	PT
Academic service									
Committees/boards[a]	Senior	83	67	23	20	28	27	62	71
	Junior	67	31	19	7	0	8	22	49
Peer reviewer[b]	Senior	56	71	53	26	50	31	83	75
	Junior	35	38	53	5	25	8	41	43
Editor[c]	Senior	27	18	22	10	25	9	24	28
	Junior	20	10	7	8	0	4	0	12
Leaders of associations[d]	Senior	26	47	26	22	46	45	23	36
	Junior	18	26	22	15	18	27	0	30
Political service									
Involved in politics[e]	Senior	12	4	11	6	6	7	3	3
	Junior	15	3	10	1	10	5	10	6
Officer/union leader[f]	Senior	7	9	2	4	3	55	17	0
	Junior	4	13	1	3	0	40	6	6
Community service/engagement									
Community projects[g]	Senior	21	51	25	40	0	45	13	27
	Junior	29	56	21	42	0	22	45	18
Worked with service agencies[h]	Senior	18	20	18	22	34	32	6	4
	Junior	25	24	15	14	58	27	22	8

Question A13: as in Table 7.3
[a-h] See the categories inTable 7.3

many are involved in services related to academic work: some in community services and very few in political services.

The survey suggests noticeable differences by country as regards the types of academic service activities. Peer reviewing is most common in almost all countries (ranging for all respondents from 45% in Portugal to 73% in Austria and Ireland). In Switzerland, the highest proportion of academics is active in scientific committees and boards (65%). Activities as journal and book editors and as leaders of academic associations – less frequent than the two previously discussed ones – are reported most often by respondents in Austria (40 and 39%, respectively). Community service/engagement varies substantially by country. Membership in community organisations and community-based projects is reported by only 12% of all academics in Austria but by 44% in Ireland. A similar share of academics worked with local, national or international service agencies: from only 6% in Portugal and 7% in Croatia to 33% in Germany. Finally, academics allocate least time for political service activities. Between 3% (UK) and 12% (Switzerland) are engaged in local, national or international politics. An even smaller proportion is engaged as elected officers and/or union leaders, with the noticeable exception of Finland (37%).

Table 7.3 shows that university professors are far more often involved in academic services that provide them with power and status, such as research committees, peer reviewing, journal and book editing and the management of academic and professional organisations. However, junior academics at universities in the United Kingdom and the Netherlands are almost as much involved in peer reviewing as senior academics. In contrast, university professors are slightly less involved in political services and much less involved in community service/engagement than junior academics – i.e. in unrecognised service activities. This corresponds to Macfarlane's (2007) findings. Community activities are reported by more than half the junior academics in Ireland and the United Kingdom, while involvement in social service is most often reported by junior academics in Germany (58%). A notable exception, as already mentioned above, is the frequent involvement of both Finnish university professors and junior staff in elected officer/union functions.

Similarly, a clearly higher proportion of senior academics at other higher education institutions is involved in academic service activities than junior academics of this institutional type, while junior academics are slightly more often involved in political service and community services. The latter holds true most strikingly for Norway. However, Table 7.4 shows, in comparison to Table 7.3, a greater variation by country. In Switzerland, both seniors and juniors are three – even four – times more likely to be engaged in research committees (83% of seniors and 67% of juniors) than their colleagues in the Netherlands (20 and 7%), Poland (23 and 19%) and Finland (27 and 8%). A significant proportion of UK juniors (84%) have been engaged as peer reviewers, followed by Portuguese juniors (43%) and those in Norway (41%), while this proportion is very low in the Netherlands (5%) and Finland (8%).

It is interesting to note that more junior academics at other higher education institutions are involved in community services than at universities. Involvement in community organisations and projects is most frequent among Irish (56%) and UK junior staff (54%) at other higher education institutions and least often among the Portuguese colleagues (18%). A similar share can be observed in involvement in social service agencies – from 58% in Germany to 8% in Portugal and the United Kingdom.

As Table 7.5 shows, larger proportions of male than female academics are involved in academic services. This difference is most striking as regards peer review activities (country means of 59 and 36%), while it is only about five percentage points each as regards the other three academic service activities referred to in Table 7.5. Even if we take into account that men are strongly represented among senior academics who are more closely involved in academic service activities, a gender difference is worth noting for review activities. Table 7.5 also shows that male academics are slightly more often involved in political service activities than female academics. It is surprising, though, to note that female academics are not more frequently involved in social service activities than male academics, as recent studies suggested (Abes et al. 2002; Harwood et al. 2005; Ćulum 2010). Several studies suggest that there are 'genuine' gender differences. However, this research has shown somewhat different results.

Table 7.5 Involvement in service activities by female and male academics from both institutional types (percent, multiple responses)

		2010						2007/2008					
Service activity		AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Academic service													
Committees/boards[a]	f	26.5	43.2	16.8	46.5	13.1	14.9	10.5	14.4	44.4	28.4	22.0	23.0
	m	40.4	47.1	21.0	54.5	21.0	27.7	13.6	22.9	55.1	38.2	33.0	23.0
Peer reviewer[b]	f	46.1	31.7	35.6	61.4	34.9	27.9	18.0	27.1	45.0	36.5	25.5	58.1
	m	63.2	48.8	52.8	76.0	48.9	38.8	24.4	38.8	60.3	54.4	38.0	65.3
Editor[c]	f	23.2	12.5	16.8	16.7	6.0	7.8	10.8	8.6	5.1	7.0	8.1	15.0
	m	36.0	18.4	27.8	23.5	7.4	16.4	16.4	13.7	12.0	13.6	13.0	21.1
Leaders of associations[d]	f	24.3	9.1	18.7	33.3	14.5	12.1	16.9	20.0	6.6	10.7	10.0	13.5
	m	34.7	16.3	24.2	32.9	17.7	18.3	16.6	27.3	14.2	15.5	20.2	11.5
Political service													
Involved in politics[e]	f	0.6	1.9	1.3	5.1	1.1	1.8	1.4	24.5	0.0	5.6	0.5	1.3
	m	1.4	3.2	7.2	3.7	0.2	2.3	0.7	26.2	1.1	6.5	1.5	5.8
Officer/union leader[f]	f	1.9	5.9	2.0	4.3	2.9	2.5	1.9	3.2	2.4	4.8	2.1	3.1
	m	4.1	10.3	4.6	7.8	7.5	4.5	1.4	3.1	4.1	5.5	4.8	4.7
Community service/engagement													
Community projects[g]	f	10.0	14.0	22.1	42.7	9.8	21.6		16.9	15.8	26.0	11.3	24.3
	m	9.3	17.0	13.4	38.8	13.4	20.7		16.4	13.1	24.7	15.6	21.3
Worked with service agencies[h]	f	14.5	10.2	6.7	22.0	8.7	12.4	15.2	16.1	8.1	11.0	1.3	10.8
	m	15.8	11.2	3.6	15.7	13.7	10.7	17.3	11.9	9.4	8.1	5.2	10.4

Question A13: as in Table 7.3

[a-h] See the categories in Table 7.3

7.4 The 'Service Character' in Teaching

The scholarship of service is a call for the integration of service activities into regular academic teaching and research activities and for transformation rather than the creation of a new set of roles and activities that would result in an additional workload. Drawing from that perspective, this EUROAC survey measured academics' views on teaching and the 'service character' within it and more particularly the relationship between the three academic pillars.

As Table 7.6 shows, the share of academics who emphasise practically oriented knowledge and skills varies enormously by country. This holds true only for less than half the university academics in Finland (31% of seniors and 48% of juniors), the Netherlands (40 ad 42%) and Poland (44 and 45%) and for more than three quarters in Croatia (79 and 82%), Ireland (75 and 80%), Germany and Portugal (each 75 and 77%). The responses by junior academics are similar in almost all countries to those of the university professors; interestingly, however, a slightly higher proportion of juniors than seniors emphasise practically oriented knowledge and skills. One could assume that juniors are often more closely in contact with students and could thus be more inclined to focus on the acquisition of practical knowledge and skills.

Similarly, the share of academics who incorporate discussions of values and ethics in their courses content varies substantially by country. On the one hand, this is true for more than two-thirds of the respondents at universities in Ireland, Portugal and the UK; on the other, this proportion is exceptionally low in Poland (24% of seniors and 22% of juniors). Again, the responses by university professors and junior academic staff are similar in most countries, whereby – in contrast to the emphasis on practically oriented knowledge – seniors address values slightly more often than juniors.

Table 7.6 Emphasis on practical knowledge and values in teaching (percentage[a])

	2010						2007/08					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Practical knowledge and skills												
Seniors at universities	67	53	79	75	44	40	75	31	54	49	75	69
Juniors at universities	77	58	82	80	45	42	77	48	54	51	77	67
Seniors at HEIs		83		93	48	84	93	79		57	81	
Juniors at HEIs		74		90	47	90	99	80		70	82	
Values and ethics												
Seniors at universities	62		62	68	24	48	57	53	40	45	71	69
Juniors at universities	58		55	74	20	44	36	41	34	36	71	70
Seniors at HEIs				70	33	71	54	53		39	73	
Juniors at HEIs				82	23	62	21	57		48	62	

Question C4: Please indicate your views on the following: Practically oriented knowledge and skills are emphasised in your teaching; you incorporate discussions of values and ethics in your course content

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

7.5 Service Components in Research

It is generally said that research provides both tangible and intangible benefits to the community and can constitute a community service, e.g. in the area of health research (Arcury et al. 1999). The scholarship of service – as put forward by Boyer (1990) – can be viewed as a result of academics' research-community symbiosis. Some academics are more in favour of commercialised service orientation, while others encourage activities based on civic engagement within the community. In this respect, differences in the perception of service between the exact (natural) and social scientists are acknowledged (Adamsone-Fiskovica et al. 2009). The antipodes of commercially oriented and socially oriented research contribute to the connections between university and nonacademic communities. While there is a certain tension between social and economic (commercial) research on the one hand and civic service purposes on the other, both are based on the intention of universities to open themselves, communicate and cooperate more extensively with stakeholders outside the academic community.

The EUROAC survey shows that most academics at both universities and other higher education institutions put emphasis on the application and practicality of their research, even though this is more pronounced among the latter. Only one-sixth of university academics consider their research as commercially oriented and intended for technology transfer; again, the respective proportion of academics at other higher education institutions is somewhat higher (more than one-quarter on average across countries). Finally, about four-tenth of academics at both universities and other higher education institutions rate their research as socially oriented and intended for the welfare of society. Altogether, these research orientations that are relevant for service vary to a lesser extent by country than the teaching orientations discussed above.

Among university academics, emphasis on applied research – surprisingly – is most pronounced in Croatia (81% of seniors and 73% of juniors), followed by Portugal (76 and 69%) and pronounced (slightly more than half each) in Poland, the Netherlands and Switzerland. As Table 7.7 shows, commercial and technology

Table 7.7 Applied, commercial and social emphasis in research at universities (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Applied/practically oriented												
Seniors	61	56	81	58	54	56	67	66	60	57	76	68
Juniors	60	59	73	64	54	57	67	63	62	60	69	64
Commercially oriented/intended for technology transfer												
Seniors	11	13	22	12	18	15	15	16	14	12	22	18
Juniors	14	17	23	15	17	12	18	21	17	15	17	15
Socially oriented												
Seniors	40	37	53	46	28	39	48	33	33	32	50	37
Juniors	38	33	55	52	32	41	26	29	34	29	52	42

Question D2: How would you characterise the emphasis of your primary research this (or the previous) academic year?

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

Table 7.8 Applied, commercial and social emphasis in research at other higher education institutions (percentage[a])

	2010				2007/2008			
	CH	IE	PL	NL	DE	FI	NO	PT
Applied/practically oriented								
Seniors	85	73	50	93	94	89	61	62
Juniors	85	70	62	88	96	80	61	60
Commercially oriented								
Seniors	46	24	18	15	43	32	8	21
Juniors	35	27	19	19	65	25	17	18
Socially oriented								
Seniors	43	42	40	69	37	34	18	47
Juniors	48	43	39	42	25	33	18	47

Question D2: as in Table 7.7

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

transfer orientation varies by country between 11 and 23%. Finally, the social orientation of research ranges from slightly more than half in Croatia and Portugal to less than one-third of academics in Finland, Italy and Norway. In almost all cases, the differences in the responses of junior staff hardly differ from those of university professors. There is one notable exception: substantially more university professors in Germany characterise their research as socially relevant than junior staff (46% as compared to 26%).

Among academics at other higher education institutions, responses by country as regards practical application vary to a similar extent as among university academics, whereby those in Germany underscore this most often (94% of seniors and 96% of juniors) and those in Poland least often (50 and 62%). As Table 7.8 shows, the differences by country are more substantial among academics at other higher education institutions in relation to commercial research orientation, ranging from about half in Germany (43% among seniors and even 65% among juniors) and the United Kingdom (49 and 45%) to only 8% among seniors (17% among juniors) in Norway. The social emphasis varies even more strikingly among the academics at other higher education institutions, with the strongest emphasis in the Netherlands (69% among seniors and 42% among juniors) and the least emphasis in Norway (18% each).

It can be added that the respondents were asked whether they had been involved in technology transfer. The affirmative answers were as follows:

- 18% of university professors on average across countries (notably 29% in Finland and 22% each in Germany and Switzerland) and by somewhat fewer (12%) junior staff (again notably 28% in Finland)
- 21% – only marginally more – senior academics at other higher education institutions (notably 38% in the United Kingdom and 36% in Finland) and also somewhat fewer (14%) junior staff, with the highest proportions again in the United Kingdom (29%), Switzerland (23%) and Finland (20%)

The survey shows that in most countries (apart from Ireland), more university seniors than juniors become involved in technology transfer. Still, the percentage

of academics – regardless of their academic status – remains in the lower third. The least involved are seniors in Poland (10%) and Ireland (12%) and juniors in Norway (7%), Poland, (8%), the UK (8%) and Austria (9%).

Annual competitiveness surveys conducted by the International Institute for Management Development indicate that universities are perceived to be insufficiently responsive to the needs of industry and business, still emphasising academic applications over the practical and commercial applications in their research orientation (IMD 2005).

7.6 Interrelationships Between Academic Activities

The role of various service engagements – as Bortagaray (2009) puts it – is too narrow to blur the boundaries between teaching and research. Greenbank (2006) proposes the integration of teaching, research and service as interconnected scholarly activities. Jongbloed et al. (2008) claim that service activities cannot be separated from traditional teaching and research; theory and practice interact and are not in a traditional hierarchical relationship (where research and theory are considered superior) but are complementary and mutually enriching (see also Rice and Richlin 1993).

The academics of the 12 European countries were asked to state whether their research activities reinforced their teaching and whether their service activities reinforced their teaching.

Reinforcement of teaching by research is noted by most respondents. As Table 7.9 shows, however, the respective proportion varies substantially according to the status of the respondents and the institutional type: 82% of university professors on average across countries, 72% of junior staff at universities, 73% of senior academics and 57% of junior academics at other higher education institutions note a reinforcement

Table 7.9 Perceived reinforcement of teaching by research and service activities (percentages[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
By research activities												
Seniors at universities	84	79	81	92	54	82	86	83	85	86	86	83
Juniors at universities	77	61	68	87	46	82	60	73	78	75	75	73
Seniors at other HEIs		75		81	51	76	74	68		86	76	
Juniors at other HEIs		52		74	45	37	44	42		65	69	
By service activities												
Seniors at universities	48	32	42	66	30	45	37	44	52	69	6	35
Juniors at universities	50	29	35	62	28	33	31	32	45	54	7	33
Seniors at other HEIs		49		72	39	74	56	47		59	6	
Juniors at other HEIs		44		65	29	71	35	39		32	2	

Question C4: Please indicate your views on the following: Your research activities reinforce your teaching; your research activities reinforce your research

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

of teaching by research. The responses are quite similar across countries. Poland, however, is a striking exception where reinforcement is reported by only 54% of the seniors and 46% of the juniors at universities and by 51% of the seniors and 45% of the juniors at other higher education institutions. The same holds true for junior academics at other higher education institutions in the Netherlands (37%), Finland (42%) and Germany (44%).

As one might expect, a substantially lower percentage of academics sees their service activities as reinforcing their teaching. Actually, one could consider the respective proportions as surprisingly high: 42% of university professors on average across countries, 37% of junior staff at universities, 51% of senior academics and 41% of junior academics at other higher education institutions note a reinforcement of teaching by service activities. While university academics note more often a reinforcement of teaching by research, academics at other higher education institutions underscore more often a reinforcement of teaching by service activities than their university colleagues.

The notions of a reinforcing effect of service activities on teaching vary substantially by country. It is often stated by academics at universities in Ireland (66% by seniors and 62% by juniors) and Norway (69 and 54%), seldom in Portugal (6 and 7%) and below average in Poland (30 and 28%) and Switzerland (32 and 29%). Among academics at other higher education institutions, the affirmative responses are most frequent in the Netherlands (74 and 71%) and again in Ireland (72 and 65%), while they are least frequent again in Portugal (6 and 2%) and below average again in Poland (39 and 29%).

7.7 Views on Scholarship: How Does the Scholarship of Service Stand?

The appropriate role of the professoriate has been the topic of many ongoing debates in higher education. As different types of educational institutions have emerged, the focus of scholarly pursuits has evolved. Stephens et al. (2008) claim that higher education institutions and academics have a particularly interesting potential in society with regard to the facilitation of societal responses to the plethora of challenges that communities face worldwide. Ostrander (2004) argues that universities should aim to improve living conditions in their local communities and that academics have a responsibility to improve these by sharing their academic knowledge and expertise. However, for service to be a scholarship, Boyer underlines its coherence with research: ‘Service activities must be tied directly to one’s special field of knowledge and relate to, and flow directly out of, this professional activity. Such service is serious, demanding work, requiring the rigor – and the accountability – traditionally associated with research activities’ (Boyer 1990: 22–23). When theory and practice come together, to paraphrase Boyer, engagement becomes scholarly.

As is evident from the Table 7.10, more than two-thirds of the academics share a favourable stance regarding the application of academic knowledge as an element of

Table 7.10 Academics' views on scholarship of service (percentages[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Scholarship includes the application of academic knowledge in real-life settings												
Seniors at universities	59		75	77	54	41	62	74	57	59	77	69
Juniors at universities	62		74	77	61	42	67	84	64	65	76	65
Seniors at other HEIs				89	63	63	87	92		56	88	
Juniors at other HEIs				84	63	46	84	91		70	80	
Faculty in my discipline have a professional obligation to apply their knowledge to problems in society												
Seniors at universities	60	56	72	63	40	45	61	65	62	50	73	58
Juniors at universities	57	51	69	65	39	46	44	58	61	51	73	59
Seniors at other HEIs		68		73	46	74	63	78		56	66	
Juniors at other HEIs		64		60	43	63	75	64		74	68	

Question B5: Please indicate your views on the following

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

scholarship. As one might expect, affirmative responses are more frequently given by academics at other higher education institutions than by those at universities, while differences by respondents' status are marginal. The fact that less than half the seniors and juniors at universities in the Netherlands and Poland (and to some extent in Norway) agrees on this issue still leaves a large percentage of academics in these countries who (obviously) disagree.

The highest proportion of university academics who have positive views on the application of academic knowledge to real-life settings is found in Ireland (77% of both seniors and juniors), Portugal (77% of seniors and 76% of juniors) and Finland (74% of seniors and 84% of juniors). Academics at other higher education institutions underscore the application of knowledge as an element of scholarship even more frequently, whereby differences according to country are similar for both institutional types. Finally, the differences between seniors and juniors – regardless of the institutional type – are quite marginal in this respect.

About 10% less of the academics share a favourable stance regarding their professional obligation to apply their knowledge to social problems. Again, this is more often stated by academics at other higher education institutions, and, again, the seniors' responses hardly differ from the juniors' responses. Among university academics, this view is held most frequently in Croatia, whereas no country stands out among the respondents from other higher education institutions.

7.8 Institutional Strategies Encouraging Service Activities

In recent decades, governments worldwide have given priority to and encouraged university-business cooperation as an important step in building a knowledge-based economy. Largely in response to this policy orientation, universities have

Table 7.11 Academics' views on institutional strategies of service activities (percentages[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Encouraging academics to adopt service activities/entrepreneurial activities outside the institution												
Seniors at universities	8			25	15	20	55	19	16	17	38	31
Juniors at universities	12			26	10	15	49	16	12	12	26	30
Seniors at other HEIs				24	8	39	61	40		13	33	
Juniors at other HEIs				13	11	26	46	29		18	36	
Encouraging individuals, businesses, foundations, etc. to contribute more to HE												
Seniors at universities	34			43	26	23	52	25	25	22	39	41
Juniors at universities	34			46	18	22	44	19	19	19	33	32
Seniors at other HEIs				35	23	52	45	15		15	44	
Juniors at other HEIs				24	17	40	49	14		7	24	

Question E6: To what extent does your institution emphasise the following practices?
[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

engaged in more targeted actions aimed at pursuing teaching, research and service in collaboration with business and industry, hoping to obtain resources (Wang and Zhou 2009; Adamsone-Fiskovica et al. 2009; Laredo 2007). Göransson et al. (2009: 162) claim "(…) in many countries the official political documents ask for a closer connection of the universities with society, and in more detailed implementation rules it becomes obvious that the government is exclusively looking at more intensive technology transfer".

Service activities in this framework are perceived and implemented in different ways. The extent to which academics are committed to elements of service reflects the micro-politics of life in modern universities (Macfarlane 2007). There is a key difference in the way institutions pay formal and informal attention to service in their policies and procedures. Encouraging engagement in service activities outside their institutions could bring academics (regardless of their discipline) and practitioners into closer contact, expecting academic knowledge to improve living conditions in local communities.

Encouraging academics to engage in meaningful and well-managed community-based entrepreneurial activities (in accordance with their discipline) could induce the development of sustainable partnerships within the community. Encouraging individuals, enterprises and foundations to contribute more to higher education should be taken here as a broader concept of collaboration and contribution in terms of various resources (financial, knowledge, skills, practice, etc.) and help to avoid the implication of one-directness in service (Karlsson 2007).

As Table 7.11 indicates, about one-fifth of senior university academics and almost one-quarter of senior academics at other higher education institutions state that their institution encourages them to engage in various service and entrepreneurial activities outside their institution. Junior academics perceive this slightly less often. This institutional policy is reported most frequently – more than twice the average across countries – by academics in Germany. In contrast, academics at

universities in Austria and at other higher education institutions in Poland report such a policy least frequently.

A somewhat higher percentage of academics – about 30% across countries, status and institutional type, most often senior academics from other higher education institutions – claim that their institution encourages individuals, enterprises and foundations to contribute to higher education. Again, this share is highest among respondents from Germany; however, German respondents differ from those of other countries to a lesser extent than in the response to the topic discussed above.

7.9 Predictors of Academics' Orientation Towards Service

As the final part of this analysis in 12 European countries, a multivariate analysis was undertaken to identify the major factors that contributed to academics' service act. As service is mostly a voluntary concept, we use 'time spent on service activities' in a broader notion of *service orientation*. The following possible predictors were chosen: (1) demographic/individual variables, (2) academic variables, (3) research orientation and (4) institutional strategies. The choice of these variables reflects the results of previous research.

Demographic/individual variables, such as gender, age and academic rank, seem to be relevant, as some studies note a tendency of young academics to avoid (civic) service activities (Krücken et al. 2009; Göransson et al. 2009; Ćulum 2010). Other studies point out gender differences, notably a stronger involvement of women in various research- and teaching-related activities that involve civic commitment (Abes et al. 2002; Harwood et al. 2005; Ćulum 2010).

Academic variables, notably discipline and research orientation, are underscored in a study by Adamsone-Fiskovica et al. (2009). Natural scientists tend to refer to innovation, knowledge and technology transfer, the commercialisation of primary research results and an orientation towards the needs of the business sector. In contrast, social scientists underscore the importance of civic education, general cultural functions, influence on society and people's minds and a vision of the university as contributing to the enlightenment of the public and raising its educational and cultural level.

Institutional variables named in the literature are not only strategies and policies that create an environment for academics' commitment to service but also resources and other institutional contexts (Adamsone-Fiskovica et al. 2009; Göransson et al. 2009; Wang and Zhou 2009; Laredo 2007; Macfarlane 2007).

The regression analysis was undertaken separately for the 12 countries, as Table 7.12 shows. The results of this analysis do not confirm conventional wisdom.

First, the predictive power of all variables employed differs strikingly by *country*. It ranges from 2.8% of the variance explained for Croatia to 27.9% for Italy. None of the variables played a statistically significant role for Irish academics.

Second, *gender* does not play a significant role in most countries. In three countries (Finland, Italy and Switzerland), however, gender plays a different role from that

Table 7.12 Linear multiple regression analysis of variables predicting academics' orientation towards service activities (both institutional types)

		Variables	AT	HR	FI	DE	IE	IT	NL	NO	PT	PL	CH	UK
Individual		Gender			0.101*			0.092**					0.072*	
		Academic rank/status		0.128*						0.215***				0.136**
Academic predictors	*Discipline*	Bus_law							−0.158*			−0.141*		
		Phys_eng												
		Life_med	0.356***		0.138**	0.253***		0.508***					0.142**	
	Research orientation	Commercially oriented/ intended for technology transfer			−0.094*						−0.117***			
		Socially oriented/intended for the betterment of society							−0.160**		−0.117***			−0.166**
		Involved in the process of technology transfer		NA					−0.133*				−0.120**	−0.115*
Institutional strategies		Encouraging academics to adopt service activities/ entrepreneurial activities outside the institution		NA					−0.189**				NA	
		Encouraging individuals, businesses, foundations etc. to contribute more to higher education		NA									NA	
Model statistics		Adjusted *R* square	0.157	0.028	0.034	0.073		0.279	0.079	0.053	0.039	0.031	0.049	0.046
		F-statistic	9.479***	2.074*	2.942*	5.721***		37.629***	3.479***	3.790***	9.523***	2.522**	6.117***	3.001**

Target variable: Question B1: Time spent for service activities
Only statistically significant coefficients are displayed
***Significant at $p < 0.001$ level; **Significant at $p < 0.01$ level; *Significant at $p < 0.05$ level

expected above: all other factors controlled, men are more likely to spend more time on service activities.

Third, *academics' rank* is important only in three countries: senior academics in Croatia, Norway and the UK show a greater commitment to service activities.

Fourth, the *academic discipline* is important in several respects. Academics in the Netherlands and Poland in business and law show less commitment to service activities than their colleagues in humanities and social sciences. Most strikingly, academics in life sciences and medicine spend more time than others on service activities; this is most pronounced in Italy, Austria and Germany but also applies to Finland and Switzerland.

Fifth, *institutional factors* seem to play a marginal role in this respect. The variable 'encouraging individuals, businesses, foundations, etc., to contribute more to higher education' was not a significant predictor in any country. And the variable 'encouraging academics to adopt service activities/entrepreneurial activities outside the institution' was linked negatively to the actual work time devoted to service in the Netherlands: it is even below average when such a strategy is in place.

Finally, some *country differences* could be evoked. Academics in Finland and Portugal, who are inclined to characterise their research as commercially oriented, report a lower weekly workload in various service activities. Similar results were reported by academics in the Netherlands, Portugal and the UK. They characterised their research as socially oriented and intended for the welfare of society. Academics in the Netherlands, Switzerland and the UK who are involved in the process of technology transfer spend more time on service activities and show a stronger orientation towards service activities.

It seems that, regardless of the research orientation or its overlap with commercially and socially engaged service activities and its possible outputs for nonacademic stakeholders and the community, academics still perceive it as distinctive academic research. Additionally, involvement in technology transfer does not seem to link to the variables used here on the teaching and research functions, but seems rather to be understood as a 'service' activity in its own right.

7.10 Concluding Observations

The analysis of the service activities of academics in 12 European countries indicates that academics – regardless of their status or institutional affiliation – spend substantial time on teaching when classes are in session and not much less on research, while they spend around 3 h per week on various service activities. This is less than half the time spent on various administrative tasks when classes are in session. German university academics spend most time on service activities (more than 6 h), while university academics in the United Kingdom, Norway and Portugal devote less than 2 h to these tasks.

Academics are more likely to be involved in service activities that are linked to teaching and research than in politically oriented and community-oriented service

activities. This is more pronounced among senior academics than among junior academics; the former seem to prefer service activities that bring them power and status in the academic community. Female academics are slightly less involved in service activities linked to teaching and research.

The limited service activities notwithstanding many academics harbour positive views about the relevance of service activities. For example, more than four-tenths of the respondents believe – although varying substantially by country – that their service activities are a positive reinforcement for their teaching.

Moreover, many academics in Europe opt for research thrusts which can be interpreted as being linked to a research-service nexus. Most consider their research as relevant for application, and many emphasise the social relevance of their research, while only a few view their research as commercially oriented and intended for technology transfer. Again, substantial differences by country must be taken into consideration. In response to an additional question, academics, both at universities and at other higher education institutions, share a favourable stance regarding the application of academic knowledge and their professional obligation to apply their knowledge in an attempt to eliminate social problems as an element of scholarship.

Similarly, teaching thrusts are widespread. This can be interpreted as being linked to a teaching-service nexus. For example, many academics – also the majority among those active at universities – state that they carry out practice-oriented teaching and stimulate discussions on values in their classes.

Academics – with no significant differences among seniors and juniors – claim that their institutions have recently put emphasis on encouraging individuals, enterprises and foundations to contribute to higher education. To a lesser extent, the higher education institutions encourage academics to engage in service and entrepreneurial activities.

Altogether, however, the 12-country analysis suggests that the traditional core functions of teaching and research are clearly in the forefront of the academics' values and activities. The service function has hitherto remained marginal.

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Chapter 8
Movers and Shakers: Do Academics Control Their Own Work?

Timo Aarrevaara and Ian R. Dobson

8.1 Introduction

Higher education governance is an ever-changing phenomenon, most commonly driven by so-called reforms promoted by governments. Governments, after all, are the principal providers of funding for most higher education institutions in most if not all European countries. European universities find themselves in a situation in which there used to be a tacit separation between them and the state, so the new situation is that universities are moving rapidly towards using market mechanisms, including seeking to establish a diversified funding base and having to react to the opinions of a much wider range of stakeholders.

At the same time, universities are searching to tighten their focus to improve the profile they present to society and trying to find an appropriate balance between their teaching, research and other responsibilities. As universities undergo these changes, it is leading to an expansion in the number of stakeholder groups, some of which might wish to have an expanded role in the internal governance of universities. With new stakeholders coming in to the picture, it is not surprising that 'traditional' stakeholders of the university community such as students and members of the academic profession have views that are critical of university reforms and changes in governance structures. In addition, even if 'stakeholders' are dealt with as though they represent a homogenous group (or set of groups), in reality, the various discipline-based areas within the university have their own stakeholders. For instance, the humanities, arts and social sciences receive less policy attention

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and funding for commercialisation than their counterparts in the hard sciences (Benneworth and Jongbloed 2010). In engineering, stakeholders are more often invited to discuss goals and objectives of the field and clarify the goals and objectives of research (Jesiek et al. 2009). Perhaps dealing solely with the national or regional government through its ministries or other bodies is preferable to having to appease the new stakeholders.

In this chapter, we consider the attitudes of academic staff, based predominantly on responses to certain questions in the 'Changing Academic Profession' (CAP) survey, conducted in various countries around the world between 2007 and 2010 as well as five European countries that joined in the course of the EUROAC project. So, responses from academics in 12 European countries have been analysed. The EUROAC and CAP survey has been well-documented in introduction chapter, and we will not comment further on it here.

8.2 Stakeholders: A Taxonomy

Stakeholder theory defines a stakeholder as an actor whose company can have an impact on or someone able to have an impact on the company's achievement of its objectives. In a university setting, stakeholders' interests may concern higher education marketing, human resources, corporate governance, public management, ethics and corporate social responsibility (Alves et al. 2010).

8.2.1 The Variety of Actors

Stakeholders are influencers who have a direct or indirect stake in affecting an organisation's actions, objectives and policies and can be inside or outside the organisation. The main stakeholders include students, academics, internal and external policy makers, business entities and local authorities (Elena-Pérez et al. 2011; Dobbins et al. 2011). They include a variety of actors in higher education such as students, teaching and nonteaching staff, government and funding agencies and their assessors (Trigwell 2011; Harvey and Green 1993).

Members of the academic profession are among the internal stakeholders, because they have a formal role in the higher education institution and their social participation is active. This is also the case with other types of staff and students, who are integral members of the focal organisation (higher education institutions in this instance). Governments, business entities and other providers of funds, including miscellaneous fundraisers and donors, are external stakeholders, who are not part of the focal organisation and whose participation is less active than that of internal stakeholders. Their intervention varies and they are also affected by higher education institutions' actions. In the twenty-first century, stakeholders can exert influence indirectly with nontraditional 'soft' tools such as institutional rankings, encouraging universities to become more business-like and to respond more promptly to customers' needs (Locke 2011). For example, a company can contract academics from an

academic department to undertake research, but all parties have to follow the same disciplinary and professional practices and meet the same ethical standards as typically required by academic departments. Companies are external stakeholders, but they can provide knowledge and resources critical to institutional performance (Bess and Dee 2008).

European higher education governance has changed in recent decades from a model based on strong state supervision to another built on increased institutional autonomy and with a growing role for external stakeholders and professional managers (Larsen et al. 2010). Higher education systems are based on different perceptions of the state. From this perspective, the role of governments and other external stakeholders as a part of university governance or as funding organisations differs from one system of higher education to the next. An important difference is the higher education steering model based on strong national ministry-level control, for example, or strong university autonomy. Recent European higher education history has seen the emergence of pressures and incentives for the development of a pan-European higher education system, one in which student and staff mobility are enhanced in terms of the integration of systems or academic co-operation and mobility (Teichler 2004, 2008). Thus, external stakeholders can have access to and be interested in the university, linking them to the academic community, but such stakeholders do not necessarily represent a threat to university autonomy.

Institutional autonomy itself is a moving feast. It is 'the constantly changing relations between the state and higher education institutions and the degree of control exerted by the state. The variety of situations across Europe reflects the multiple approaches to the ongoing quest for a balance between autonomy and accountability in response to the demands of society and the changing understanding of public responsibility for higher education' (Estermann and Nokkala 2009, p. 6).

The concept of which groups a university's 'stakeholders' are constituted of is also a changing phenomenon, just as is the university community. The relative clout each group exerts over universities is also changing. As was noted earlier, a university's stakeholder can be internal, such as university staff and students (and subgroups of both), and in the twenty-first century, there are expanding numbers of external stakeholders. However, stakeholders can also have multiple identities and be both internal and external stakeholders simultaneously. For example, a person might be both a student (internal) and a staff member (internal) or a student (internal) and a member of the regional council (external). Academics themselves are not active influencers of society's structures, but in any of the reference countries in this comparison, academics are substantially involved in local, national or international activities.

8.2.2 Internal Stakeholders

Students and staff are universities' internal stakeholders, and there are several categories of each, and such categories will usually be peculiar to specific countries. In some systems, staff stakeholders might logically be divided between staff with

academic duties and responsibilities and those that do not have such responsibilities. The binary nature of the academic/nonacademic divide is especially strong in English-speaking countries, such as the United Kingdom and Australia (Whitchurch 2006; Dobson 2000; Szekeres 2011). In these countries and in other systems, staff without academic duties might be perceived as seemingly not to constitute a 'stakeholder' group at all, such is the 'invisibility' of their work (Conway 2000; Dobson and Conway 2003; Szekeres 2004).

Arguably, this is also the case in Finland and other Nordic countries, where there is a strong tradition of universities as part of public administration, with characteristics of institutional level and higher education system level governance (Schmidt 2012). The Nordic university community, however, has been moving towards networked governance in recent decades. However, this almost overlooks the growth in the number of senior nonacademic managers that has occurred in many systems and their power to influence institutional missions, including academic directions. Those responsible for designing the survey questionnaire were conscious of this, and some questions refer specifically to managers' capacity to influence those academic decisions. Within nonacademic staff, there can be yet another binary set of staff populations that can be identified in some contexts with the apparent division between universities' senior management and other nonacademic staff. Of course, there can also be a division between senior management and academics in general, as the data presented in this chapter clearly show.

Perhaps it should also be mentioned that care is needed when defining 'senior management'. Although the terminology suggests that these posts are filled by 'nonacademic' staff, many officers at the top of university structures came to their posts through the academy. Here, one is referring to rectors, vice-rectors and the like. Even if the European pattern for decades/centuries had generally been for elected rectors and vice-rectors that returned to their academic careers after a few years in the chancellery, the pattern is changing. Finland is an example of this. Since the Universities Act (2009) came into effect from the start of 2010, rectors are appointed by the university board (the main governance body) rather than being appointed by their peers (Aarrevaara et al. 2009). There has already been one case of a Finnish rector recently appointed after being the rector at another university. This is the pattern in much of the English-speaking world (see, e.g. Monks 2012).

The general expansion in the number and influence exercised by senior nonacademic managers can also be seen in light of the forms of marketisation that have been introduced into universities and the academic world. This has occurred in line with trends such as the extension of mass higher education, rapid expansion of the knowledge base, restricted public expenditure, internationalisation, new funding sources and quality assurance schemes and strengthened institutional leadership. The prominent place of universities in the knowledge society and the modernisation of higher education institutions through a spectrum of new policies and strategic initiatives have created new realities for academic organisations and academics (Leisyte et al. 2009).

Although the trends towards 'the market' might seem to be linked to the extension of the role of external stakeholders, particularly those from business, it is also relevant

to internal stakeholders in the form of senior management. The main push towards 'the market' has come from governments, the principal source of higher education funding, and the so-called new public management has been the management philosophy adopted within government departments and semi-government agencies to introduce market elements into their management. These principles have also been relevant in government/university arrangements and within universities. From this angle, stakeholders' responsiveness and legitimacy is based on either the interface between the university ('the academy') and society or their participation in decision-making procedures (Jongbloed et al. 2008).

The academic sphere in some countries is such that there is a strong division between holders of professorial chairs and other academics not occupying such highly esteemed positions. Within all the categories mentioned in previous paragraphs, it is possible to subdivide further, particularly according to gender and relative seniority. The senior and junior categories depend on the national circumstances in each country. However, in almost all countries, ranks of full professor and associate professor are considered to be senior academics, and assistant professor and lecturer ranks are considered to be junior academics. The exception in these countries is the United Kingdom, where those in the category senior lecturer/researcher/reader are considered to be senior academics. The definition above allowed the Finnish survey to include principal lectures (an academic rank in the polytechnic sector) within the senior category and also research directors and all deans, vice-rectors or their equivalents. Ranks are described in the codebook of each country.

Among students, one can identify groupings such as undergraduates and post-graduates, particularly doctoral students in the latter instance. Finland and Norway as representatives of the Nordic higher education mode present an interesting pattern of student/staff stakeholders, because many doctoral students are also staff. Finnish universities and doctoral schools support many such students by employing them as junior researchers with minor responsibilities in teaching and other academic responsibilities for their institutions. In the Finnish case, this also explains why junior rather than senior Finns state that their preference is for research and why they spend more hours per week on research.

Students as stakeholders can also be perceived in other ways. In university systems that charge full (or at least partial) cost-recovery fees, students in fact become 'customers', and introducing this commercial variable creates a new form of stakeholder into the mix. However, this is yet to be the norm in European systems, even if it is now the model in much of the English-speaking world.

8.2.3 External Stakeholders

The principal external stakeholder in most higher education systems is comprised of governments, whether at the regional, state/province/Länder or federal level. If the experience from Australia is anything to go by, the scope and power of governments does not decline just because the proportion of funding they supply has declined

(Dobson 2010). Governments emphasise their role in regulating higher education whether they provide the major financial input or not (Dobson 2010). However, external stakeholders fill that role for other reasons than being a source of funds. It can reasonably be said that external stakeholders represent groups other than those in the business world. Business and business-related stakeholders include private enterprises of various shapes and sizes, media and chambers of commerce, and trade unions and employers' associations can also be included in this category (Davies 2001). As European universities are part of their national and pan-European innovation systems, from a knowledge society perspective, they are eager to adapt to influences from society. In this regard, they are also reactive to external demands (Neave 2005).

For most universities, stakeholders can also represent regional interests, and their interests are likely to be similar to those of the academic community within universities. Depending on the system being examined, stakeholders might also represent cities and municipalities, other higher education institutions, regional authorities, development agencies, cultural bodies and non-governmental social organisations. The increasing role of regional stakeholders has been documented in Norway (Vabø 2007).

The broad set of so-called reforms described as new public management were mentioned above in the context of senior managers as internal stakeholders. New public management has often been presented as though it is part of a defined social process. In fact, it is a reflection of governments' desire to amend governance arrangements and to reduce institutional dependence on the public purse. In the literature of higher education, new public management often refers to ideas of market-based reforms, development of real prices, a hardening of soft budgetary constraints and introduction of student contributions and students' role as consumers (Ferlie et al. 2008).

We have suggested a broad taxonomy of stakeholders, internal and external, and the changing nature of stakeholders that might seek to influence universities, considering both internal and external stakeholders. This taxonomy is possible only when understanding the university as a community. Which of these stakeholder groups actually influence the governance of modern universities is a matter for conjecture, but by analysing responses to certain questions from the CAP survey, it will be possible to discern what members of the academic profession in various countries think.

8.3 Academics' Opinions

The aim here is to provide an evidence-based commentary on data from surveys in 12 European countries to demonstrate how ideas about dynamic, accountable and transparent governance are taking hold in European higher education. The survey has been very useful in allowing researchers to identify the reasons why there can be different responses from academics in different countries. Not all respondents answered every question, so the number of respondents from a given country can vary depending on the question, and the question was not asked in exactly the same way

Table 8.1 Respondents according to rank and institutional type (absolute and percent)

	Rank				
	Seniors	Juniors	Total	Percent seniors (%)	Percent at universities (%)
Austria	480	1,405	1,885	25.5	100.0
Croatia	97	257	354	27.4	100.0
Finland	386	1,013	1,399	27.6	77.0
Germany	495	750	1,245	39.8	83.0
Ireland	352	743	1,095	32.1	73.0
Italy	1,047	650	1,697	61.7	100.0
Netherlands	467	700	1,167	40.0	54.0
Norway	604	415	1,019	59.3	93.0
Poland	1,530	1,991	3,521	43.5	85.0
Portugal	269	890	1,159	23.2	73.0
Switzerland	402	1,022	1,424	28.2	72.0
United Kingdom	675	544	1,219	55.4	93.0
Overall	6,804	10,380	17,184	39.6	

in each country. In Table 8.1, the population examined in this study is summarised according to their academic rank. In most countries, academics were surveyed at two institutional types: at universities and other higher education institutions that are summarised in this analysis. In Austria, Croatia and Italy, only academics at universities were surveyed. We also identified the proportion of respondents from universities, because the data from some countries includes academics from other institutions of higher education.

One thing revealed by Table 8.1 is the somewhat different composition of the responding population in different countries. Senior academics represented one-third or less in the samples from Austria, Croatia, Finland Ireland, Portugal and Switzerland but over half of the Italian, Norwegian and British samples.

8.4 Are European Academics Influential?

The survey was all about the work, working conditions and opinions of academic staff, and academics are a major internal stakeholder. The survey questions examined here refer only to direct or overall influence (as the authority) in certain governance patterns. Respondents' estimations of indirect influence were not measured. But how do they feel about the influence they can exert? Table 8.2 provides one indication of the difference in perception of what might be described as overall influence between senior and junior academics showing *the proportions that believed they had no influence* at the institution, faculty and department levels, respectively. It also demonstrates the stark differences between countries. In general, academics are most influential at the departmental level, least at the institutional level and their influence at the faculty level is in between.

8.4.1 Overall Influence

Academic staff members, whether of senior or junior rank, represent a principal internal stakeholder group in higher education, and it seems that few feel they can exert *influence at the institutional level* (Aarrevaara 2010). The exception-to-the-rule countries here are Finland, Portugal and Germany, in which relatively few senior academics feel that they are without influence at institutional level (35, 38 and 39%, respectively). By contrast, most junior academics from all 12 countries are of the opinion that they lack influence, perhaps because junior academics are actors primarily at the faculty or departmental level and typically have no formal connections to the institutional level.

In terms of having influence at the institutional level, the results show that academics from Austria and the United Kingdom feel that they are among the least influential academics in Europe, followed by their colleagues from Croatia and Norway. For instance, around two-thirds of the senior staff feel that they have no influence at the institutional level at all, with 65% of UK senior academics also feeling that they were without influence. Similar patterns pertain to junior academics, with nearly 90% of Austrians and British junior academics perceiving that they have no influence.

Looking at countries at the other end of the scale, we note that fewer senior academics from Finland, Portugal and Germany perceive themselves as being without influence at the institutional level. In a sense, this pattern replicate itself among junior academics in those countries, junior academics having consistently less influence than senior academics. The gap between responses between senior and junior staff is also interesting, with the gap between German senior and junior academics being 37 percentage points and 32 percentage points in the case of Finnish academics.

Fewer academics feel that they are without *influence at the faculty level*, but Norway, Ireland, Austria and the United Kingdom are the countries that produced the highest proportions of senior academics unable to exert any influence at this level (45, 44, 38 and 35%, respectively). These same countries have the highest proportion of junior academics lacking influence at the faculty level, with junior academics from Switzerland needing to be added to this group. The perceived gap between senior and junior academics is greatest in Germany (47 percentage points), Switzerland (45), Italy (39) and Austria (37). The gap is also quite large in Finland and Poland (36 and 34 percentage points, respectively).

Examining the *situation at the department level*, few senior academics feel that they lack influence, but there are variations between countries. Senior academics from Ireland (18%), Norway (17%), Austria (15%) and the United Kingdom (14%) report that they are without influence. From Table 8.2, it can be seen that junior academics from these countries follow a similar pattern, but the fact that 44% of junior academics from Switzerland feel they are not influential represents the largest proportion from any country, followed by Ireland (40%) and Austria (40%).

Summing up, for senior academics, the perception of not being able to exert influence at the institution level is an indication that they perceive stakeholders other than academics as being influential. However, fewer senior academics see

Table 8.2 Senior and junior academics that do not feel influential at all at various institutional levels (percent)

	Institution level		Faculty level		Department level	
	Seniors	Juniors	Seniors	Juniors	Seniors	Juniors
Austria	67	87	38	75	15	40
Croatia	61	82	12	36	6	18
Finland	35	66	19	55	4	16
Germany	39	76	6	53	4	16
Ireland	52	68	44	65	18	40
Italy	56	83	22	61	12	34
Netherlands	57	78	18	38	4	8
Norway	58	81	45	75	17	38
Poland	50	80	15	49	6	17
Portugal	38	64	20	41	7	18
Switzerland	54	70	28	72	9	44
United Kingdom	65	88	35	61	14	31
Overall	53	78	24	57	10	26

Question E2: How influential are you, personally, in helping to shape key policies (at the level of department, faculty and institution)? Percentage of respondents answering 4 on scale from 1 = very influential to 4 = not at all influential

themselves without influence at the faculty level and fewer again at the department level. This same pattern is followed by junior academics, but the larger gap between senior academics and junior academics at the faculty level of the proportion that they feel to have no influence probably indicates that junior academics think that senior academics are all-powerful at the faculty and department levels.

8.5 Academics and Other Stakeholders

8.5.1 Areas Decision-Making Examined

Several questions from the survey provide scope for academic staff to make observations about five groups of stakeholders, including themselves. In this brief overview, we have examined the various options that made up survey question E1, in which respondents were required to indicate 'At your institution, which actor has the primary influence on each of the following decisions'. The decisions were:

1. Selecting key administrators
2. Choosing new academic staff
3. Making promotional and tenure decisions
4. Setting budget priorities
5. Determining teaching loads
6. Setting admission standards for undergraduate students
7. Approving academic programmes

8. Evaluating teaching
9. Setting internal research priorities and evaluating research
10. Establishing international linkages

The stakeholder groups whose power in decision-making processes is assessed in the survey are government and other external stakeholders, institutional managers, students and academic staff (see Fisher et al. 2011). Although this provides a sound basis for comparison, perhaps more could have been discerned if there had been separate categories for 'government stakeholders' and 'other external stakeholders'. In systems that are predominantly government funded, the distinction between 'government' and 'others' is important. This section examines stakeholders group by group, in order to discern trends in academics' opinions about which groups are important in which areas, by country. This is a useful way to discern academic opinion about the groups that have the capacity to manage and control important matters that have an impact on academics' working life. Academics' perceptions of government and other external stakeholders, institutional managers and students will be examined before a more detailed examination of the academics themselves as stakeholders.

8.5.2 Government and Other External Stakeholders

Aspects of academics' perceptions of the clout exerted by government and other external stakeholders are summarised in Table 8.3, which identifies the highest incidences of these stakeholders as the most influential. In Portugal, 47% of senior academics and 26% of junior academics perceive government and other external

Table 8.3 Top ten list of influence of government and other external stakeholders in various areas in the view of senior and junior academics, by country (percent)

Rank	Decisions to make	Country	Senior academics	Junior academics
1	Evaluating research	Portugal	47	26
2	Approving new academic programmes	Finland	25	24
3	Selecting key administrators	The Netherlands	24	22
4	Selecting key administrators	Austria	23	28
5	Evaluating research	Croatia	21	15
6	Evaluating research	Norway	21	18
7	Determining budget priorities	Croatia	18	12
8	Evaluating research	UK	17	20
9	Evaluating research	Italy	16	13
10	Evaluating research	Germany	15	9

Question E1: At your institution, which actor has the primary influence on each of the following decisions?

Table 8.4 Top ten list of influence of institutional managers in various areas in the view of senior and junior academics, by country (percent)

Rank	Decisions to make	Country	Senior academics	Junior academics
1	Selecting key administrators	Poland	81	82
2	Selecting key administrators	Italy	80	73
3	Determining budget priorities	Austria	75	68
4	Selecting key administrators	Finland	72	66
5	Determining budget priorities	Germany	72	60
6	Selecting key administrators	UK	67	49
7	Selecting key administrators	The Netherlands	66	64
8	Evaluating research	Austria	66	49
9	Determining budget priorities	Poland	63	66
10	Determining budget priorities	UK	62	51

Question E1: as in Table 8.3

stakeholders as being the most critical in the *evaluation of research*. Norwegian and Croatian senior academics also perceive the government to be a key player in research evaluation. Government and other external stakeholders' role are also seen as important in *approving academic programmes* (Finland – 25% of senior academics and 24% of junior academics). A major role for the government is seen in selecting key administrators in the Netherlands (24 and 22%, respectively) and Austria (23 and 28%).

With the few exceptions listed above, it can be said that academics do not see external stakeholders as having the primary influence over the questions on management asked in the survey. These rather seem to be tasks that are primarily the responsibility of the university community.

8.5.3 Institutional Managers

In Table 8.4, the 'top ten' instances of academics' perception of institutional managers having the primary role in certain managerial matters are summarised. This group is seen as having a major role in selecting *key administrators* in a number of countries. In most instances, there is little difference of opinion between senior and junior academics. The most extensive role is seen in Poland (81 and 82% of senior and junior academics, respectively), Italy (80 and 73%) and Finland (72 and 66%). More than half of senior academics in the UK, Netherlands, Norway, Austria, Ireland, Switzerland and Germany also perceive institutional managers as having the key role in selecting senior administrators.

Overall, it should be noted that the perceived role of the institutional managers as exerting the primary influence is greatest in Austria. With the exception of countries

Table 8.5 Top ten list of influence of students in various areas in the view of senior and junior academics, by country (percent)

Rank	Decisions to make	Country	Senior academics	Junior academics
1	Evaluating teaching	Italy	36	38
2	Evaluating teaching	Norway	28	24
3	Evaluating teaching	Portugal	24	19
4	Evaluating teaching	Croatia	21	23
5	Evaluating teaching	Germany	18	26
6	Evaluating teaching	Austria	16	24
7	Evaluating teaching	Switzerland	16	30
8	Evaluating teaching	Finland	15	16
9	Evaluating teaching	UK	13	16
10	Evaluating teaching	Ireland	12	18

Question E1: as in Table 8.3

mentioned above on matters relating to selecting key administrators, Austrian academics perceive institutional managers as the single main player in appointing institutional managers (58 and 51% of senior and junior academics, respectively), setting budget priorities (75 and 68%) and evaluating research (66 and 49%). Not shown in the table, Austrian academics also perceive the primary role for institutional managers in setting undergraduate admission standards (51 and 42%), approving academic programmes (52 and 47%) and evaluating teaching (58 and 47%).

The pattern of responses from Austrian academics is out of line with the pattern in most other countries. Whereas selecting senior administrators might seem to fall in the natural purview of institutional managers, the role of these officers in, say, the evaluation of teaching and research is out of character for European higher education. Overall, academics in Austria are the only ones to acknowledge a consistently greater role for a stakeholder group other than academics.

8.5.4 Students

As Table 8.5 shows, students are perceived as having the major influence over a single aspect of institutional management, that is, the *evaluation of teaching*. Among senior academics, the student role in evaluating teaching varies from 36% for Italian academics to 7% of those from the Netherlands (not shown in table). Among junior academics, the rates vary from 38% in Italy to 8% in Poland (not shown in the table).

This survey does not specifically analyse academics' opinions about students' influence on governance. However, based on the results, it is clear that students have a role in the academy as an internal stakeholder but only on the evaluation of teaching.

Table 8.6 Top 15 list of influence of academic staff in various areas in the view of senior and junior academics, by country (percent)

Rank	Decisions to make	Country	Senior academics	Junior academics
1	Choosing new academics	Netherlands	96	95
2	Making academic promotions/tenure	Croatia	96	42
3	Making academic promotions/tenure	Netherlands	95	32
4	Choosing new academics	Italy	94	92
5	Determining teaching load	Portugal	94	89
6	Choosing new academics	Croatia	93	93
7	Choosing new academics	Portugal	93	92
8	Setting research priorities	Portugal	93	86
9	Determining teaching load	Netherlands	93	88
10	Setting research priorities	Poland	92	93
11	Making academic promotions/tenure	Italy	92	42
12	Determining teaching load	Poland	91	91
13	Approving new academic programmes	Italy	90	90
14	Setting research priorities	Italy	90	93
15	Setting research priorities	Netherlands	90	92

Question E1: as in Table 8.3

Students' role in governance is relevant in indirect ways. The role of students is reliant on their willingness and on dialogue with academic managers and staff, and the value of it is functional, developmental and social (Lizzio and Wilson 2009). In these reference countries, students' assessments do not have a direct influence as an authority, but from the angle of exerting influence by information, students' role to evaluate teaching is crucial. Of course, in the survey academics were asked about their perception of which group had primary influence, rather than which group should exert primary influence.

8.5.5 Academic Staff

For the purposes of this analysis, the stakeholder group 'academics' was taken as comprising 'academic unit managers', 'faculty committees/boards' and 'individual academics'. The top 15 responses are summarised in Table 8.6. The table reveals that academic opinion sees academics to be the major stakeholder in matters relating to new academic appointments, tenure and promotion matters, in setting research priorities and setting teaching loads. In some instances, there is little perceptional difference between senior and junior academics, but in others, the gap is considerable. For example, even if around 95% of Dutch academics, senior and junior, see the academic role in appointing academics to be pinnacle, less than one-third of

Dutch junior academics note such a strong role for academics in promotions and tenure matters, in contrast with their senior colleagues.

Perhaps the main thing to be observed with these figures is the extent of the majority of opinion expressed in favour of academics as having the primary influence. However, Table 8.6 shows the top 15 incidences of observed influence out of a total of 132 (12 countries by 11 questions).

In order to make the general patterns more evident, results for academics' perception of themselves as having the primary influence are summarised in Table 8.7. The table shows the proportion of academic staff that rates academics as having primary influence on the range of management issues. The four columns represent responses in each quartile (of academics rating 'academics' as being the primary influencers) of each decision listed. The cells show markers for senior academics (*) and junior academics (§). One question was not included in the German and the Norwegian survey, respectively (^).

Academics in some countries represent their own influence consistently at 75% or higher. This is the case in Croatia and the Netherlands and to a lesser extent in Italy. In these countries, responses from senior and junior academics to most questions fall within the same quartiles, a pattern demonstrated to be relatively consistent across the tables. Academics in Italy and the Netherlands rate selecting key administrators as something outside their influence, as do the Austrians.

Table 8.7 demonstrates fairly consistent agreement between senior and junior academics as to the influence of academics. In other words, in some countries, opinions about the extent of academic influence cannot be differentiated on the basis of seniority. Agreement of opinion between senior and junior academics occur for at least 8 out of the 11 questions in Austria, Croatia, Finland, Germany, Italy, the Netherlands, Norway, Poland, Portugal and the United Kingdom. In this regard, the results indicate that the culture of discipline is a stronger influence than seniority.

'Centrality' of response can also be noted with the responses in several countries in the middle two quartiles, with emphasis on the third quartile (50–74%): Finland, Germany, Ireland, Norway, Switzerland and the United Kingdom. The pattern is more distributed in Austria, Poland and Portugal, but Austrian academics appear to rate academic influence as lower than academics elsewhere, typically in the second quartile (25–49%).

On only a few occasions does a low proportion of academics rate their influence as high and thereby fall into the lowest quartile: selecting key administrators (Austria, Italy, the Netherlands and Poland), determining budgets (Austria), promotions and tenure (Austria) and determining teaching loads (Germany).

Academics from some countries see the academic role to be extremely influential, that is, most responses rated academics' influence in the top quartile (>74%) in Croatia, Italy and the Netherlands. Looking at countries and the types of decisions which academics perceive themselves as having the most say, 75% or more perceive the academic role as the principal one in appointment and promotion of academics, establishing teaching loads and research-related matters. In many instances, when academics rate their influence as being in the highest quartile, this is the opinion of senior and junior academics alike. However, in some instances,

Table 8.7 Views that academics[a] have the primary influence on decisions (quartiles of percentages)

	Austria				Croatia				Finland				Germany			
	>74%	50–74%	25–49%	<25%	>74%	50–74%	25–49%	<25%	>74%	50–74%	25–49%	<25%	>74%	50–74%	25–49%	<25%
Admission standards – undergraduate			* §		* §					* §				* §		
Approve new academic programmes			* §			* §					* §			*	§	
Budget priorities				* §	* §						* §				* §	
Choosing academics		*	§		* §				* §				*	§		
Establishing international links	* §				* §				* §				* §			
Evaluating teaching			* §			* §				* §				* §		
Evaluating research			* §		§					* §				* §		
Promotions and tenure decisions	§	*			* §					* §			§	*		
Research priorities	* §				* §					* §			* §			
Selecting key administrators				* §	* §						* §				* §	
Teaching load determining	§	*			* §				* §				^	^	^	^

(continued)

Table 8.7 (continued)

	Ireland				Italy				Netherlands				Norway			
	>74%	50–74%	25–49%	<25%	>74%	50–74%	25–49%	<25%	>74%	50–74%	25–49%	<25%	>74%	50–74%	25–49%	<25%
Admission standards – undergraduate		*	§		§	*			* §					* §		
Approve new academic programmes	*	§			* §				* §				^	^	^	^
Budget priorities			* §			* §				* §					* §	
Choosing academics	*	§			* §				* §				*	§		
Establishing international links	* §				* §				* §				* §			
Evaluating teaching		* §				* §			* §					* §		
Evaluating research		* §			§	*			* §					* §		
Promotions and tenure decisions		* §			* §				* §					* §		
Research priorities		* §			* §				* §					* §		
Selecting key administrators			* §					* §				* §			* §	
Teaching load determining	*	§			* §				* §					* §		

	Poland				Portugal				Switzerland				UK			
	>74%	50–74%	25–49%	<25%	>74%	50–74%	25–49%	<25%	>74%	50–74%	25–49%	<25%	>74%	50–74%	25–49%	<25%
Admission standards – undergraduate		* §				* §				* §				* §		
Approve new academic programmes	* §				* §					§	*			* §		
Budget priorities			* §			*	§			§	*				* §	
Choosing academics	§	*			* §					* §			* §			
Establishing international links		* §			*	§			* §					* §		
Evaluating teaching	§	*				* §				* §				* §		
Evaluating research	* §					§	*			* §				* §		
Promotions and tenure decisions		* §			* §					* §				* §		
Research priorities	* §				* §				§	*				* §		
Selecting key administrators				* §		* §				§	*				* §	
Teaching load determining	* §				* §					* §			§	*		

Source: CAP/EUROAC survey

Senior academics: *, junior academics: §; no response: ^

[a]'Academic unit managers', 'faculty committees/boards' and 'individual academics' from survey question E1

senior and junior academics rank their influence differently, typically (but not always) with senior academics perceiving a higher academic influence.

Appointing key administrative personnel present a different picture. Even though Croatian academics place themselves in the top quartiles in perceiving themselves as having a primary influence on the selection of administrators and Portuguese academics in the second quartile, the Europe-wide average is 26.5%, placing the average just above the bottom quartile. Academics from countries such as Austria, Poland, Italy and the Netherlands all see themselves as having a minority role and rate their influence as falling within the lowest quartile.

Academics from Portugal (whether senior or junior academics) perceive their role as the primary influencers of teaching loads. Both senior and junior academics from the Netherlands and Poland rank their influence in the top quartile.

The patterns in various countries pertaining to academics' understanding of their own influence are summarised in Table 8.7. For example, Austrian academics see themselves as particularly influential in establishing international linkages, defining 'particularly influential' as having at least 75% of senior academics describing academics as having the primary influence. By contrast, the perception of Croatian academics was that they are the main player in most regards. The pattern of perception among academics in the Netherlands and Italy is similar. Finns see themselves as middle of the road in terms of their influence in 8 of the 11 decision options. So do UK academics and those from Germany, Ireland, Poland and Switzerland.

8.6 Who Assesses Academics' Teaching and Research?

The core functions of an academic's work life are teaching and research. Therefore, one measure of academic freedom can be deemed to be related to who assesses this work. If teaching and research are assessed predominantly by internal academic stakeholders, can one presume a higher level of autonomy than if that assessment is made by outsiders or nonacademics? We think it can!

The survey contains a question that can be analysed in order to establish the capacity of academics as internal stakeholders to influence their work place. The question 'By whom is your teaching, research, and service regularly evaluated?' provided academics the opportunity to express their opinions about who evaluates their academic and related work. Here, we display figures only for teaching and research, because of the potentially nebulous nature of what 'service' could constitute.

Responses about who evaluates teaching and research are summarised in Table 8.8. For the purposes of this analysis, 'internal academics' is a summation of departmental peers, heads of departments, members of other departments and oneself. As multiple responses were possible in this question, the sum of the responses for the four categories shown exceeds 100%.

Table 8.8 Evaluators of teaching and research in the view of senior and junior academics (percent)

	AT	HR	FI	DE	IR	IT	NL	NO	PL	PT	CH	UK	All
Teaching													
Internal academics													
Senior academics	25	34	31	18	29	18	34	21	34	36	17	46	28
Junior academics	29	45	31	20	35	24	37	22	40	36	23	46	33
Senior administrators													
Senior academics	33	7	16	12	6	3	17	19	12	23		11	12
Junior academics	18	10	9	12	9	3	14	16	13	32		11	13
Students													
Senior academics	90	93	92	90	84	87	91	92	75	50	89	94	86
Junior academics	89	86	81	79	85	87	92	82	77	54	84	92	81
External reviewers													
Senior academics	9	20	20	9	30	9	28	11	14	31	10	33	16
Junior academics	3	11	9	4	37	9	18	9	11	43	6	31	14
Research													
Internal academics													
Senior academics	33	32	40	18	28	22	36	21	38	12	20	43	30
Junior academics	45	43	49	30	34	30	34	34	42	15	36	47	38
Senior administrators													
Senior academics	30	2	29	16	21	2	14	12	16	9		24	15
Junior academics	10	6	12	20	14	3	16	8	14	12		21	12
Students													
Senior academics	1	6	4	2	3	2	3	6	2	66	3	4	4
Junior academics	2	2	3	3	7	3	2	4	3	61	2	2	7
External reviewers													
Senior academics	75	61	66	44	70	48	61	48	26	24	55	63	48
Junior academics	55	32	48	38	57	38	46	31	19	23	38	61	37

Question E3: By whom is your teaching, research and service regularly evaluated?
For country codes, please see Table 1.1 in Chap. 1

Table 8.8 shows that in all countries, a higher proportion of the teaching by junior academics is assessed by other academics internal to the institution, although the difference is marginal in the cases of Finland, Norway and the United Kingdom. There are considerable differences between countries in the extent of internal academic scrutiny of teaching. In the UK, for instance, about 45% of academics' teaching assessment is performed by internal academics, compared with only 17% of senior academics in Switzerland as well as 18% each in Germany and Italy. In these latter-mentioned countries, student assessment of teaching is high and, in a couple of instances, external assessment (e.g. in the cases of Portugal and Switzerland). Student assessment of teaching is quite high in all countries except Portugal, where it is relatively modest (50%).

External stakeholders have a much larger role to play in the assessment of research, although there is considerable variation between countries. In Austria, 75% of senior academics report that their research is regularly evaluated by external reviewers, whereas in Poland and Portugal, 26 and 24% report the same. Senior academics in Ireland also state a high rate of external evaluation (70%). Academics report much higher rates of external assessment of teaching in Ireland, Portugal and the United Kingdom. In the case of the United Kingdom and evaluation of research, it is likely that successive rounds of assessment via the Research Assessment Exercise and the Research Excellence Framework that is in the throes of replacing the former have had a major impact.

8.7 Conclusion

Academics in European higher education have been under an umbrella of reform throughout the twenty-first century, as the academy's role with the state and traditional profession has been changing. This has been seen in long-established reforms, which have changed the relationship between the academics and external stakeholders. It appears that while the new stakeholders have come to universities in the last decade, overall stakeholder relations are still in the hands of senior academics. However, the change does not apply to members of the academic profession identically in all positions. External stakeholders at the universities are not the 'watch dogs' of accountability but rather in new actors in university governance – and their role is still remote from higher education institutions and marginal in internal decision-making.

Results of this chapter suggest that external stakeholders are more active in issues related to research than to teaching. Functions in teaching are under strong regulation while there is more freedom for research. This means that the role of the stakeholders at the institutional level is stronger and lower at department level. Survey results show that as external stakeholders' influence becomes stronger, the influence of the academic profession becomes weaker. Is it any wonder that external stakeholders' role is not visible at the academic unit level? They have very little influence on academic practices.

The results also indicate that reforms have not reached the level of academic units (departments, faculties) to the extent that they have reached the institutional level. So, it is evident according to these results that stakeholders other than academics do not have a role in academic practices. This can be seen in the different attitudes of research and teaching-oriented respondents. Other evidence of this trend is that centralisation in governance and top-down management style does not take a strong place in research-oriented systems.

In this regard, there are diverse countries but also differentiation within countries; all these countries have elements of either horizontal or vertical diversification. In the case of the former, there are different types of higher education institutions, with

some countries having a polytechnic sector (or equivalent), such as Austria, Finland, Germany and Switzerland. Arguably, there is vertical diversification in the United Kingdom, with its different levels of university (particularly the Russell Group of major research universities). Of course, there is a de facto pecking order of universities in most countries, whether it is explicit or not. Factors such as size, location and research intensity become the implicit definers of the 'marque'.

This leads to the question of whether countries fall into blocs according to the relative influence of one group of stakeholders vis-à-vis other groups. It was clear from Table 8.7 that some countries seem to have an overwhelming 'dominance' of opinion about academics as the principal player. In particular, academics from Croatia, Italy and the Netherlands and, to a lesser extent Portugal, say the academic role to be the dominant one in most survey questions on management issues. In these countries, the perception is that academics are the primary decision influencers in at least three-quarters of the management issues discussed. However, the other countries also see a major role for academics, with academic opinion falling in the middle two quartiles. As that table showed, academic influence is seen as falling within the bottom quartile in relatively few instances. The ones that stick out here are academics' influence in Austria for budget priorities and selecting key administrators and Italian, Dutch and Polish academics and selecting key administrators. Whether it is possible to establish a logical basis for grouping countries together on the basis of the academics' perceived impact of stakeholder groups is problematic. Although there might be some 'overlap' between academic opinions due to cultural or geographic proximity, it is probably not possible to predict what this would be.

European higher education systems now seem to be moving at different speeds towards a broader stakeholder influence: the higher the proportion of direct public funding is in university funding, the slower growth of the external influence of stakeholders at the academic core. External stakeholders are not threatening academic freedom in the first place, but internal management practices could do so. That is why it is important to pay attention to the internal stakeholders' role in their positional, reputational and social participatory roles. Internal stakeholders' role at the academic core is strong, as they are bound to the traditions of public administration or roles based on networked governance. Senior managers as internal stakeholders, in turn, are also bound up with new public management.

It appears that the internal stakeholders have a central role to play in the formation of the academic work at the institutional level. This role may be different in the natural sciences and engineering compared with the humanities, social sciences and arts. In the debate on universities and polytechnics, the attention is paid first of all, however, to external stakeholders. Their interest is crystallised by information such as rankings, while the survey indicates that internal stakeholders' role is crucial in internal institutional decision-making and efficiency. The academic community has a strong interest in having stakeholders in the university, as many factors encourage greater stakeholder influence in the academy. One pattern suggested by the figures taken from the survey is that academics remain in a relatively strong position among all stakeholder groups.

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Chapter 9
From Academic Self-Governance to Executive University Management: Institutional Governance in the Eyes of Academics in Europe

Elke Park

9.1 Introduction

'The guild idea of a self governing community independent from society, dwelling within protected and sacred space' – this utopian ideal was used by Sheldon Rothblatt (2003: 24) to describe the traditional model of university governance where professors, as members of the 'academic oligarchy' (Clark 1983), decided collectively on most internal and academic matters. The degree and importance of collective decision-making and self-governance by scholars ('government by committee') have been longstanding characteristics of the European university.

Greater pressure for performance and competition in higher education over the last 20 years has had drastic effects on the internal governance of universities in Europe. However, the way universities are managed and steered has changed as they try to adapt to a more market-like environment and are forced to respond to societal demands for relevance and efficiency. These changes are felt – to varying degrees and at different stages of reform – in all countries participating in the EUROAC survey. In line with the demands of New Public Management (NPM), academic self-governance and collegial decision-making have, in some countries, been replaced by more top-down, executive style management structures. Whereas the academic profession traditionally had a strong influence on the decision-making process in the university (steering via collegial bodies in often cumbersome procedures), reforms introduced stronger management structures and top-down leadership (strategic steering from the top), transforming academic faculty into staff with limited institutional say. The 'donnish dominion' of university professors over their institution is declining, and the power of the 'academic oligarchy' is encroached upon by university managers

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in corporate models of governance (see Halsey 1992). The notion of top-down management often evokes negative connotations, implying that such decision-making structures are undemocratic and non-participatory. However, it must be noted that 'collective' decision-making in the traditional chair system of university governance only referred to a few privileged members, as not all scholars were equally involved in the process.[1] The concept of academic self-governance favoured hierarchical structures, as it relied on a separation of academic estates between professors and nonprofessorial staff and was based on a 'guild' structure (one master, many apprentices). On the other hand, it can be argued that executive style management could also have an equalising effect through flatter hierarchies whereby all academics are treated as employees (this argument is held by Pechar 2005).

The concept of 'New Public Management' (NPM) is central to the following analysis. It originated in the 1980s in the UK and has been at the centre of the debate for quite some time now. The driving idea behind the concept is a more market-oriented approach to public management and administration by emulating practices derived from private enterprise in the public sphere. According to Ferlie et al. (2008), NPM inspired reforms in higher education that are characterised by a higher level of competition and financial pressures, greater emphasis on performance and the introduction of nonacademic executive leadership, as well as a top-down management style.[2] Another increasingly prominent conceptual approach that will also be reflected in this chapter is the concept of network governance, implying shared, network-style decision-making processes among a multitude of actors (see also the Chap. 10 by Campbell, in this volume).

De Boer et al. (2007) further elaborate on the NPM paradigm. They established five relevant dimensions of NPM in the governance of higher education: (1) the *amount of state regulation*, (2) the *influence of various external stakeholders* ('stakeholder guidance'), (3) the degree of *academic self-governance* and the role of collegial decision-making processes at universities, (4) *managerial governance* – stronger executive and corporate-style leadership at universities and finally (5) the level and *amount of competition* in the higher education sector. On the basis of these criteria, the authors developed a 'governance equaliser', an analytical tool to measure the extent of NPM policy in the various national higher education systems against a hypothetical 'NPM standard' which would ideally be set to state regulation = low; academic self-governance = low; external guidance = medium to high; managerial governance = high and competition = very high.

This chapter focuses on the relation between managerial governance and academic self-governance. By analysing selected items in the EUROAC survey on power distribution, managerial style and staff participation in decision-making,

[1] With the – short lived – exception of the 'group university' in the 1970s and 1980s, for example, in Austria (UOG 1975), Germany (HRG 1976) and the Netherlands where more democratic decision-making structures also tried to integrate students and nonprofessorial staff more strongly by increasing their representation and voting power in university committees.

[2] Also, stronger vertical differentiation between institutions.

it attempts to give an overview of internal university governance mechanisms as perceived by the academic profession. Furthermore, the various internal governance structures will also be measured against and compared to the degree of performance orientation and competition in each country. While the focus is primarily on universities, other higher education institutions such as universities of applied sciences will also be addressed.

In order to give an impression of prevailing power structures in European higher education institutions, the perceived personal influence of academics on decision-making processes at the various institutional levels will be assessed in the first part of the analysis. In addition, the influence of various institutional players or groups on selected decision-making processes will be discussed. Here, the perceived influence of faculty committees and/or the rectorate/university leadership will be of particular interest. Also, hierarchical differentiations between junior and senior staff can be most easily detected in this section. This should provide an overview of power distribution and clarify the role of individual academics in the decision-making process.

In the second part of this chapter, academics' perceptions of institutional governance issues will be addressed: the managerial style and the power of executive managers in the steering process. The relationship between university leadership and academics will further be explored by looking at results of questions on good communication with management, how academics rate the competence of leadership at their institution and the elements of academic self-governance and collegiality that persist.

How does performance and a focus on competition relate to institutional settings? Does managerial governance automatically imply a stronger performance orientation? Can internal governance changes be interpreted as a result and corollary of more competitive structures in general, and how are performance and top-down management linked? In the third part of this chapter, the relationships between the extent of performance orientation and mission orientation on the one hand and the institutional management structures on the other will be analysed.

These questions can be addressed because the survey explored a possible variety of coexisting governance styles: What institutional provisions and variants or combinations thereof can be found in the European higher education landscape? Does a strong performance orientation preclude a stronger role of academics in the decision-making process? Are managerialism and academic self-governance mutually exclusive or can they coexist within an institution?

9.2 Power Structures and Influence on the Decision-Making Process

9.2.1 Personal Influence

The chains and patterns of influence are important elements of institutional governance structures: How and to what extent can academic faculty contribute to and participate in the decision-making processes in universities, and how powerful do

Table 9.1 High personal influence of academics (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Level of the department[b]	72	54	88	39	55	84	88	74	55	52	70	58
Level of faculty[b]	28	19	69	11	25	49	63	36	32	21	39	29
Institutional level[b]	9	12	17	4	8	11	26	18	10	16	22	12
Juniors at universities												
Level of the department	26	11	63	12	36	68	48	25	23	21	38	25
Level of faculty	4	2	35	3	8	16	9	6	5	4	16	13
Institutional level	2	5	5	1	2	3	4	3	2	6	6	8
Seniors at other HEIs												
Level of the department		67		51	46	83	77	65		61	80	
Level of faculty		38		23	28	48	66	33		23	53	
Institutional level		26		6	13	17	28	31		25	46	
Juniors at other HEIs												
Level of the department		26		11	37	73	55	39		33	40	
Level of faculty		14		2	12	32	26	12		17	15	
Institutional level		12		1	8	3	19	7		5	12	

Question E2: How influential are you, personally, in helping to shape key academic policies?
For country codes, please see Table 1.1 in Chap. 1
[a]Responses 1 or 2 on a scale from 1 = very influential to 4 = not at all influential
[b]The items were: At the level of the department or similar unit; at the level of faculty, school or similar unit; at the institutional level

they feel? In the survey, respondents were asked to rate their personal influence on the decision-making process at the institutional level (the university itself), possibly the level of the faculty or school and at the level of the department or similar unit: How influential are you, personally, in helping to shape key academic policies?

It is not surprising to note that the personal influence of academics in helping to shape key academic policies is lesser at the higher levels of institutional governance. It is strongest at the department level and least pronounced at the level of the university itself. Furthermore, as was to be expected, juniors generally tend to have substantially less influence on the decision-making process than seniors (see Table 9.1).

At the department level, university professors believe they have the strongest influence on key academic policies in Germany, Croatia (88% each) and the Netherlands (84%) and also a relatively high influence in Finland (74%), Austria (71%) and Portugal (70%). In the UK, Italy, Poland, Switzerland and Norway, it is less (between 58 and 52%), and the lowest influence is observed among Irish university professors (39%).

A powerful position is also observed at the faculty or school level, with 69% of seniors in Croatia and 63% in Germany considering themselves to be influential at this level. This is stated by only 11% of Irish professors; professors in Switzerland (19%) and Norway (21%) do not seem to be influential at this level.

At the university level, the influence of individual academics, even those in senior positions, is markedly lesser (on average around two-thirds of respondents feel 'not at all influential'; arithmetic mean 3.6). Only 4% of Irish professors state they can influence policies at this level, while, in most other countries, a perceived influence rate of between 8% (Poland) and 22% (Portugal) can be observed. The country that clearly shows the strongest influence rate at this level is Germany. More than a quarter (26%) of German university professors claim to be able to influence university politics. Despite all medium-range reforms, professors in Germany were able to retain a clear position of power in university management and institutional governance. They are strong institutional players and still a force to be reckoned with in the steering of the university. The traditional German university chair characterised by the powerful position of professors in university governance with strong institutional say and far-reaching participatory rights of the professoriate seems to persist (see also Teichler 2011).

Austria, on the other hand, shows the most negative assessment of influence at the institutional level, with 83% of academics stating they are not at all influential in university politics. These results correspond to recent governance reforms and the introduction of strong executive leadership in Austrian universities at the expense of collegial bodies and formerly more participatory governance structures and could be viewed as a form of protest against a loss of participatory rights and personal power in university politics on the part of senior academics.

Throughout Europe, junior academic staff at universities feels decidedly less influential than seniors at all levels. However, when looking at how much less, we note varying degrees of hierarchical differentiation and power distribution within a system. We can observe interesting variations: Finland, Austria, Switzerland and Germany show the greatest gap in perceived influence between juniors and seniors (with a difference in influence of between 40 and 50 percentage points) at the department level, while the Netherlands, Poland and Croatia show the smallest margins: between 16 and 25% difference, pointing to more egalitarian structures. Overall, at the department level, juniors in Switzerland (11%) and Ireland (12%) feel least influential; in the Netherlands (68%) and Croatia (63%), they seem to have a stronger say in their institute's policies.

At the higher level of the faculty or school especially Croatian (35%), but also Dutch, Portuguese and even British junior academics feel most influential, whereas Swiss juniors again state they have the least influence (2%). The strongest difference between juniors and seniors' influence at this level is observed in Germany (63% of German seniors believe to be very or somewhat influential at the level of the school, as opposed to only 9% of juniors, a difference of 54%), indicating a more hierarchical system (due mainly to the powerful position of the German professor). This is also true for the university level, where the influence of juniors is rather negligible; again, the difference between professors and lower ranking academic staff is most pronounced in Germany. Interestingly, when looking at the two higher levels (the faculty and the university itself), the smallest difference in influence between juniors and seniors occurs in the UK and Ireland. Pechar's hypothesis (2004) that NPM-inspired governance structures such as in the UK are more consistent with flatter hierarchies seems to be confirmed by the EUROAC study.

It was shown that both senior and junior staff alike at universities in Croatia and the Netherlands stated having great influence, indicating closer involvement and greater staff participation, as well as a more egalitarian power distribution than in other European countries. On the other hand, both juniors and seniors feel least influential in Ireland. This can be explained in part by a massive restructuring effort in higher education that took place in Ireland over the last 5 years when the Irish academic profession experienced a marked loss of influence. Like in Austria, the results could be interpreted as an expression of protest or discontent, as Ireland emerges from the survey as being among the most critical concerning university governance. Another interesting case is Switzerland, usually considered as a prime example of consensual, participatory decision-making with strong aspects of network governance. Especially among junior staff and at the levels of the faculty and the department, Switzerland scores very low regarding personal influence on the decision-making process. One could hypothesise that a strong focus on consensus and power-sharing in the decision-making process can limit the influence of individuals or at least the perception of personal power in the steering of an institution.

At other higher education institutions, the perceived personal influence is on average slightly higher than at universities, especially for seniors at the institutional level (22% for professors at other higher education institutions, as compared to 14% for university professors).[3] Among senior staff, the rates of the perceived influence of Swiss, Irish and Portuguese professors at other higher education institutions are markedly stronger than at universities at all levels. Still, Ireland shows the lowest influence rates for both junior and senior staff at these institutions. On the other hand, academics in the Netherlands, Germany and Portugal rate their personal influence most positively – a result that corresponds to the findings for universities.

9.2.2 Most Influential Actors in Selected Areas of Decision-Making

The EUROAC study aimed to identify groups of institutional actors or individual actors who are seen as having the prime influence on a number of decision-making processes in the university. The following observations focus on universities which are often characterised by more complex organisational structures than other higher education institutions.

9.2.2.1 Selection and Promotion of Academics

Respondents were first asked to identify the actors who had the strongest influence on selecting and hiring academic personnel. Table 9.2 shows that *the prime influence*

[3] The average of ten countries, not weighted.

Table 9.2 Actors at universities perceived to have the primary influence on choosing new faculty (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Government or external stakeholders	4	8	5	0	0	0	2	1	2	1	0	0
Institutional managers	40	18	2	10	25	2	16	7	4	21	8	14
Academic unit managers	12	0	18	33	27	45	18	16	31	19	21	33
Faculty committees/boards	40	64	63	53	47	50	57	37	39	34	66	34
Individual faculty	4	10	12	3	1	4	7	40	24	25	5	20
Juniors at universities												
Government or external stakeholders	3	11	6	1	0	0	4	0	4	2	0	0
Institutional managers	49	31	2	18	25	2	29	8	5	26	8	16
Academic unit managers	17	0	15	37	31	31	25	12	36	23	40	27
Faculty committees/boards	27	48	64	39	44	57	35	31	27	32	48	33
Individual faculty	4	10	14	4	1	9	6	49	27	17	4	23

Question E1: At your institution, which actor has the primary influence on choosing new faculty
[a]Responses 1 and 2 on a scale from 1 = very influential to 4 = not at all influential

on choosing new faculty is located in most (10 out of 12) countries with faculty committees and boards. Only in Austria, where strong management structures were recently implemented at universities, is this responsibility attributed to institutional management and university leadership.

Especially Austrian junior faculty (50%) believes that the rectorate plays the most important role in choosing new faculty (only 26% believe that the responsibility lies with faculty committees), while Austrian senior staff are equally split between the rectorate and faculty committees (both 40%). Other NPM forerunners such as the United Kingdom and the Netherlands – according to the CAP results – did not devolve this particular decision-making process to university leadership. In both countries, faculty committees and academic unit managers are seen as most influential in staff selection and recruitment. In the Netherlands, the rectorate is ascribed virtually no influence (2% as compared to 47% in Austria), which is somewhat astounding considering that the 1997 Dutch 'Modernising Universities Act' (MUB) introduced strong executive, corporate-style management in universities: Former internal decision-making processes were considered 'cumbersome and slow' and the Act ended – as Jürgen Enders put it – 'twenty-five years of the 'university as a representative democracy' (Enders 2006: 31). These changes apparently do not pertain to faculty recruitment. Also, in the United Kingdom – the HE system with probably the strongest performance orientation of all countries – this core mechanism of institutional governance is still decided by academic faculty in collegial bodies. British universities were – in stark contrast to the Austrian reforms – never legally bound to change their organisational structure. Interestingly, in Finland – a crass exception – individual faculty is believed to be the decisive force in hiring

Table 9.3 Actors at universities perceived to have the primary influence on making faculty promotion and tenure decisions (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Government or external stakeholders	1	3	3	0	1	0	1	0	4	2	0	0
Institutional managers	37	17	1	24	33	2	27	22	4	38	11	33
Academic unit managers	48	0	4	6	4	56	25	13	33	21	23	16
Faculty committees/boards	6	74	70	69	61	38	12	48	37	33	63	44
Individual faculty	8	6	21	0	2	5	35	16	21	6	2	7
Juniors at universities												
Government or external stakeholders	1	1	4	1	2	0	2	0	4	2	1	0
Institutional managers	29	25	5	30	37	4	18	17	5	40	24	27
Academic unit managers	56	0	7	18	4	56	39	10	39	20	26	17
Faculty committees/boards	4	65	78	50	57	30	13	47	27	33	47	43
Individual faculty	9	8	7	1	0	10	27	25	25	5	3	12

Question E1: At your institution, which actor has the primary influence on making faculty promotion and tenure decisions

[a]Responses 1 and 2 on a scale from 1 = very influential to 4 = not at all influential

and choosing new faculty, especially among junior staff (49%), possibly indicating a system with stronger personal dependencies.

9.2.2.2 Promotion and Other Personnel Decisions

Strategically important personnel decisions seem to rest to a large extent with boards and committees – collegial bodies. This is true for *faculty promotion and the award of tenure*, although heads of academic units also play a role here (see Table 9.3). Faculty committees are seen as the decisive institutional actors regarding promotion decisions in 7 of the 12 countries. In the Netherlands, Austria and Germany, heads of academic units are regarded as most influential. However, in Germany, there is a split of opinion according to the academics' status: Whereas seniors – possibly reflecting their own personal experience or the assessment of their influence and power in the recruitment process – believe that individual faculty has the strongest say in promotion decisions, junior staff see academic unit managers as the driving force. Faculty committees do not seem to play a role in Germany. Most surprisingly, in Norway, there is a firm opinion that faculty promotion and tenure decisions rest with the rectorate.

In conclusion, while we can observe some national particularities and certain extremes due to nationally distinct features of the higher education system, the EUROAC study clearly provides evidence that *personnel decisions are most strongly influenced by faculty committees and boards. Academic faculty organised in collegial bodies shapes the recruitment and promotion of faculty* – not executive university management – even in countries that underwent major NPM-inspired reforms.

Table 9.4 Actors at universities perceived to have the prime influence on determining budget priorities (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities												
Government or external stakeholders	5	8	17	3	6	0	2	6	2	2	5	3
Institutional managers	76	42	5	56	63	25	67	42	42	50	34	61
Academic unit managers	15	0	59	21	7	60	17	7	29	25	44	14
Faculty committees/boards	2	42	19	20	23	12	12	25	21	21	10	15
Individual faculty	2	9	0	0	2	2	2	20	6	3	5	7
Juniors at universities												
Government or external stakeholders	11	9	11	4	5	2	7	3	2	2	8	3
Institutional managers	66	28	13	40	67	28	59	40	37	53	48	46
Academic unit managers	17	0	40	35	6	53	21	12	33	22	35	16
Faculty committees/boards	5	44	34	19	22	14	11	25	19	19	8	29
Individual faculty	1	18	1	1	0	3	3	20	9	3	1	7

Question E1: At your institution, which actor has the prime influence on determining budget priorities

[a]Responses 1 and 2 on a scale from 1 = very influential to 4 = not at all influential

9.2.3 Determining Budget Priorities

The greater scarcity of and competition for funding represent a cornerstone of the NPM paradigm. As budgetary pressures increasingly shape universities' behaviour, determining budget priorities is a central aspect in the strategic steering of universities. *Institutional managers (university leadership, rectors) are seen as the institutional actors in charge of financial steering* in 9 out of 12 countries (see Table 9.4).

The Austrian rectorate emerges as particularly strong, with the highest percentage of respondents (76% of seniors, 66% of juniors) believing that the budgetary authority rests with university leadership. Only in the Netherlands and Croatia is the institutional level below the rectorate, that is, heads of academic units, considered responsible for the strategic distribution of funds. The rectorate in the Netherlands again appears less powerful than in other NPM countries. At Swiss universities, faculty committees and boards are attributed prime influence on determining budget priorities, and academic unit managers are not at all influential here. The budgetary authority and the setting of budgetary priorities in Switzerland thus rest with academics in collegial bodies, not with nonacademic university leadership. However, it must be noted that Switzerland represents a special case, as budgetary constraints and financial pressures do not play a defining role. There is generous funding and the latest government reforms even foresee an increase in resources for universities (Bleiklie et al. 2011: 170) (Table 9.4).

Budgetary pressures and the competition for funds are at the core of the New Public Management paradigm, and the institutional changes brought about by NPM can be seen as a reflection or corollary of this central proposition. Following this assumption, one could hypothesise that, where budgetary pressures apply, institutional

changes in university governance follow in order to be able to cope with these market-type pressures. Hence, nonacademic institutional management decides. On the other hand, where the financial situation is more relaxed, the allocation of funds is still left to academics deciding in collegial bodies.

9.2.4 Influence on Purely Academic Matters

Regarding influence on strictly academic affairs, that is, the content of teaching and research, we would expect lower decision-making levels to have the most power and influence. In fact, faculty committees have the strongest influence of all institutional actors regarding the approval of new academic programmes. Only in Austria and Germany does the rectorate play a more important role. It must be noted that the newly created Austrian rectorate is again in the strongest of all measured positions, 50% of university staff believe that the decision to create an academic programme lies with the rectorate. The core of academic work, the setting of internal research priorities, is still, however, believed to rest with individual faculty in most countries surveyed (6 out of 11). However, heads of departments also play a role in Austria, Poland and the Netherlands, as well as committees in Croatia. Norway stands out with its assessment that university leadership, that is, the rectorate, sets research priorities.

Summing up these findings, we note that the '*Ordinarienuniversität*' is still strong, especially in Germany, with high influence rates for professors and a striking difference in influence between junior and senior staff, indicating a more hierarchical structure. Also, a notion of protest against a recent loss of influence could surround the results in Ireland and Austria, as both countries underwent major NPM-inspired reform processes only recently. In Austria, the rectorate emerges as particularly strong. In Switzerland, with a strong focus on consensual decision-making, the perceived personal influence of academics is surprisingly low, while the influence of faculty committees is rather high, possibly pointing to a pressure for consensus. The Netherlands, often also considered an NPM forerunner, shows high influence rates of academics and more egalitarian, nonhierarchical structures. Also, the Dutch rectorate is viewed as comparatively weak. Apparently, a focus towards NPM does not necessarily imply a loss of academics' influence. Ultimately, it also became clear that decision-making in collegial bodies was still attributed considerable influence on most internal and academic matters.

9.3 Views on Institutional Management and Practice

9.3.1 Executive Management Structures at Universities

In the EUROAC study, academics were asked how they viewed and assessed the governance regime that is prevalent at their institution in various dimensions. They were asked, first, how they viewed the managerial style of university leadership

Table 9.5 Perceived top-down management style at the academics' institutions of higher education (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities	63	44	39	77	49	51	43	52	49	24	45	76
Juniors at universities	60	47	43	73	57	58	44	52	57	33	50	64
Seniors at other HEIs		60		88	53	51	35	65		10	52	
Juniors at other HEIs		57		78	63	56	36	70		29	47	

Question E5: At my institution, there is a top-down management style

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

and, in this context, what competence they attributed to university management and how they assessed the quality of communication between management and academics.

9.3.1.1 Top-Down Management Style

The introduction of executive style leadership structures and corporate models of governance at universities is one of the key propositions and elements of the NPM paradigm as briefly outlined above. Executive managers were expected to be able to steer and position the institution in an ever more competitive higher education landscape more effectively than often arduous bottom-up decision-making processes among all academics or members of the academic oligarchy. Strategic leadership is thus exerted from above. In the survey, academics were asked to assess to what degree there was a 'top-down management style' at their institution. This question corresponds most closely to the extent of 'managerial governance' in the model proposed by de Boer et al. (2007).

With 77 and 76%, respectively, university professors in Ireland and the UK most often agree that there is a top-down management style at their institution. As Table 9.5 shows, this is also stated frequently by professors in Austria (63%). The average across European countries is 51%. On the other hand, only 24% of Norwegian university professors are convinced that this is the case. The responses to this item are more varied across countries than the responses to other issues of management addressed in the questionnaire.

Juniors at universities perceive even more strongly a top-down management style than seniors (53% on average). However, the answers are similar as regards the individual countries.

At other higher education institutions, a top-down management style is reported even more frequently: on average 55% for seniors and 56% for juniors. Hence, the variation across countries is more striking: between 88% of the Irish seniors and only 10% of their Norwegian colleagues. Germany (35%) and Norway are the only countries where fewer professors at universities of applied sciences state top-down management than at universities. In contrast, top-down management practices are reported much more often for other higher education institutions than for universities.

Table 9.6 Perceived competent leadership at the academics' institutions of higher education (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities	42	40	41	30	32	41	36	42	36	33	49	25
Juniors at universities	35	44	49	26	21	36	30	40	28	39	42	22
Seniors at other HEIs		34		35	32	43	37	35		50	43	
Juniors at other HEIs		29		22	19	38	30	32		46	37	

Question E5: Please indicate your views on the following issue: Top-level administrators are providing competent leadership

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

The result of the survey confirms the conventional wisdom that management has become extremely powerful in the three countries named above, which could be characterised as an 'NPM group' of countries (UK, IR, AT). In these countries, strong university leadership was either induced by budgetary or performance pressures (such as in the UK already in the 1980s and in Ireland around 2005) or directly imposed by law (as in the case of the Austrian University Law of 2002). As will be discussed below, this curtails not only the collegial power of academics but also their work morale. In Ireland, for example, a heated public debate followed, with strong resistance on the part of academics who claimed that: 'Collegial culture was being replaced by a pro-business, corporate, audit culture; […] authoritarian leadership styles were emerging; and there was a serious decline in staff morale' (Clancy 2007: 116).

Norway is the country where top-down management seems to be an exception: The envisaged introduction of stronger management structures met with the opposition of the universities; as a result of a political struggle, it is now up to universities to decide how to govern and steer themselves internally (Bleiklie et al. 2011: 169). In Germany, the power of the professoriate seems to have survived various managerial reforms. In Croatia, recent reforms could have strengthened managerial power, but academics did not observe a strong top-down management in 2010 when the survey was conducted.

9.3.1.2 Competent Leadership

Slightly more than one-third of the academics surveyed – on average across countries, institutional types and staff categories – are convinced that their top managers are competent leaders. The ratings vary to a lesser extent between the countries than those regarding top-down management. Regarding the competence of leaders, Portuguese seniors at universities react most often positively (49%). In contrast, as Table 9.6 shows, university professors in the UK (25%), Ireland (30%), Poland (32%) and Norway (33%) seem not to trust the abilities of their management. For the UK and Ireland, this corresponds to a strong notion of top-down management, and the results could be interpreted as a critical stance against the feeling of 'being

Table 9.7 Perceived good communication between management and academics (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities	23	40	40	19	28	29	28	32	27	34	32	21
Juniors at universities	17	31	33	19	16	18	17	32	24	33	31	21
Seniors at other HEIs		35		26	32	29	36	31		41	40	
Juniors at other HEIs		31		17	24	41	33	16		32	30	

Question E4: At my institution, there is good communication between management and academics

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

directed from above'. This is different in Norway where leadership at universities is neither considered very powerful nor particularly competent.

At other higher education institutions, senior academics consider their managers on average slightly more often as competent than seniors at universities (39% at other higher education institutions as compared to 37% at universities on average across countries), while juniors at both institutional types harbour a slightly more sceptical view (averages of 31.6 and 34.3%, respectively). As Table 9.6 shows, the highest percentages hold true for junior staff at universities in Croatia (49%), Switzerland (44%) and Portugal (42%); junior academics of the former two countries and of Norway consider their management more competent than senior university academics.

The differences between institutional types vary from country to country. Across the status categories, we note that leadership is rated as more competent at universities than at other higher education institutions in Portugal, Finland and Switzerland, while the opposite is true in Norway. Leadership at other higher education institutions is rated exceptionally in Norway as both highly competent and leaning least towards top-down management.

9.3.1.3 Good Communication

As the final issue of managerial style, the questionnaire addressed the quality of communication between management and academics. On average across countries, only 29% of university professors rate this favourably (Table 9.7). Good communication is most frequently stated by university professors in Switzerland (40%) and least often by their colleagues in Ireland (19%), the UK (21%) and Austria (23%). The latter three countries are those where academics most often note a top-down management style. In contrast, Switzerland seems to be a country with a strong focus on consensual, shared decision-making and is described as a 'very successful case of the implementation of network governance' (Bleiklie et al. 2011: 169). The reforms there emphasised the delegation of authority to the institutions and even led to 'a renewal of academic values rather than their replacement by more managerial approaches' (ibid.).

On average, junior staff at universities experience less good communication with management than their – more powerful – senior colleagues. In Poland, Germany, Austria and the Netherlands, junior academics see the least good communication with university leadership; these countries also show the strongest difference of opinion between juniors and seniors. In contrast, ratings by junior and senior academics at universities in the UK and Ireland of good communication are rare and stand at around 30% in Finland and Portugal.

Communication with management is on average considered slightly better at other higher education institutions than at universities across Europe. Again, the ratings by junior academics are less favourable than those by senior academics. Communication between management and academics is viewed most positively at these institutions by senior academics in Norway (41%) and Portugal (40%) and by junior academics in the Netherlands (41%).

The findings on 'good communication between management and academics' seem to support the pattern observed above. Of all countries, the least convinced that there is good communication are again the NPM group Ireland, the UK and Austria. The most convinced are Croatia and Switzerland. Generally, seniors at universities across all countries believe that there is better communication with management.

9.3.2 Academic Self-Governance

As was outlined above, one of the central features of recent university governance reforms was a curtailing of academic self-governance. Whereas in traditional European models, the university professors steered the university via – often cumbersome – decision-making processes in collegial, deliberative bodies, NPM-inspired reforms introduced or supported the development of stronger executive management structures. Whereas the rector was formerly considered a 'primus inter pares' simply voicing the decisions that the collegiate arrived at communally, the rectorate today is institutionally separated from and often also opposed to the academic profession. Collegial bodies, such as the university senate, have been weakened. They are left to deal mostly with purely academic matters – such as the development of curricula – and no longer play a vital role in the strategic steering of the university.

9.3.2.1 Collegiality in the Decision-Making Processes

As one might expect, collegiality is seen by many academics in the survey as being clearly in contrast to top-down management. As Table 9.8 shows, Swiss university professors perceive by far most often a high degree of collegiality in the decision-making processes with 48% of respondents agreeing to this notion as opposed to only 16% of university seniors in Ireland, 18% in Italy, 19% in the UK and 21% in Austria. It should be added that a relatively high level of collegiality is also reported for Portugal (39%) and Croatia (38%).

Table 9.8 Perceived collegiality in the decision-making processes (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities	21	48	38	16	31	33	27	28	18	27	39	19
Juniors at universities	22	38	27	19	22	27	27	24	12	21	36	20
Seniors at other HEIs		37		12	22	38	41	23		36	47	
Juniors at other HEIs		31		17	24	41	33	16		32	30	

Question E4: At my institution, there is collegiality in the decision-making processes
[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

At universities, Italian academics (12% of juniors and 18% of seniors) perceive least collegiality in the decision-making process. Collegiality also seems to play a relatively minor role at universities in Ireland (19 and 16%), the UK (20 and 19%) and Austria (22 and 21%), as well as according to junior academics in Norway (21%) and Poland (22%). Generally, juniors perceive a collegial decision-making structure less often than seniors with the exception of the three NPM countries Ireland, the UK and Austria (the same pattern holds true for perceived top-down management). Collegial decision-making is observed most frequently at universities in Switzerland (by 38% of junior academics and 48% of senior academics), as well as in Portugal (36 and 39%).

Respondents at other higher education institutions in Norway, Germany and the Netherlands notice far more collegiality than their colleagues at universities, whereas the opposite holds true in Switzerland, Finland and Ireland. In the case of Switzerland, the universities of applied sciences differ very clearly from the universities as far as 'governance setting and management structure' are concerned (Bleiklie et al. 2011: 170).

9.3.2.2 Lack of Faculty Involvement

The respondents were asked to state whether they considered a 'lack of faculty involvement' as a problem. One could have expected that this was stated most frequently in countries where little collegiality is noted, but this does not hold true for all countries. As Table 9.9 shows, lack of faculty involvement is most often viewed as a problem at universities in Ireland and Austria, but not as often as one might have expected in Italy and the United Kingdom.

On the other hand, academics at universities in Switzerland, as one could expect, seldom note a problem of lack of faculty involvement, but this is even more pronounced in Poland and in the Netherlands. The findings for Portugal are most surprising: More than half the respondents note a lack of faculty involvement, even though a relatively high degree of collegiality is noted in this country. Altogether, the responses as regards faculty involvement vary to a lesser extent between junior and senior academics than as regards collegiality.

Table 9.9 Perceived problem due to lack of faculty involvement (percentage[a])

	2010						2007/08					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities	59	28	54	62	18	27	45	28	40	36	51	45
Juniors at universities	67	28	51	58	16	30	46	30	38	32	54	33
Seniors at other HEIs		36		56	20	36	34	41		33	64	
Juniors at other HEIs		30		60	14	39	40	43		38	47	

Question E5: Please indicate your views on the following issue: lack of faculty involvement is a real problem

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

Table 9.10 Perceived strong emphasis on the institution's mission (percentage[a])

	2010						2007/2008					
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Seniors at universities	44	51	32	56	23	55	50	66	22	44	56	62
Juniors at universities	34	42	27	50	20	46	32	52	16	39	50	54
Seniors at other HEIs		50		51	20	58	42	60		64	58	
Juniors at other HEIs		47		42	16	47	32	56		63	45	

Question E4: At my institution, there is a strong emphasis on the institution's mission

[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

Respondents at other higher education institutions view faculty involvement relatively similarly to their colleagues at universities. Only those in Finland and in the Netherlands perceive the lack of faculty involvement as a problem more frequently than their university colleagues.

9.3.3 Competition and Performance

9.3.3.1 Emphasis on Mission

Placing strong emphasis on the institution's mission is an element of a governance régime that is closely associated with entrepreneurial notions of a university/an organisation and with corporate-style steering mechanisms. Thus, the emphasis on a mission can be viewed as another key indicator for the existence of the NPM paradigm and of 'managerial governance', and it could correlate with top-down management. However, one could argue that emphasis on mission is closely linked to a competition performance orientation and market-like governance structures.

Altogether, as Table 9.10 shows, the statements regarding an emphasis on the institution's mission vary substantially by country. Among university professors,

Table 9.11 At my institution, there is a strong performance orientation: strong views (percentage[a])

	2010						2007/2008				
	AT	CH	HR	IE	PL	NL	FI	IT	NO	PT	UK
Seniors at universities	48	52	40	51	59	68	67	23	50	40	69
Juniors at universities	49	56	36	57	58	67	58	21	51	36	67
Seniors at other HEIs		58		23	50	51	61		46	22	
Juniors at other HEIs		46		18	55	33	58		52	23	

Question E4: At my institution, there is a strong performance orientation
[a]Responses 1 and 2 on a scale from 1 = strongly agree to 5 = strongly disagree

they range from 66% in Finland, 62% in the UK, and half or more in Ireland, Portugal and Germany to less than a quarter in Italy (22%) and Poland (23%). Throughout, junior staff at universities notice a less pronounced emphasis on a mission (ranging from 54% in the UK to 16% in Italy). The responses are similar to those on top-down management in the UK and Ireland, but not in Austria (the third country with a strong NPM approach).

The responses by academics at other higher education institutions are similar in this respect in almost all countries. However, academics at these institutions in Norway note a substantially stronger emphasis on the institution's mission than their university colleagues: The respective figures for seniors and juniors (64 and 63%) are higher than in all other countries.

9.3.3.2 Performance Orientation

Is performance orientation really closely linked to the currently popular management concepts? According to the theoretical model by de Boer et al. (2007), performance orientation is a key aspect of the NPM paradigm that needs to be assessed separately from purely institutional governance structures. While it is advocated in NPM- inspired governance regimes, it is emphasised in other contexts as well and, thus, needs to be viewed separately from specific organisational setups.

A strong performance orientation is observed by about two-thirds of university professors in the UK (69%), the Netherlands (68%) and Finland (67%). In most countries, the responses range from more than half to more than one-third – among them Austria and Ireland, that is, besides the UK, the other two countries with a strong NPM thrust. The least performance-oriented country seems to be Italy (23%), as Table 9.11 shows. The responses by junior academics do not differ substantially from those of senior academics in the respective countries.

On average across Europe, performance orientation is less pronounced at other higher education institutions than at universities. While the difference is small in some countries, it is most obvious – less than half – in Ireland and also substantial in Portugal and the Netherlands.

9.4 Conclusion

The academics' views on the prevailing management practices and their notions of their influence suggest that the current management styles at higher education institutions vary substantially across European countries. Table 9.12 provides an overview of the findings presented above for universities and both academic status groups.

Two questions guided the previous analysis: What is the relationship between strong executive governance on the one hand and collegiality and academics' influence in the various European countries on the other? Is performance orientation closely linked to similar management styles across Europe?

For most countries, academics note a clear contrast between strong executive governance and collegial decision-making. Ireland, the UK and Austria show the strongest notions of top-down governance and the lowest levels of collegiality in the decision-making process. Vice versa, in Switzerland, Croatia and Portugal, a strong emphasis on collegiality corresponds to the least frequent notions of a top-down management style. Possibly, the Netherlands can be viewed as the only country where strong management and collegiality (as well as influence of academics) are not viewed as clearly contrasted.

Regarding influence and staff participation, a general pattern can be perceived where academics state having less influence in countries with an emphasis on executive governance (high top-down management, low collegiality). However, the correlation is less clear, and there are notable exceptions such as Switzerland and Norway which show both low influence rates and low top-down management with high (Switzerland) or medium (Norway) degrees of collegiality. Interestingly, the influence rates of junior and senior academics differ least in the two countries with the strongest notions of top-down management: Ireland and the UK. This supports the view that systems with stronger executive leadership structures favour flatter hierarchies among academic staff. This is not true, however, for Austria, as there remains a hierarchical differentiation between juniors and seniors (a result that was also anticipated by Pechar 2005).

Table 9.12 Differences of governance and management practices by country in the eyes of university academics

	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK
Influence in department	~/–	–	+	–	–/~	+	+/~	~/–	–	–	~	–
Influence in faculty	–	–	+	–	–	~	+/–	~/–	–	–	~	–/~
Influence in university	–	–/~	+/~	–	–	–	+/~	~/–	–	~	+	–/+
Top-down management	+	–	–	+	~	~	–	~	~	–	–/~	+
Good communication	–	+	+	–	~/–	~/–	~/–	~/+	~	~/+	~/+	–
Collegiality in decision-making?	–	+	+/~	–	~	~	~	~	–	~	+	–
Mission orientation	~	~	–	+	–	+	~	+	–	~	+	+
Performance orientation	~	~	–	~	+	+		+	–	~	–	+

+ high, – low, ~ middle, senior/junior (in case of split results)

As regards links between governance and performance orientation, the United Kingdom could be cited as the country that conforms most closely to the hypothetical 'NPM standard' (see de Boer et al. 2007): strong top-down management, high performance and mission orientation, low levels of academic self-governance or collegiality in the decision-making process and little personal influence of individual academics on the steering of different institutional levels.

Ireland and Austria correspond to the NPM model in various respects, but there are notable differences with the UK: In both countries, the mission and performance orientations are decidedly less strong. Especially in Austria, reforms seem to be backed not so much by economic, performance-oriented schemes focusing on competition but rather by a direct imposition or prescription of NPM-style governance mechanisms (strong rectorates, curtailing of academic self-governance, low influence rates) on universities. Competition does not seem to be the driving force behind institutional changes. There is also a notion of protest in the results in Ireland and Austria, as both countries only recently underwent major reforms or are currently in the process of restructuring. Academics are experiencing far-reaching transformations. This also helps to explain why Ireland emerges throughout as the country with quite critical academics.

Some European countries emphasise performance without encroaching on more participatory forms of university governance: the Netherlands which is next to the UK shows the highest performance orientation, Finland and – to a lesser degree – Poland. In the Netherlands, performance orientation is strong while maintaining higher levels of collegiality and among the highest levels of academics' personal influence with moderate to high rates of top-down management. The Dutch case seems to be a mix between NPM-inspired schemes and network governance approaches, possibly stemming from the traditionally consensus-based, shared decision-making processes in the Dutch political system ('Polder politics'). Also, in Finland, performance orientation and good communication with management and collegiality seem to function alongside each other. Poland shows medium to high rates of top-down management and performance orientation as well as low influence rates, but also some influence of collegiality, in a country that is currently shifting towards NPM. Norway also finds a middle way, although one that is hard to explain, as there is a variety of governance schemes in higher education.

In Switzerland, a clear split between the nonuniversity and the university sector can be observed. The highest levels of collegiality and the best communication structures with management are measured (corresponding to low levels of top-down management) at universities, while the universities of applied sciences operate in a more strongly NPM-inspired environment. The university sector thus represents a proponent of network governance. However, consensual, shared decision-making comes at the expense of individual influence on the decision-making process.

Three other countries can be viewed as not shaped by strong NPM thrusts in higher education at the time the surveys were carried out. Croatia emerges as the country with some of the highest influence rates, best communication and high levels of collegiality, while top-down management, performance orientation and mission orientation seem to play a relatively minor role. Similar results can be found

for Portugal, albeit less pronounced and with a strong focus on mission orientation. The German system shows low rates for top-down management and high levels of influence for senior university staff, as well as rather inconclusive results on performance orientation and competition. There is a notable split between juniors and seniors on various issues, especially concerning communication with management and influence, pointing to more hierarchical structures in the academic system (see Teichler 2011).

Italy emerges as the most 'negative' country in the survey. Italian academics perceive by far the least amount of collegiality, but also few pressures in terms of performance and mission orientation, low influence rates and medium levels of top-down management; the Italian higher education system (before the reforms introduced by the Gelmini Law of 2010) is definitely not an NPM system, but – in contrast to other countries with a low NPM thrust – is characterised by great discontent on the part of the academics.

Altogether, the findings of the survey caution views according to which convergent trends of governance in higher education are assumed across Europe. Both aspects of NPM as well as aspects of network governance can be found to varying degrees and with different focal points in each of the European countries analysed, thus underscoring the diversity of higher education systems. We must bear in mind that the surveys were undertaken at a certain point in time; therefore, they cannot establish trends of reform of governance. However, they certainly mirror different stages of reform in each country.

In conclusion, while the tidal wave of NPM-inspired reforms has swept over the European higher education landscape, it broke differently and with varying intensity in each national context, partly also dismantling academic self-governance along its way. While some countries have been hit earlier (UK), some are in the midst of a reform process (AT; IRL) and some were barely touched by reforms at the time of the survey (HR, IT). In some countries, reforms encountered resistance by more resilient structures and traditions (DE); in others, this 'wave' met with strong countercurrents such as network governance (NL, CH). In many countries, only certain elements of NPM were implemented, with each system adapting in its unique and specific way, resulting in an array of institutional provisions across Europe.

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Chapter 10
New University Governance: How the Academic Profession Perceives the Evaluation of Research and Teaching

David F.J. Campbell

10.1 Introduction: New Public Management, Network Governance and Evaluation

We refer to the public management perspective that was introduced by Ewan Ferlie, Christine Musselin and Gianluca Andresani (Ferlie et al. 2008, 2009) as our conceptual starting point for governance in higher education, a perspective that also emphasises quality assurance and quality enhancement. The authors assert that *two dominant narratives* exist (even co-exist), which they group under the headings "New Public Management" (NPM) and "Network Governance". These two "governance paradigms" will also provide a conceptual framework for our analysis. Following Ferlie et al. (see also Bleiklie et al. 2011), commonly implemented NPM-inspired reforms in Europe include (1) the introduction of non-academic executive leadership (strong rectorates or presidents) and a top-down management style, (2) an increased level of competition, (3) stronger vertical differentiation between institutions, and (4) tightened budgetary constraints, as well as (5) a greater emphasis on performance and performance measurement, assessment and monitoring. This chapter will focus on two of the five main characteristics of NPM as identified above: stronger management structures at universities and changes at the level of institutional governance, and the influence of quality assurance and quality enhancement on academic work (evaluation of research and teaching). All these reforms have a direct impact on the academic profession, changing its identity, status and tasks.

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The second concept of network governance refers to the emerging interplay of different actors and institutions in network-style and *co-opetitive* (cooperating and competing, see Brandenburger and Nalebuff 1997) relationships, which is also gaining in importance in higher education. It represents a form of multi-level governance, encompassing a greater range of actors engaged in shared decision-making processes and interactions between various layers of influence. This is illustrated, for example, by the growing role of external evaluation agencies or trans-university expert communities (peer-review panels). Another example would be the strong focus on consensus and the co-governance and coordination of universities in Switzerland (see Bleiklie et al. 2011). In our analysis, we will try to trace elements of network governance in higher education and discuss propositions accordingly.

Several *features of evaluation* (of both research and teaching) seem to be highly compatible with some of the key premises and propositions of governance that are *based on principles of New Public Management* (Ferlie et al. 2008, 2009). These are:

1. stressing performance, also connecting performance with funding (of institutions as well as individuals), management and governance;
2. measuring performance (which can be done in the context of evaluation);
3. emphasising market-based reforms and introducing more elements and procedures of competition (several cross-references may be drawn between competition and performance).

In addition to this obvious conceptual overlapping of evaluation with NPM, evaluation could also be applied to *network governance*. *Interesting features* may be (see Ferlie et al. 2009):

1. evaluating the performance of networks that link different higher education institutions or actors (the quality of networks);
2. applying evaluations to the self-governance of networks in higher education;
3. in and for peer review, communities of experts are being involved that typically cross-cut different institutions and organisations, often located in various countries, implying that such communities are frequently structured and function as networks.

This short overview shows that evaluations in these areas are compatible (at least in principle) with and applicable to New Public Management governance and network governance. *Evaluation-based quality governance of higher education works in both frames*: in practical terms, we may also want to assume a certain feasibility of hybrid combinations of both governance approaches in higher education. In conceptual and empirical terms of governance, we seek to see whether evaluation can be "cross-connected" or "explained" by NPM and network governance, with a focus on NPM. We conclude by summarising our findings and propositions, emphasising the tentative character of our analysis. Furthermore, we stress that the following analysis does not seek to verify and/or falsify central propositions of NPM and network governances, but engages in free-floating reflections in relation to these topics.

10.2 Research Question and Methodological Considerations

The main research question of our analysis is: *How does the academic profession perceive the evaluation of research and teaching in higher education*? We qualify "evaluation" here as a manifestation or form of quality assurance and quality enhancement. Hence, evaluation can also be understood as a key approach to the internal and external governance of higher education. We mainly look at the data of the EUROAC survey, interpret these, and leverage the empirical findings to raise further issues and formulate some (tentative) propositions on the governance of higher education. We also discuss possible implications of NPM (New Public Management) and network governances, but refer more specifically to NPM. *We concentrate our analysis on the EUROAC data for the universities*, and summarise the findings for the other higher education institutions. The rationale for this focus on universities is that other higher education institutions are less represented in the EUROAC survey and that it is fairly heterogeneous.

10.3 Governance of Higher Education and Evaluation

Evaluation represents a crucial approach for the governance of higher education. Construed more broadly, it contributes to quality assurance and quality enhancement in higher education and can thus be interpreted as a form of "*quality governance*" (*quality-based governance*, *quality-oriented governance*). Evaluations typically address university research and teaching. They also exert an impact on academic careers or could be leveraged for such purposes. *Quality enhancement defines a supreme goal for quality assurance*, although traditionally, the emphasis of quality management (QM) systems was on quality assurance. Currently, a shift in favour of quality enhancement is being asserted. The contemporary European mainstream consensus about evaluation of and in higher education is summarised in the policy document "Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ENQA 2009). Evaluations (Campbell 2003: 109) may: (1) implement "complex and sophisticated feedback mechanisms into the university system"; (2) develop "an 'academic market', by emphasising market or market-similar principles"[1]; (3) support the "improvement of the 'rationality' and decision-making of university systems"; (4) and legitimate the use of public sources and resources, particularly in the case of institutional "public basic funding (General University Funds, GUF)" of higher education institutions. Evaluation, as a procedure, focuses on analysing (framing) the quality of higher education, thereby referring largely (but not exclusively) to output: in addition to quality, evaluation can analyse efficiency,

[1] On the idea of "quasi-markets" for academia, see also: Denters et al. (2003) and LeGrand and Bartlett (1993).

relevance, effectiveness, and viability (Campbell 1999, 2003). There are a multitude of quality assurance procedures in higher education, which are sometimes called assessments (OECD 2008: 265–277): e.g. accreditation; audit or review; and certification or certificate (see also Teichler 2006).

National systems of evaluation of higher education often differ and may also change (Campbell 1997, 2003; Geuna and Martin 2003). For example, the Research Assessment Exercises (RAEs, see http://www.rae.uk.ak/) in the UK represent one of the most "institutionalized forms of research evaluation in the OECD economies" (Barker 2007: 3) or "one of the most advanced evaluation systems in Europe" (Geuna and Martin 2003: 280). The RAE may be classified as a "systematic, comprehensive and disciplinary-based institutional ex-post research evaluation" (Campbell 2003: 110–112) carried out at universities and in the higher education sector in general, thus also addressing "other higher education institutions (HEIs)" (Campbell 2006a; Pechar 2006). The RAE falls into the category of a "strong research evaluation system" (Whitley 2007: 9). For the governance of higher education, the UK RAE marks a reference (even ideal typical reference?) for the application of university research evaluation and also seems compatible with NPM. In their reform debates, other countries and higher education systems frequently discuss whether or not this UK approach should be implemented, partly implemented or rejected. Currently, the RAEs are evolving into the Research Excellence Framework (REF) for higher education in the UK (see http://www.hefce.ac.uk/research/ref/).

10.4 Factors That are Relevant for the Evaluation of Research and Teaching

As stated above, the key research question for this section is: *How does the academic profession perceive the evaluation of research and teaching*? For the purpose of a first and more broadly framed empirical and quantitative analysis, we carried out a factor analysis of the EUROAC survey. The factor analysis is a test on which variables (indicators) can be grouped together on the basis of correlations, and, thus, supports the formulation and development of (working) propositions concerning the evaluation of research and teaching in higher education. We conducted the factor analysis with the whole unweighted data set that included all countries, both institutional types (universities and other higher education institutions) and ranks (senior and junior staff). The factor analysis was undertaken via standard methodological procedures and rotated the results of *Varimax* with *Kaiser Normalisation*. We are interested in exploring the whole space (universe) of variables (indicators) that can contribute to our research question. The selected variables in Table 10.1 address possible impacts and consequences of the evaluation of research and teaching; they follow an *inductive rationale* of trying out and being curious about potential effects.

Table 10.1 Selected views and activities of academics and their perceptions of institutional management factor analysis, rotated component matrix[a]

	Component				
	1	2	3	4	5
How would you rate your overall satisfaction with your current job?	.072	.632	.083	−.033	−.114
You are encouraged to improve your instructional skills in response to teaching evaluations	−.136	.209	.288	.398	.084
Articles published in an academic book or journal	.028	−.119	−.058	.056	.767
Peer-reviewed	−.037	.035	.048	−.121	.705
The pressure to raise external research funds has increased since my first appointment	.126	−.164	−.110	.593	−.234
Your institution emphasises commercially-oriented or applied research	.057	−.017	.049	.782	.040
A top-down management style	−.034	−.667	.091	.116	.033
Collegiality in decision-making processes	.180	.736	−.008	.074	.057
Performance-based allocation of resources to academic units	.839	.011	.095	−.001	−.017
Evaluation-based allocation of resources to academic units	.834	.031	.105	−.020	−.039
Funding of departments mainly based on numbers of students	.091	−.011	.811	.097	−.043
Funding of departments mainly based on numbers of graduates	.213	−.008	.788	−.063	.026
Considering the research quality when making personnel decisions	.678	.258	.051	.094	−.010
Considering the teaching quality when making personnel decisions	.495	.436	.149	.123	.091

[a]Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalisation; Rotation converged in six iterations

Table 10.1 shows how the components cross-refer to the different input variables. All variables (indicators) here express (primarily) the *perception of the academic profession*. To interpret the factor analysis we suggest focusing on "components" one and two. We suggest an analytical interpretation of these two components and offer two propositions for discussion.

Component One/Performance orientation that is also evaluation-based, *representing one governance approach in higher education that refers to evaluation, quality assurance and quality enhancement*: This first component correlates most strongly with the performance-based *and* evaluation-based allocation of resources to academic units. Hence, it may be difficult to imagine a performance orientation for resource allocation without evaluation or by circumventing evaluation. The other

strong positive correlations align with the taking of personnel decisions concerning the quality of research and teaching. The positive correlation in relation to the funding of departments based on numbers of graduates is considerably weaker. *The impact of quality in research and teaching on personnel decisions is regarded as a legitimate way of cross-linking performance*, *evaluation*, *resource allocation and resource re-allocation*. *However*, *research plays a more prominent role than teaching*. On the other side of the spectrum, this component correlates negatively with top-down management. Perhaps this shows that a too top-down hierarchy restricts abilities to make fair decisions based on performance and quality. *Does this mean that an effective and sustainable governance system of quality assurance and quality enhancement and applying evaluation of research and teaching in higher education only function* (*in the long run*) *when hierarchies are not too sharply drawn*? Do over-hierarchical organisations perform less well or even under-perform in higher education?

Component Two/Job satisfaction and collegiality in decision-making, *not undervaluing the potentially positive aspects of teaching*: This second component correlates most highly with collegiality in decision-making and overall satisfaction in the current higher education job, and most negatively in a top-down management style. This could mean that collegiality contributes the most to job satisfaction and that top-down management is counterproductive. *Should organisations or higher education institutions want to create an inner-organisational atmosphere of satisfaction*, *this may demand that collegial decision-making processes have been put in place and hierarchies that were too top-down were and are being avoided*. Are governance systems of quality assurance and quality enhancement in higher education, using evaluation measures for research and teaching, challenged to develop and implement collegial decision-making processes? *What could or does* "*collegial evaluation*" *mean*? Is it necessary to design evaluation so that it goes hand in hand with job satisfaction if the evaluation is to be effective and sustainable in the long run? Interestingly, this component correlates more closely with teaching quality than with research quality (and their effects on personnel decisions), and there is also a positive correlation with the encouragement to improve instructional skills in response to teaching evaluations. *This may mean that a university governance system* (*internal system of governance*) *should not underestimate the potentially positive effects that a good design and process of teaching can have for the whole higher education institution*. Is a great or a one-sided emphasis on research sometimes (or even often) counterproductive for the "institutional happiness" of their academic members? Are the balancing and re-balancing of research and teaching one of the crucial keys to creating and fostering job satisfaction in higher education? From the perspective of job satisfaction, it may also be necessary, at least in some contexts, for universities to engage simultaneously in research and teaching. *Governance systems in higher education*, *referring to quality assurance and quality enhancement*, *are perhaps confronted with the challenge of cross-linking more clearly*, *at least from a systemic perspective*, *the evaluation of research and teaching*.

10.5 Contexts for the Evaluation of Research and Teaching

In the following section, we try to take a closer look at some of the "context conditions" (still within higher education), which could be a potential influence on the evaluation of research and teaching. Some aspects of evaluation may only be sufficiently explained when also considering context.[2] The EUROAC data indicate that the interests of the academic profession (faculty) focus primarily on research or lean towards research. Academic publishing is closely associated with research activities at universities. There are different forms of academic publishing. Article publications (peer-reviewed or not, in journals and books) are crucial here. It is often asserted that they are more common in the English-speaking countries than in Continental Europe and represent more of a consensual frame of reference in the natural and technical sciences than in the social sciences and humanities.

The comparison of article output and degree of peer-review allows for the formulation of some interesting propositions for the universities and university systems (see Tables 10.2 and 10.3).[3] Switzerland has a high article output and a high degree of peer-review. However, senior faculty is much more efficient than junior faculty. In the Netherlands, senior staff and junior staff show greater similarities in their publication behaviour. Germany comes top with regard to article output, but bottom concerning the degree of peer-review. The UK is in the lower middle-field of article output, but has a high level of peer-review.

This raises the questions: how far is the governance of higher education (at least concerning publications and complementary research) leaning towards different incentive structures in these two countries? Do quantitative indicators play a greater role in Germany? Is there a greater emphasis on peer-reviewed publications in the UK, implying that they are valued more highly than non-peer-reviewed publications, and that the UK has developed more of an "academic culture of peer-reviewed publications" than Germany? Austria ranks lower with regard to article output and peer-review. Does this mean that the governance of higher education in Austria is not as clearly oriented towards peer-reviewed publications? All these questions and tentative propositions are confronted with the weakness that they are based on ("subjective") self-assessment (EUROAC survey) and not supported by ("objective") external verification (for example, by using bibliometric data bases). The gap in

[2] Let us briefly reflect on the theoretical concepts of knowledge, knowledge production and innovation systems. While earlier theories (models) were narrower, there is now greater sensitivity for context. Considering current theories, we could assert that there is a certain tendency to conceptualise and understand knowledge in a continuously broader sense (see Carayannis and Campbell 2012). Knowledge and knowledge production (research, teaching and education) represent crucial features of and for universities and other HEIs.

[3] The means (mean values) in Table 10.2 are calculated as unweighted averages of the different (available) national averages (values), thus representing an *average of the national averages*. This logic of means also applies to all subsequent tables and to Figs. 10.1 and 10.2.

Table 10.2 Number of articles published in academic books or journals (arithmetic mean)

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	5.2	15.3	7.5	10.4	4.0	11.2	15.4	10.1	10.1	7.4	9.8	7.5	9.49
Juniors at universities	2.9	4.1	3.6	4.6	3.7	7.8	4.8	3.7	7.5	2.8	4.5	3.9	4.49
Seniors at other HEIs		4.9		5.3	3.4	1.4	4.4	1.4		6.4	7.2		4.59
Juniors at other HEIs		2.4		1.6	4.0	1.1	1.4	1.0		2.7	3.0		2.38

Question D4: How many of the following scholarly contributions have you completed in the past 3 years?

Table 10.3 Peer-reviewed publications (percentage)

	2010					2007/2008						
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	58	70	73	63	71	53	59	55	70	75	73	66
Juniors at universities	53	57	61	65	72	48	54	56	69	66	68	61
Seniors at other HEIs		32	47	48	33	13	36		74	62		44
Juniors at other HEIs		33	46	54	18	8	26		60	71		42

Question D5: What percentage of your publications in the last 3 years were …

favour of the senior staff is greater concerning article output, but smaller with regard to peer-review. Despite a general lead position here of senior staff, this may mean that junior staff is increasingly willing to publish peer-reviewed work. Does this indicate a trend that junior staff (younger age cohorts) outside the English-speaking countries is moving in the direction of peer review? *This would indicate the diffusion and spread of peer-reviewed articles as an accepted means and form of publishing from the English-speaking countries to the academic communities in Continental Europe and the Nordic countries*. National differences may also be explained by referring to different "academic cultures of publishing". Academic cultures and academic publishing cultures may also correlate with "cultures of evaluation". *Would an increasing willingness of the non-English-speaking European countries to publish articles* (*in English*) *in international peer-reviewed journals imply that there could be a gradual evolution and conversion to more* "*unified academic cultures*" *and the establishment of internationally accepted global standards for what is regarded or understood as quality in higher education*? This could have implications for the evaluation of research in higher education in the sense that there may be more involvement of cross-country evaluation learning. Ramifications could also spread to the evaluation of teaching.

Table 10.4 Overall satisfaction with current job (arithmetic mean[a])

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	2.2	1.9	2.0	2.5	2.2	2.1	2.2	2.2	2.1	2.2	2.3	2.6	2.2
Juniors at universities	2.4	2.3	2.1	2.6	2.4	2.2	2.5	2.3	2.4	2.3	2.6	2.8	2.4
Seniors at other HEIs		1.9		2.3	2.1	2.1	2.3	2.2		2.3	2.4		2.3
Juniors at other HEIs		2.1		2.4	2.5	2.3	2.7	2.3		2.3	2.9		2.5

Question B6: How would you rate your overall satisfaction with your current job?
[a]Scale of answers 1 = Very high to 5 = Very low

In comparing institutional types, we note that academics at universities publish more and that a greater share of their publications is peer-reviewed. This expected difference, however, varies by country. In the UK, Norway, Poland, and Portugal, this university dominance is not as strong as in the other countries, perhaps implying that the differences and divisions between universities and other HEIs are more in flux.

In general, the *overall satisfaction* of the academic staff (academic faculty) with their current job in higher education is quite high. Measured on a scale from 1 to 5 (1 = very high, 5 = very low), the average score for seniors at universities is 2.2 and 2.4 for juniors (see Table 10.4). In each country, the satisfaction rate is higher than 3 for senior staff, but there is still a national variation. Senior staff is most satisfied in Switzerland (1.9), Croatia (2.0), Italy (2.1), and the Netherlands (2.1) and least satisfied in Portugal (2.3), Ireland (2.5) and the UK (2.6). By and large, staff at other higher education institutions is less satisfied than at universities; again, seniors are more satisfied than juniors.

There is a clear perception among academic staff that the pressure to raise external research funds has increased recently, when compared with the times of the first institutional appointment of the individual academic staff (see Table 10.5). At universities, the average scores for seniors are 1.6 and 1.9 for juniors (1 = strongly agree, 5 = strongly disagree). In some countries, there is a connection between relatively lower job satisfaction rates and the perception of greater pressure to mobilise more external research funds. These countries are Germany, Austria, Ireland, and the UK. Also, the pressure to raise external research funds is greater for academic staff at universities than at the other higher education institutions.

Whether or not academics perceive the *comprehensive exercise of a top-down management style at their higher education institution* seems relevant (see Fig. 10.1). At the universities, on average, juniors (2.5) consider themselves to be slightly more exposed to top-down management styles than seniors (2.6). The three countries where senior staff has the comparatively strongest perception of a top-down management style are the UK, Ireland (1.9 each) and Austria (2.2). The weakest perception is in Portugal (2.7), Switzerland (2.7), Germany (2.8), Croatia (2.8), and Norway (3.5). On average, seniors at other higher education institutions perceive slightly more of a top-down management style than seniors at universities.

Where academics at universities perceive a strong top-down management style, collegiality rates lower (UK, Ireland and Austria) (see Fig. 10.2). In countries with

Table 10.5 Views on the conditions for research (arithmetic mean[a])

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities													
Pressure to raise external research funds[b]	1.3	1.8	2.3	1.5	1.7	1.5	1.3	1.5	1.8	1.6	1.6	1.6	1.63
Emphasis on comm./ applied research[c]	3.4	3.5	3.2	2.1	3.0	3.3	3.2	2.9	2.9	3.2	2.7	2.4	2.98
Juniors at universities													
Pressure to raise external research funds[b]	1.6	2.2	2.6	1.8	1.8	1.7	1.9	2.0	2.0	2.1	1.7	1.8	1.93
Emphasis on comm./ applied research[c]	3.5	3.2	3.2	2.4	3.0	3.3	3.3	2.9	3.0	3.2	2.9	2.5	3.03
Seniors at other HEIs													
Pressure to raise external research funds[b]		1.8		1.8	2.1	2.4	1.5	1.9		1.5	2.0		1.87
Emphasis on comm./ applied research[c]		1.9		2.3	3.3	2.5	2.2	1.8		2.7	2.8		2.39
Juniors at other HEIs													
Pressure to raise external research funds[b]		1.8		2.4	2.1	2.7	1.9	1.7		1.7	2.3		2.03
Emphasis on comm./ applied research[c]		1.9		2.5	3.2	2.6	2.2	2.3		3.0	3.0		2.49

Question D6: Please indicate your views on the following
[a]Scale of answers from 1 = Strongly agree to 5 = Strongly disagree
[b]The pressure to raise external research funds has increased since my first appointment
[c]Your institution emphasizes commercially-oriented or applied research

less top-down management, collegiality ranks higher (Switzerland, Portugal and the Netherlands). By and large, the respective findings at other institutions of higher education are similar.

This allows one to discuss the *proposition that the combination of exposing academic staff to thorough top-down management decision-making* (*amplified by a lack of collegiality*) *and greater pressure to raise external funds creates a working environment with relatively lower job satisfaction rates in higher education*. A negative correlation between low job satisfaction and top-down management and little collegiality and external funding pressure is most pronounced in the United Kingdom, Ireland and Austria. Hence, we may ask: Does this mean that academic staff at UK universities perceives the RAE (now REF) as leaning towards a top-down management approach? In Switzerland, high job satisfaction is linked to a perception of rare top-down management and little pressure to raise external funds.

As Table 10.5 shows, academic staff at universities does not assert that there is a strong emphasis on commercially-oriented research or applied research in their institution (3.0 on a five-point scale). Ireland and the UK are exceptions in this respect. This emphasis, however, is more pronounced, as one may expect, at other higher education institutions.

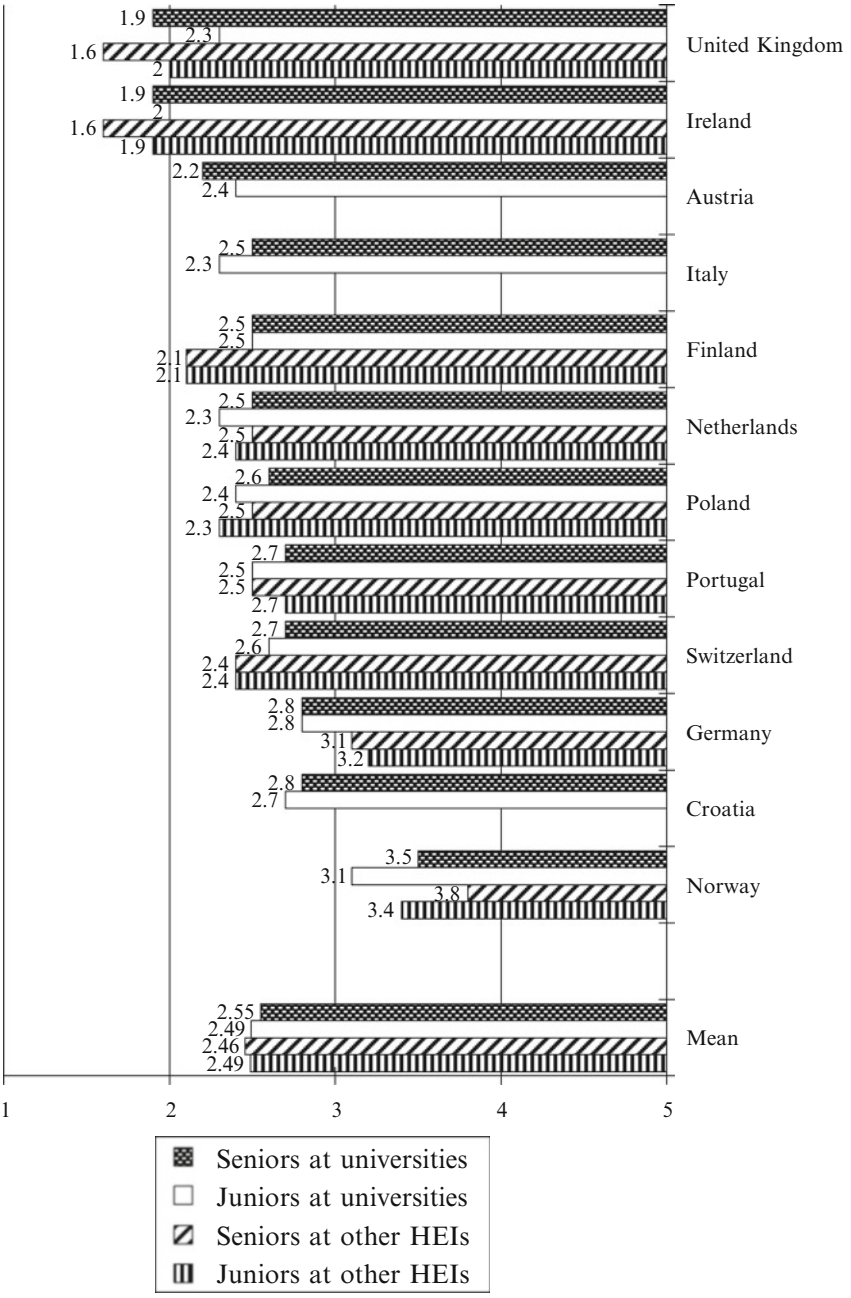

Fig. 10.1 Perceived top-down management style (mean[a])
Question E4: At my institution there is … a top-down management style
[a]Arithmetic mean on a scale from 1=strongly agree to 5=strongly disagree

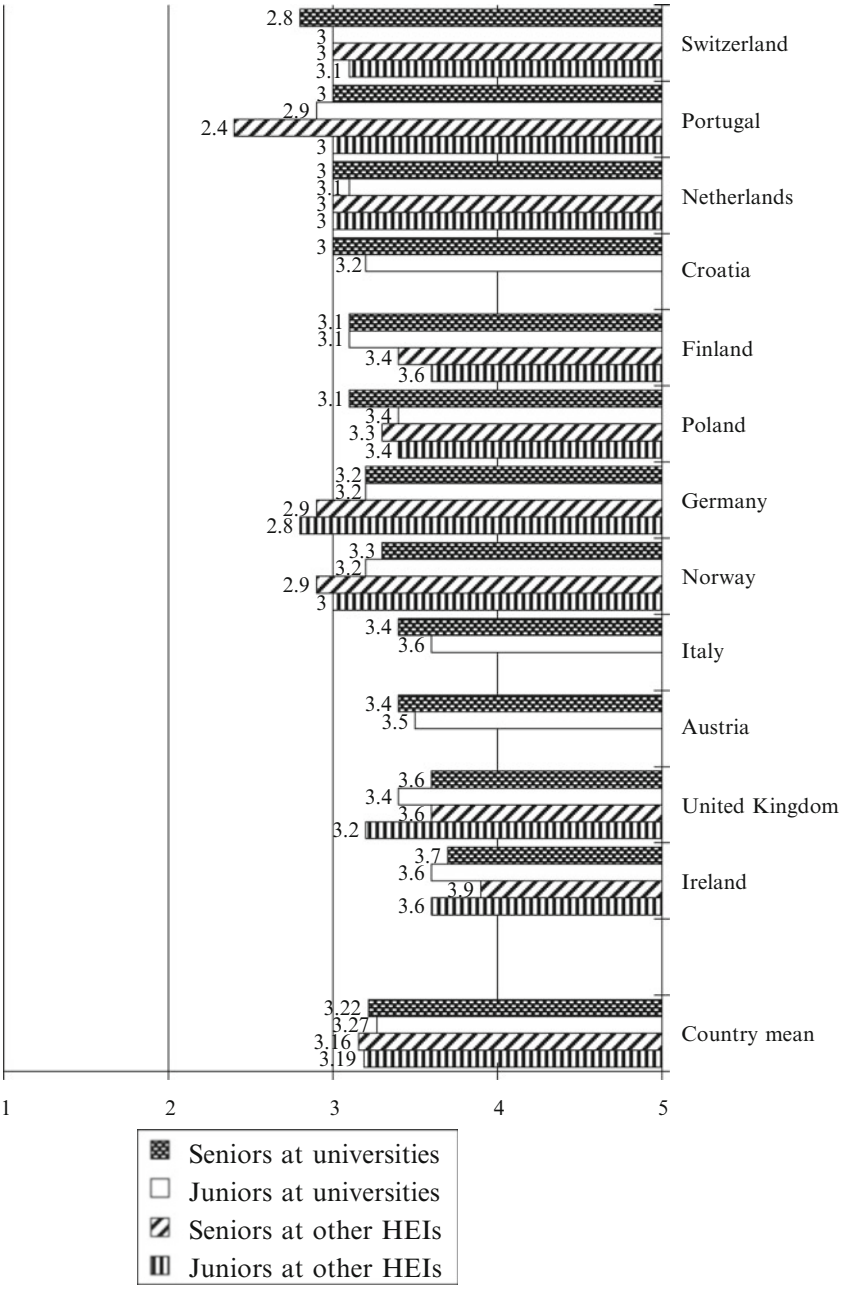

Fig. 10.2 Perceived collegiality in decision-making processes (mean[a])
Question E4: At my institution there is … collegiality in decision-making process
[a]Arithmetic mean on a scale from 1=strongly agree to 5=strongly disagree

Finally, the question arises: *how should* (*or could*) *a stronger leaning towards application be reflected in evaluation systems and procedures*? In epistemic terms, this creates evaluation challenges for university (higher education) knowledge production under "Mode 2" that is guided by the following principles: "knowledge produced in the context of application"; "transdisciplinarity"; "heterogeneity and organisational diversity"; "social accountability and reflexivity"; and "quality control" (Gibbons et al. 1994; Nowotny et al. 2001, 2003, 2006; Campbell 2006b; Campbell and Carayannis 2013; Carayannis and Campbell 2006, 2012). The practical challenge is: who could act as peer for peer review in a Mode-2-based or Mode-2-oriented evaluation approach?

10.6 Influential Actors in Evaluation

In the EUROAC survey, several actors (actor groups) who could exert a prime influence on decisions and decision-making were identified. They are: "government or external stakeholders", "institutional managers", "academic unit managers", "faculty committees/boards", "individual faculty", and "students". The following propositions can be formulated on the basis of the mean perceptions of *senior and junior staff at universities* across European countries:

1. *Management-based and faculty-based governance of evaluation*: Institutional and academic unit managers exert an influence that resembles the combined influence of faculty (faculty committees/boards and individual faculty) on the evaluation of research and teaching. *Management-based governance can be interpreted as a form of New Public Management in higher education*. Would faculty-based governance qualify as a form of network governance?
2. *Internal and external governance of evaluation*: Internal (institutional) governance is much more important for evaluation than external governance when external governance refers to "government or external stakeholders".[4] External governance is less important for the evaluation of teaching than for that of research. In research evaluation, there is slightly more external governance, but it still ranks behind the dominant influence of internal governance.
3. *Student influence on evaluation*: Students exert some influence on the evaluation of teaching, which the junior staff perceives as being greater than the senior staff. This could mean that junior staff is more exposed to teaching or to direct teaching evaluation and the possible consequences on the basis of evaluation results of teaching. As regards the evaluation of research, students have no influence. In conventional wisdom, there are no established models for how student assessment could be linked to research evaluation. Perhaps it is not desirable; perhaps it would open up innovative fields in and for quality enhancement.

[4] Portugal is the only country where, in a university context, most senior staff (based on their replies) assigned the decisive influence on the evaluation of university research to external governance.

Table 10.6 Primary influence of institutional and academic unit managers on evaluating research and on evaluating teaching (percent of academics stating this perception)

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities													
Research	82	33	21	32	53	56	53	53	29	28	19	42	42
Teaching	76	31	35	32	35	57	50	30	23	34	40	37	40
Juniors at universities													
Research	72	23	17	34	51	40	46	40	31	37	34	39	39
Teaching	63	18	25	27	41	39	40	25	25	39	46	27	35
Seniors at other HEIs													
Research		21		44	61	52	50	52		41	30		45
Teaching		19		39	50	39	53	41		44	12		38
Juniors at other HEIs													
Research		27		51	62	60	60	68		45	37		48
Teaching		18		48	48	38	51	40		28	47		39

Question E1: At your institution, which actor has the primary influence on each of the following decisions?

Despite the general picture that faculty and managers exert an equal influence on the evaluation of research and teaching at universities, there is greater national variation across the different higher education systems. The influence and role of (top-down) management are not the same in all systems. The comprehensive managerial influence can be measured by aggregating the "institutional managers" and the "academic unit managers". On average (for the universities), 42% of the seniors see a prime influence of institutional management in the evaluation of research and 40% in the evaluation of teaching (see Table 10.6). The corresponding average values for juniors at universities are slightly lower: 39% emphasise the managerial influence in research evaluation and 35% in teaching evaluation. Do these figures imply that junior staff is less exposed to the contextual managerial influence than senior staff? Austria is the country that comes top concerning the academic perception of managerial influence. *Managerial influence, as already discussed above, can be interpreted as a manifestation of NPM and NPM governance of evaluation in higher education*. In the case of Austria we find a correlative link between managerial influence, a perception of top-down management style (Fig. 10.1) and less satisfaction with the current job in higher education (Table 10.4). Interestingly, the UK and Ireland, which also rank high concerning the perception of a top-down management approach and rank lower with regard to job satisfaction, do not see such a strong managerial influence on the evaluation of research and teaching in their university systems. The academic university profession in the Netherlands and Germany perceives a strong managerial influence. In Finland, this is the case for the evaluation of university research, but not for the evaluation of university teaching.

This means that managerial-based implications of NPM governance for evaluation can take different forms (perceptions of a top-down management style and/or of

managerial influence on evaluation), *also allowing for national diversity*. Here, to a large extent, the academics in Switzerland give the opposite description to those in Austria. Academic university staff in Switzerland reports a less strong influence of management on the evaluation of research and teaching at universities. At the same time, they see less top-down management, and their overall job satisfaction in higher education is the highest when compared with the other European countries surveyed. Hence, Switzerland and Austria may be perceived as being at opposite ends of the same linear scale as the two extreme poles on a same linear scale.

At other higher education institutions, seniors and juniors see more of a managerial influence on the evaluation of research than at universities (see Table 10.6). However, senior university staff emphasise (slightly) more of a managerial influence on the evaluation of teaching. Juniors at other institutions, on the other hand, report a managerial influence on the evaluation of teaching more often than their colleagues at universities.

"External reviewers" for the regular evaluation of research and teaching may be seen in different ways:

1. *External reviewers can be regarded as an indication of how far the academic culture of higher education in a specific national higher education system emphasises peer review* ("*the culture of peer review*"): Earlier in our analysis, we noted that the volume of quantitative article output and the degree of peer review did not necessarily correlate positively (based on the survey data of perception of the academic staff).
2. *External reviewers are compatible with New Public Management governance and with network governance*: Managerial steering of universities can be based (co-based) on the assessment of external reviewers who can also be part of a self-governance of academic networks that transcend, cross-cut and cross-involve universities and other higher education institutions. *With the involvement of external reviewers*, *principles of NPM and of network governance overlap in a hybrid way*.
3. *Possible national variations in the evaluation of research and the evaluation of teaching*: In a national context, there can be a similar degree of involvement of external reviewers in the evaluation of research and teaching. It may, however, differ when the dimensions of research and evaluation are compared across national higher education systems.

How frequently do external reviewers evaluate research? According to the seniors at universities, the following five countries come first (see Table 10.7): Finland, Ireland and Austria (71% each), the Netherlands (68%) and the UK (63%). Universities in these countries strongly show managerial features. This could be interpreted as an indication that external review, NPM and network governance can and do overlap in empirical terms. With regard to the involvement of external reviewers in research evaluation, Switzerland positions itself in the middle (60%) and Germany lower (55%). In Germany, managers strongly influence research evaluation and there is an emphasis on publications but not on peer-reviewed publications.

Table 10.7 External reviewers as prime actors in the evaluation of research and teaching (percentage of academics stating this perception)

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities													
Research	71	60	61	71	24	68	55	71	48	47	22	63	55
Teaching	9	10	20	31	13	30	7	18	9	11	29	30	18
Juniors at universities													
Research	51	38	32	64	18	52	36	51	36	29	25	59	41
Teaching	3	6	11	36	12	16	3	6	8	10	52	30	16
Seniors at other HEIs													
Research		45		64	19	42	19	39		57	28		38
Teaching		8		22	15	25	11	27		15	52		26
Juniors at other HEIs													
Research		37		37	22	31	41	33		26	21		36
Teaching		7		38	10	21	0	16		7	42		19

Question E3: Who evaluates your teaching, research, and service regularly?

Regular evaluations of teaching by external reviewers are less frequent (see Table 10.7). Average means for university seniors are 18 and 16% for university juniors. Ireland (31%), the UK, the Netherlands (both 30%), and Portugal (29%) come first, whilst Switzerland (10%), Italy, Austria (9%), and Germany (7%) come last. In the English-speaking countries and the Netherlands, using external reviewers to evaluate teaching is common practice; for the German-speaking countries, the situation seems different. In Finland, while external-reviewer-involvement represents a more accepted approach in research evaluation, it is less the case for teaching evaluation.

Other higher education institutions place greater emphasis on external reviewers to evaluate teaching. This may reflect the fact that teaching activities are more important at most of these (non-university) institutions.

10.7 Consequences of the Evaluation of Research and Teaching on Higher Education

How far do evaluations and evaluation results engender consequences for universities and other higher education institutions? *Evaluation outcome could be used as a reference for* (*the internal and external*) *governance of higher education and may have implications for resource allocation*, for example the (public basic) funding of universities. In the UK, there is a direct feedback of the results of research evaluation (previously by the Research Assessment Exercises, now the

Research Excellence Framework) in the public basic financing of universities (Campbell 2006a; HEFCE 2010). An alternative design for higher education governance may emphasise basing consequences for governance on performance instead of evaluation. But then the following challenge arises: how to "measure" performance without evaluation? In conceptual terms, evaluations clearly cross-link and cross-refer with performance because they focus on output. However, they are not limited to output, so the meaning of evaluation and performance does not completely overlap. A specific *performance-sensitive definition* of evaluation may be: *evaluation supports a comprehensive and in-depth measuring and understanding of performance in higher education*. Evaluations help to make performance transparent and visible. Without evaluations, it is difficult to map and monitor performance. *Performance here is approached through* (*via*) *evaluations*. Evaluations may be demanding, cumbersome and work-intensive for higher education institutions, involving procedures that bind some of the capacities and capabilities of higher education. This must always be balanced against the potential (and prospective) benefits of evaluation and evaluation outcome. *Evaluation systems with no noticeable consequences* (*positive or negative*) *of evaluation may therefore be perceived as a bureaucratic burden by the academic communities*, *distracting the universities from other activities that are more important and more relevant*.

However, it should also be emphasised that the implications of evaluation could be designed very differently in institutional and social terms. They do not necessarily have to be financial. *The social and organisational construction of consequences or implications of evaluation allow*, *and even demand*, *social and organisational creativity and flexibility*. Structural (institutional) encouragement of motivation of and for academic staff may also qualify as a "consequence". There are many more such examples that are appropriate and necessary.[5]

At universities, the academics perceive that *there is more of a performance-based allocation of resources to academic units* (see Table 10.8). Seniors note a moderate influence of both these strategies: 2.8 for the performance-based and 3.2 for the evaluation-based approach (means on a scale from 1 = very much to 5 = not at all). It is only in Italy, Ireland and Portugal that a majority of the academic staff asserts that there are no or only few performance-based consequences for resource allocation. Concerning evaluation, in Finland, the Netherlands, the UK and Germany, the majority of university seniors emphasises evaluation-based consequences for resource allocation. These countries typically score higher in NPM or managerial-based governance but not always in the same proportion. Austria and Ireland score high on NPM and managerial-based governance, but evaluations

[5] For example, one consequence of the evaluation-of-teaching-system at the University of Applied Arts in Vienna is that it has implemented a relationship of mutual trust between lecturers and the leadership of the university, where the lecturers are the "only owners" of the (of their) evaluation results (see Blimlinger et al. 2010).

Table 10.8 Perception of institutional strategies related to research and teaching (arithmetic mean[a])

	2010				2007/2008						
	AT	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities											
Performance-based resources[b]	2.9	3.3	2.8	2.3	2.4	2.2	3.2	2.6	3.6	2.5	2.8
Evaluation-based resources[b]	3.3	3.6	3.2	2.8	2.9	2.7	3.4	3.3	3.7	2.9	3.2
Personnel decisions based on research quality[b]	2.8	2.8	3.0	2.3	2.6	2.5	3.4	3.0	3.3	2.2	2.8
Personnel decisions based on teaching quality[b]	3.5	3.5	3.4	2.9	3.3	3.0	3.7	3.3	3.4	3.0	3.3
Funding based on student numbers[b]	3.4	2.4	2.6	2.3	2.7	3.0	2.5	2.5	2.5	2.0	2.6
Funding based on graduate numbers[b]	3.6	3.1	4.0	2.4	3.2	2.1	3.3	2.5	3.3	3.3	3.1
Juniors at universities											
Performance-based resources	2.9	3.3	2.9	2.6	2.6	2.3	3.1	2.6	3.6	2.9	2.9
Evaluation-based resources	3.4	3.6	3.2	2.9	3.2	2.8	3.4	3.1	3.6	3.0	3.2
Personnel decisions based on research quality	2.7	2.7	3.1	2.3	2.6	2.7	3.5	2.9	3.4	2.4	2.8
Personnel decisions based on teaching quality	3.6	3.5	3.5	3.0	3.4	3.2	3.9	3.2	3.6	3.1	3.4
Funding based on student numbers	3.2	2.3	2.6	2.3	2.8	2.8	2.5	2.6	2.8	2.2	2.6
Funding based on graduate numbers	3.6	2.9	3.7	2.4	3.2	2.1	3.2	2.4	3.2	3.1	3.0
Seniors at other HEIs											
Performance-based resources[b]		4.1	3.1	3.1	2.9	2.8		2.3	3.6		3.1
Evaluation-based resources[b]		4.0	3.5	3.3	3.7	3.2		3.2	3.5		3.4
Personnel decisions based on research quality[b]		3.5	3.2	3.2	3.4	3.6		2.9	3.4		3.4
Personnel decisions based on teaching quality[b]		3.8	3.3	2.7	2.7	2.6		2.9	3.6		3.1
Funding based on student numbers[b]		2.3	2.9	1.8	2.2	1.9		2.7	3.1		2.4
Funding based on graduate numbers[b]		3.6	3.9	2.0	2.9	2.0		2.8	3.8		3.2
Juniors at other HEIs											
Performance-based resources		4.2	3.1	3.4	2.5	2.9		2.8	3.7		3.2
Evaluation-based resources		4.2	3.3	3.6	3.7	3.3		3.3	3.7		3.6
Personnel decisions based on research quality		3.8	3.3	3.6	2.6	3.5		3.4	3.5		3.3
Personnel decisions based on teaching quality		3.7	3.5	3.1	2.6	3.0		3.2	3.5		3.2
Funding based on student numbers		2.7	2.8	1.8	2.3	2.1		2.6	3.1		2.6
Funding based on graduate numbers		3.8	3.8	2.2	2.7	2.2		2.7	3.6		3.1

Question E6: How far does your institution emphasise the following practices?

[a]Mean of responses on a scale from 1 = very much to 5 = not at all

[b]Item formulation: performance-based allocation of resources to academic units; evaluation-based allocation of resources to academic units; considering research quality when making personnel decisions; considering teaching quality when making personnel decisions; funding of departments largely based on numbers of students; funding of departments largely based on numbers of graduates

and performance seem to have less effect on resource allocation in the perception of academic staff.[6]

Obviously, at universities the allocation of resources is more performance-based and evaluation-based than at other higher education institutions. This could lead to the proposition that universities in many European countries are more systematically exposed to evaluation systems.[7]

Research and teaching quality seem to have the strongest impact on how personnel decisions are taken at universities in the UK, the Netherlands, Finland, and Germany (and also Norway for research). According to senior academics, as Table 10.8 shows, research quality plays a more important role than teaching quality (mean of 2.8 as compared to 3.3), while the opposite is true at other higher education institutions. As we noted earlier, the academic profession is inclining towards research, so it does not really come as a surprise that research quality has greater consequences than teaching quality for the careers of academic staff at universities.

Furthermore, we can observe that:

1. *Departmental funding based on numbers of students is more important than departmental funding based on numbers of graduates*: Departmental funding in relation to the number of students is more common than in relation to the number of graduates. This ratio is valid for universities as well as for the other higher education institutions. At universities, student-based financing is more crucial in the UK, Ireland and the Netherlands, whereas graduate-based financing is more pivotal in Finland and in Norway. Both these funding approaches are less relevant in Austria.
2. *Encouragement to improve instructional skills in response to evaluation of teaching is less frequent than student-based funding*, *but more frequent than graduate-based funding*: According to seniors at universities, encouragement to improve instructional skills in response to evaluation of teaching is somewhat less frequent than student-based funding, but more frequent than graduate-based funding (compare Tables 10.8 and 10.9). In the university context, particularly in Italy, Ireland, the UK, and the Netherlands (and Norway for junior staff), there is an emphasis on improving instructional skills in response to evaluation results of teaching. Austria, Poland and Finland (particularly for seniors) rank lowest. In contrast, junior staff at universities and academics at other higher education institutions note a somewhat stronger encouragement to respond to teaching quality than the senior university staff.

[6] For the discussion of a comprehensive model of the evaluation of university (and university-related) research in Austria, see Campbell and Felderer (1999).

[7] An alternative interpretation here may be that respondents of other higher education institutions associated the performance-based and evaluation-based resource allocation (as a concept and term) more closely to research than to teaching.

Table 10.9 Views about teaching: encouragement to improve instructional skills in response to evaluation of teaching (arithmetic mean[a])

	2010						2007/2008						
	AT	CH	HR	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	3.4	2.8	3.2	2.6	3.7	2.7	3.2	3.9	2.5	2.8	2.9	2.7	3.0
Juniors at universities	3.4	2.8	3.4	2.5	3.6	2.7	3.4	4.0	2.3	2.4	3.0	2.5	3.0
Seniors at other HEIs		2.7		2.9	3.4	2.8	2.9	3.8		2.6	2.9		2.9
Juniors at other HEIs		2.6		2.8	3.4	2.7	3.1	3.8		2.4	3.1		2.9

Question C4: Please indicate your views on the following: You are encouraged to improve your instructional skills in response to teaching evaluations

[a]Mean of responses on a scale from 1 = strongly agree to 5 = strongly disagree

10.8 Conclusion

Our analysis addressed the following question: *How does the academic profession perceive the evaluation of research and teaching at universities* (*higher education institutions*)? Evaluation is understood as a form of quality assurance and quality enhancement that can be applied for purposes of internal and external governance of higher education. In the first section, we presented a brief overview of theories and concepts of higher education governance. We took NPM (New Public Management) and network governances as the two key concepts, but concentrated on NPM. In the analysis of the data of the EUROAC survey we focused on the universities. Where analytically appropriate, we introduced associations and made (conceptual) references to NPM (and network governance) for a more systematic and comprehensive interpretation of the data. References to NPM were easier, but more difficult for network governance, since none of the indicators we referred to could be qualified as "only" network governance. For example, "external reviewers" for the regular evaluation of research and teaching may be seen from both a perspective of network governance and of NPM governance. In addition, many (if not all) indicators allow for alternative interpretations. Some indicators may be aligned with NPM exclusively, but even this could be questioned, depending on the underlying premises or assumptions.

The analysis presented here does not aim to verify NPM and/or network governance as a governance approach either in empirical or in normative terms. Instead, our analysis focuses on offering interpretations of the survey data in connection with the evaluation of research and teaching. NPM and network governance serve as possible conceptual references to reinforce interpretations and perhaps explanations of the empirical data findings. These references may inform attempts to verify and/or falsify NPM and network governance. However, this would have to be a separate endeavour.

The analysis admitted a broad spectrum of interpretations for each indicator. Furthermore, we must bear in mind that it is based on "*subjective*" *perceptions of*

the academic profession that may even contradict "*objective*" *facts*. We suggest the following propositions for further discussion.[8]

(1.) "*Bad NPM*", "*good NPM*" *governance in combination with the evaluation of research and teaching in higher education*: Concerning NPM, there seems to be a "bad version" and a "good version" of NPM. *Bad NPM* is linked to the one-sided prevalence of a top-down management style. This correlates strongly with an overall dissatisfaction with the current academic job. On the other hand, there is also a certain acceptance in the academic profession that allocation of resources is performance-based and evaluation-based, and that research quality and teaching quality influence decision-making in connection with academic personnel and their careers. This is compatible with concepts of NPM. Interestingly, one finds greater acceptance of a performance-based resource allocation than an evaluation-based one. However, evaluation could be regarded as an approach (and as a spectrum of means) to measure and make visible performance and quality in research and teaching, *so it is difficult to imagine having transparency without evaluation*. These functions demonstrate how the evaluation of research and teaching can be integrated into and combined with internal and external governance of universities and other higher education institutions, and what role (or different roles) evaluations can play in NPM-based governance. One dilemma is that evaluations without implications or consequences may be regarded as a pointless bureaucratic burden. Are evaluations linked to implications or consequences? If so, what should these be? The emphasis of positive feedback loops as a consequence of evaluations offers important strategy opportunities for institutions, *and there is a need and a demand for creative and flexible social constructions of consequences or implications of evaluation in higher education in support of sustainable knowledge production and institutional learning*. Evaluations should not, however, be dominated by top-down management structures. "Fair" evaluations are evaluation systems that are not over-steered by top-down governance approaches. So how can evaluation systems of research and teaching be designed in (and for) higher education to avoid top-down management attitudes? In the university context, performance-based and evaluation-based governance for research seem to be widely accepted (less so for teaching). *Good NPM would be a performance-based*, *evaluation-based and quality-based governance of higher education*, *where governance and evaluation evolve* (*co-evolve creatively*) *without the negative side-effects of top-down management bureaucracy*.

(2.) *Different NPM country clusters of governance and evaluation in higher education*: Universities in the UK, Ireland, Austria and Italy score the highest concerning the perception of a top-down management style. In these higher education systems, the overall satisfaction with the current job is the lowest. Concerning evaluation systems, where evaluations have consequences or implications, where there are combinations of a performance-based and evaluation-based allocation of resources to academic units, and where research quality and teaching quality influence decision-making regarding personnel, the university systems of Finland,

[8] In our following discussion here we also refer to results of the factor analysis in Sect. 10.4.

the Netherlands, the UK, and Germany score the highest. External reviewers and peer review can associate with NPM as well as with network governance: concerning the regular involvement of external reviewers in the evaluation of research and teaching, the university systems of Ireland, the UK, the Netherlands, and Austria score the highest. Concerning the peer-review of publications, the university systems of Portugal, Ireland and the UK again score well. Therefore, depending on the applied "dimension" (indicator, indicator package) of governance and evaluation of research and teaching, *we see different country clusters of NPM governance in higher education. There is no single map for NPM governance in higher education in Europe. This should be regarded as an observation, but also as an argument in favour of the manifold opportunities to develop evaluation creatively*. The university system in Switzerland has the comparatively highest level of academic job satisfaction and scores low with regard to top-down management. Concerning academic job satisfaction, the degree of collegiality in decision-making in the institutional context plays an important role. Switzerland does not score highest as regards the consequences of evaluations or peer review.

(3.) *Evaluation-based governance of research and teaching*: As one might expect, universities are more inclined towards research-oriented evaluation systems that are linked to governance, while other higher education institutions lean towards teaching-oriented evaluation systems. It is imperative for the social organisation in charge of forming creative and network-style links between teaching and research to develop "cross-fertilising" evaluation approaches for research and teaching that are linked to institutional governance.

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Chapter 11
The Internationalisation of Academic Markets, Careers and Professions

Gaële Goastellec and Nicolas Pekari

11.1 Introduction: Internationalisation Between Market, Career and Professions

The internationalisation of higher education is a complex issue: it is "the process of integrating an international/intercultural dimension into the teaching, research and service functions of the institutions" (Knight 1999, 16). It thus concerns several dimensions of academic life at different levels.

In researching the internationalisation of the academic labour market, two main perspectives can be distinguished: from the point of view of the higher education system(s) and from the individual academics' perspectives. As regards the macro or meso level, we note several approaches that coexist, e.g. a descriptive approach interested in the international composition of academic staff as well as analyses depicting the flows of academics between higher education systems. As regards the individual level, some approaches focus on patterns within academics' careers, while others address the effects of mobility on individual academic careers. Moreover, in some studies, international dimensions in the organisation of academic work are analysed.

In this chapter, the internationalisation of the academic profession is analysed according to three prisms, i.e. national markets, individual career trajectories and professional activities. More specifically, the academic profession in 12 European countries is compared in those respects. With this chapter we hope to contribute to the understanding of the character of internationalisation in this context: possibly a

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polymorph dimension of the academic activity, impacting differently on the profession – depending on historical organisation and structure of higher education – as well as on disciplinary specificities and individual characteristics.

In the first parts, the market and the careers of academics are addressed. The subsequent parts concentrate on various aspects of international professional activities.

11.2 The Internationalisation of National Academic Markets: Patterns of Mobility

To determine the extent to which national academic markets are international, we will examine the proportion of academics working outside the country of birth, as well as the patterns of mobility, including migration, at various career stages.

11.2.1 Share of Academics Born Abroad

Internationality of higher education is often measured by the share of foreign-born academics at the institution or in the country addressed. The widespread rhetoric in this domain supports the view that the proportion of foreign-born academics has reached extremely high levels. From this perspective, it is surprising to note that 84%[1] of the academics surveyed in 12 European countries are born in the country in which they worked at the time of the survey.

However, the situation differs substantially by country. Switzerland is by far the most international in this respect: about half the academics at universities and about three-tenths at other higher education institutions are foreign-born. Altogether, more than three-tenth of academics in Ireland and more than one-fifth in Norway, the United Kingdom and Austria are also foreign-born. The respective ratio is lowest (about 2% each) in Italy and Poland. In all countries, the share of foreign-born academics at universities is higher than at other higher education institutions.

How can we explain the differences in internationality by country in this respect? Various factors play a role. Switzerland, having a fairly elitist system with a relatively low entry rate of students, can provide good conditions for both students and academics. The multi-language situation makes it attractive for academics from neighbouring countries to be professionally active there.

Table 11.1 shows the proportion of foreign-born senior and junior academics at universities. Respective data on academics at other higher education institutions are not presented because the number of juniors surveyed at these institutions is very small in some of these countries.

[1] Calculated throughout as the average of the country means.

Table 11.1 Share of foreign-born academics at universities by status (percentage)[a]

	2010					2007/2008						
	AT	CH	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors	25	50	38	13	2	9	4	2	19	2	18	16
Juniors	19	50	31	25	0	9	9	2	24	10	22	18

Question F9: What was/is your country of residence at birth?
[a]No data available for Croatia

In looking at the mean across countries, we note that the share of foreign-born among junior academics (18%) is not much higher than among senior academics (16%). This is surprising amidst the widespread assumptions that mobility among junior academics is frequent because the growing internationalisation could be more conducive for the mobility of the most recent generation and because mobility could be "temporary": academics could go abroad in their early career to enhance their competences and return to their home country.

Table 11.1 also shows that the share of foreign-born academics varies substantially between juniors and seniors in individual countries. The share of foreign-born junior academics clearly outweighs that of senior academics in Portugal, Finland and the Netherlands. We do not know the extent to which this can be explained as a sign of attraction for foreign junior staff to spend a temporary period there or as a recent growth of internationalisation in general. In contrast, we note a somewhat higher proportion of foreign-born senior academics in Ireland, Austria and Poland. Again, this is open to various interpretations: attractive conditions for senior academics in those countries, an earlier start of internationalisation of the academic profession in these countries or a comparatively lesser impetus of internationalisation in recent years. Finally, we note that such a difference in rates between junior and senior academics is not a consistent phenomenon across Europe: they are identical in Switzerland, i.e. the country with the highest share of foreign-born academics, and in Italy, i.e. one of the countries with the lowest rates.

11.2.2 Country of Doctoral Award

Undertaking doctoral work abroad is the most frequent phenomenon of academic mobility. Spending this period in another country is often viewed as a valuable asset in one's academic career, but doctoral mobility is also a very sensitive issue in the public discussion about the internationalisation of the academic market: to what extent does it reflect the quality of higher education in the home and host countries of PhD mobility? What role does the academic lingua franca, i.e. English, play in the mobility flows at this career stage? What role is played in terms of "brain drain", "brain gain" and "brain circulation"?

Kim and Locke (2009), in their analysis of the UK data of "the Changing Academic Profession (CAP)" survey, established a typology of countries according to patterns of academic mobility:

- *Study-abroad* countries: many graduates leave for the doctorate but return for postdoc or academic employment.
- *Magnetic countries*: countries attracting people from other countries for study and work.
- *Self-contained countries*: countries with little inward and outward academic mobility.

Tables 11.2 and 11.3 provide information to classify the 12 European countries regarding PhD mobility. Accordingly, we can see:

- Croatia, Finland, Germany, Italy and Poland as self-contained countries: more than 80% of seniors and more than 90% of juniors hold a national PhD. Kim and Locke (2009) argue that this applies most strikingly for Italy.
- A PhD award abroad is most frequent among academics in Ireland and Switzerland and also more frequent in Portugal, the Netherlands, Austria and the UK than in the countries mentioned above. As the data presented in Tables 11.2 and 11.3 show only mobility patterns with regard to a limited number of countries, this does not suffice to classify these countries as either "study-abroad countries" or "magnetic countries".

Other analyses in this domain suggest that Switzerland can be viewed as a "magnetic" country. Statistics published by the German Academic Exchange Service and by the Swiss Federal Statistical Office reveal that the number of German academics employed at Swiss higher education institutions is about ten times higher than the opposite mobility. Felli et al. (2007) show that the French academic labour market attracts only a few Swiss academics, while the Swiss academic market attracts many French scholars from the doctorate onwards. An earlier study came to the conclusion that most Nordic countries, but also some other Western European countries, can be characterised as "study-abroad" countries: spending the doctoral and postdoctoral stage abroad and continuing the academic career at home are a widespread career pattern (Melin 2004).

In comparing the shares of senior and junior academics at universities who were awarded a doctoral degree in a country other than that of current employment (see Tables 11.2 and 11.3), we note that more senior academics than junior academics of most countries obtained the doctoral degree in another country. This is not due, as available statistics show, to a change in international mobility at the stage of the doctoral career; rather, many mobile academics return to their home country during their doctoral work or move to a third country when they obtain a senior position. This phenomenon is widespread among academics who are currently employed in Austria, Croatia, Italy and Switzerland. The opposite holds true for the Netherlands (80% vs. 88%). The share of those with a doctoral degree from another country is slightly higher among juniors than among seniors in Finland and the United Kingdom.

Table 11.2 Country of doctoral award of senior academics at universities (percentages)[a]

	Country of current employment										
	AT	HR	FI	DE	IE	IT	NL	PL	PT	CH	UK
Country of doctoral award											
Austria	**74**	1	1	1	1	0	0	0	0	2	1
Croatia	0	**80**	0	0	0	0	0	0	0	0	0
Finland	0	0	**93**	1	0	0	0	0	0	1	0
Germany	20	6	1	**91**	2	1	4	1	0	22	2
Ireland	0	0	0	0	**50**	0	0	0	0	0	0
Italy	1	1	0	1	1	**87**	1	0	0	1	1
Netherlands	1	0	0	1	1	0	**89**	0	1	2	1
Poland	0	0	1	1	1	0	0	**96**	0	1	0
Portugal	0	0	0	0	0	0	0	0	**72**	0	0
Switzerland	1	0	0	1	0	0	1	0	0	**53**	0
United Kingdom	0	1	2	0	30	4	2	0	14	4	**87**
Spain	0	0	0	0	1	0	0	0	0	1	1
France	0	1	0	1	1	1	0	0	4	4	1
North America	2	6	3	1	12	5	2	0	7	8	4
Russia	0	0	0	0	0	0	0	1	0	0	1
Other	2	4	2	1	3	1	2	2	2	4	3
Total	100	100	100	100	100	100	100	100	100	100	100

Question A1: For each of your degrees, please indicate the year of completion and the country in which you obtained it. … Doctoral degree (if applicable)

[a]No data available for Norway

Table 11.3 Country of doctoral award of junior academics at universities (percentages)[a]

	Country of current employment										
	AT	HR	FI	DE	IE	IT	NL	PL	PT	CH	UK
Country of doctoral award											
Austria	**84**	1	0	1	1	0	0	0	0	2	0
Croatia	0	**91**	0	0	0	0	0	0	0	0	0
Finland	0	0	**90**	0	0	1	0	0	0	0	0
Germany	9	2	0	**93**	2	0	3	0	1	12	2
Ireland	0	0	0	0	**55**	0	1	0	0	0	1
Italy	1	0	0	0	1	**95**	1	0	1	3	0
Netherlands	0	0	0	0	0	1	**80**	0	1	1	0
Poland	0	0	0	0	0	0	0	**98**	0	0	1
Portugal	0	0	0	0	0	0	0	0	**75**	0	0
Switzerland	0	0	0	2	0	1	1	0	0	**64**	1
United Kingdom	1	2	1	0	29	2	4	0	7	4	**85**
Spain	0	0	0	0	0	1	1	0	8	1	0
France	1	0	1	0	2	1	2	0	4	2	1
North America	2	2	1	2	8	0	2	0	3	4	2
Russia	0	0	2	0	1	0	1	1	0	1	0
Other	1	1	4	1	3	0	5	1	4	7	5
Total	100	100	100	100	100	100	100	100	100	100	100

Question A1: as in Table 11.2

[a]No data available for Norway

In looking at the geography of academic mobility, we note that almost half the influx originates from neighbouring countries:

- In Ireland, 30% of senior and 29% of junior academics at universities obtained their PhD in the UK.
- In Switzerland, 22 and 12% have a German doctoral degree.
- In Austria, 20 and 9% obtained their doctorate in Germany.
- In Portugal, 8% of the junior academics at universities obtained a PhD in Spain.

Among non-neighbouring countries, a relatively high share of doctoral degrees were awarded in the United States, as one might expect, and in the United Kingdom.

11.2.3 Types of Mobility Over Life Stages

Mobility is not confined to the two moments in life discussed above. Academics circulate at different stages of their careers for various reasons and different periods. Reasons and the consequences for the respective countries vary, as the concept of "brain circulation" which gained popularity in recent years suggests (Fontes 2007).

The EUROAC study gathered information on citizenship and location at certain key stages of the careers. In combining the information on the various stages, we can establish a typology of mobility and migration patterns, distinguishing seven types:

- *Early immigrants*: foreign-born, studied for first and/or possibly second degree in the current country of employment
- *PhD immigrants*: foreign-born, studied for first and/or possibly second degrees abroad, completed PhD in current country of employment
- *Professional immigrants* (*PhD*): foreign-born, completed first and/or possibly second degrees, as well as PhD abroad
- *Professional immigrants* (*non-PhD*): foreign-born, completed first and/or possibly second degrees abroad, do not hold a PhD
- *Study mobile academics*: born in country of current employment, first and/or possibly second degrees abroad, PhD in current country of employment
- *PhD mobile academics*: born in country of current employment, first and/or possibly second degrees abroad or in current country of employment, PhD abroad
- *Nonmobile academics*: born and all degrees awarded in the country of current employment

On average across the European countries surveyed, three-quarters of the academics at universities are nonmobile: they were born, studied and work now in the same country. Non-mobility prevails among academics in Poland (96%), Italy (95%) and Finland (89%). In contrast, in Ireland and Switzerland, only 34 and 49% of the academics are nonmobile (Table 11.4).

Early immigrants – 6% of all academics at universities – are most frequent among academics in Ireland (21%), but are also frequent in Germany (9%). In contrast, they are practically non-existent in Italy, Poland and Finland.

Table 11.4 Mobility types of academics (both institutions; percentages)[a]

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	PT	UK	Mean
Early immigrants	6	5	21	0	4	9	0	1	6	3	6
PhD immigrants	1	5	0	0	0	2	1	0	0	3	1
Professional migrants PhD	9	17	4	1	5	1	2	0	0	9	5
Professional migrants non-PhD	3	14	0	0	0	1	2	0	0	1	2
Study mobile	0	0	2	1	0	0	0	0	0	0	0
PhD mobile	2	3	21	3	2	2	2	3	10	2	5
Nonmobile	74	49	34	96	85	81	89	95	79	75	76
Others[b]	3	7	16	0	4	3	3	0	4	6	4

Question A1: For each of your degrees, please indicate the year of completion and the country in which you obtained it. … F9: What was/is your country of residence at birth?

[a]No data available for Croatia and Norway

[b]Mostly persons mobile between first and second degrees; further early immigrants mobile during the course or study; others

Of the academics who obtained their doctoral degree, only few remained in the country after graduation. This holds true for only 1% on average across countries of the academics at the universities that were surveyed; it is most frequent in Switzerland (5%) and the UK (3%). Even fewer remain in the host country after a study period abroad.

About one-tenth on average across countries can be seen as professionally mobile academics, i.e. working in the respective countries without having graduated there. Half of these respondents hold a doctoral degree and half have not (yet) graduated. For both categories, Switzerland, with 17 and 14%, respectively, stands out clearly. Among PhD holders, a considerable share is also professionally mobile among those currently employed in Austria and the UK (9% each) and those without a doctorate in the Netherlands (5%) and Ireland (4%).

Finally, about 5% on average across countries work in their home country after having been mobile for their doctoral studies and work. This is relatively frequent among academics at universities in Ireland (21%) and Portugal (10%), but holds true for only 2–3% of academics in the other European countries.

Altogether, there is great plurality in the academic mobility patterns. In-depth studies on these phenomena suggest that political circumstances, cultural and language ties, attractiveness of the respective higher education systems for foreign students and doctoral candidates, immigration rules, regulations as regards access to academic positions for foreigners and other factors are at play.

11.3 Distinctions Between Mobile and Nonmobile Academics

Who are the mobile academics in comparison to the nonmobiles? We characterise them according to certain socio-biographical and institutional variables.

Table 11.5 Share of mobile academics by type of higher education institution and status (percentages)[a]

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	PT	UK	Mean
Seniors at universities	29	60	73	5	16	18	9	6	35	21	27
Juniors at universities	24	54	67	3	29	19	13	4	24	26	26
Seniors at other HEIs		48	65	5	11	15	7		42		28
Juniors at other HEIs		41	55	6	8	37	3		17		25

Here, mobility was measured as in Table 11.4

[a]No data available for Croatia and Norway

11.3.1 Type of Higher Education Institution

It is widely assumed that university academics are more mobile than academics at other higher education institutions. Table 11.5 shows that this is only consistent for a limited number of countries, notably the Netherlands and Switzerland.

11.3.2 Junior and Senior Academics

On the one hand, one could think that more senior academics were mobile in the course of their career than junior academics because they had more opportunities over many years. One the other, one could assume that many junior academics were mobile as a consequence of the general internationalisation of higher education. Table 11.5 indicates that mobility of academics at universities is equally frequent among seniors and juniors on average across countries. The patterns vary, however, by country: mobility is greater among seniors in Portugal and somewhat greater in Ireland, Switzerland and Austria. In contrast, mobility among juniors is greater in the Netherlands and somewhat greater in the United Kingdom and Finland. As for the share of academics at other higher education institutions, the share of mobile academics is greater among seniors than among juniors – with the exception of Germany where the opposite is true.

11.3.3 Disciplines

Table 11.6 only confirms to a limited degree the conventional wisdom according to which academics in science and engineering fields are more internationally mobile than those in humanities and social sciences. The mobility rate of the latter is only

Table 11.6 Share of mobile academics by discipline (both institutions; percentages[a])

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	PT	UK	Mean
Humanities and soc. sc.	29	44	32	5	16	18	11	11	31	26	22
Business and law	19	53	61	3	[b]	12	10	5	22	26	23
Life sc. and medicine	23	54	72	2	15	20	12	[c]	23	15	26
Physics and engineering	24	56	59	6	21	21	9	5	14	32	25

Question A2: Please identify the academic discipline or field of your highest degree
[a]No data available for Croatia and Norway
[b]No distinction between humanities/social sciences and business/law
[c]No distinction between life sc./med. and phys./eng

Table 11.7 Share of migrant/mobile academics by age group (both institutions; percentages[a])

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	PT	UK	Mean
Up to 30	16	53	73	2	23	17	12		21	15	26
31–40	27	56	66	3	20	17	11	4	19	35	26
41–50	36	46	68	5	17	24	13	7	22	26	26
51–60	22	46	61	6	10	24	7	5	24	15	22
60 and above	26	41	71	4	8	15	10	3	50	15	24

Question F2: Year of birth
[a]No data available for Croatia and Norway

moderately higher than that of the former if viewed across countries. There are differences, though, by country. Academics in the humanities and social sciences in Austria and Portugal, those in life sciences and medicine in Ireland and those of physics and engineering in the United Kingdom are the most mobile.

11.3.4 Age

As already pointed out above with respect to junior and senior academics, there is a widespread assumption in favour of expecting higher shares among the younger ones on the one hand and among the older ones on the other. In looking at the shares across all countries, the findings of Table 11.7 support more strongly the former views, even though they are not consistent across all age groups. The 51–60-year-old academics are less mobile than the 31–50-year-olds. This is true for Austria, Ireland, the Netherlands, Finland and the UK. Portugal is the clearest opposite case. In comparing 31–40-year-olds with the 41–50-year-olds, we note a higher share of the relatively younger ones in Switzerland and the UK and of the relatively older ones in Austria and Germany.

Table 11.8 Age at first full-time employment for mobile and nonmobile academics by type of higher education institution and status (years)[a]

		2010					2007/2008					
		AT	CH	IE	PL	NL	DE	FI	IT	PT	UK	Mean
Universities												
Seniors	Nonmob.	28	34	41	26	29	31	31	32	28	31	31
	Mobile	29	32	39	27	30	28	31	33	28	32	31
Juniors	Nonmob.	28	30	33	27	30	30	29	33	30	31	30
	Mobile	29	29	30	29	29	30	29	33	33	31	30
Other HEIs												
Seniors	Nonmob.		36	43	28	35	32	36		31		34
	Mobile		35		31	33				28		32
Juniors	Nonmob.		34	39	28	34	31	36		30		32
	Mobile		37	34	26	33	26			29		31

Question F2: Year of birth
[a]No data available for Croatia and Norway

Table 11.9 Share of mobile academics by gender (both institutions; percentages)[a]

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	PT	UK	Mean
Men	24	50	67	5	14	17	13	5	20	21	24
Women	28	53	66	3	18	25	8	5	24	29	26

Question F1: What is your gender?
[a]No data available for Croatia and Norway

11.3.5 Age at Full-Time Appointment

The link between age and career can be analysed in this context because academics had been asked to state the age when they were appointed full-time for the first time. As Table 11.8 shows, there is no difference between mobile and nonmobile academics in this respect across countries. And even within individual countries, there are hardly any noteworthy differences.

11.3.6 Gender

Contradicting the usual stereotype, the share of migrant and mobile female academics is not lower than the respective share among men. Table 11.9 even indicates a marginal higher mobility rate among women. This difference is most pronounced in Germany and the UK, while male academics are more mobile than female academics in Finland.

Table 11.10 Share of mobile academics by father's educational attainment (both institutions; percentages[a])

	2010					2007/2008					
	AT	CH	IE	PL	NL	DE	FI	IT	PT	UK	Mean
No tertiary education	20	44	66	4	12	17	7	5	23	18	22
Tertiary education	32	58	65	5	18	22	18	6	19	33	28

Question F8: What is your parents' highest … education level? … Father
[a]No data available for Croatia and Norway

11.3.7 Father's Educational Attainment

As one could expect, the share of mobile academics is higher among those whose fathers had attained tertiary education than among those whose fathers had lower levels of educational attainment. As Table 11.10 suggests, this clearly holds true for six of the ten countries for which information is available, while the opposite applies to Portugal.

Among the six variables examined, we only note across countries a clear difference between mobile and nonmobile academics according to their father's educational attainment. There are differences, though, in some of the countries included in the survey. These vary so much according to the variables that no consistent configuration can be elaborated.

11.4 International Professional Activities

Certain aspects of international activities were addressed in the questionnaire. The respective findings will be presented later. Before, we will examine how far mobile and nonmobile academics differ in those respects.

11.4.1 Publications in a Foreign Language

Table 11.11 shows the proportion of recent publications published by academics in a language that is not the language of instruction of their current institutions. In all non-English-speaking countries, academics at universities publish more than half of their publications in a foreign language – in the Netherlands and Norway even more than three-quarters. In contrast, academics in the United Kingdom and Ireland – i.e. the European English-speaking countries – hardly publish in a foreign language. In most countries, senior and junior academics hardly differ in this respect.

Table 11.11 Publications in a language that is not that of the institution by type of higher education institution and status (percentage[a])

	2010					2007/2008						
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	63	64	3	55	78	56	66	58	73	56	4	53
Juniors at universities	60	53	3	55	81	60	60	62	78	51	4	52
Seniors at other HEIs		42	0	43	40	25	39		77	49		39
Juniors at other HEIs		36	3	49	26	20	33		69	47		31

Question D5: What percentage of your publications in the last 3 years were… Published in a language that is not the language of instruction at your current institution
[a]No data available for Croatia

Table 11.12 Average proportion of publications abroad – academics by type of higher education institution and status (percentage[a])

	2010				2007/2008						
	AT	CH	IE	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	68	69	66	44	46	60	48	59	64	28	55
Juniors at universities	56	50	50	41	41	53	48	58	51	25	47
Seniors at other HEIs		38	30	27	13	31		59	42		34
Juniors at other HEIs		30	27	33	7	18		39	46		26

Question D5: What percentage of your publications in the last 3 years were … Published in a foreign country
[a]No data available for Croatia and the Netherlands

At other higher education institutions, publishing in a foreign language is less frequent than at universities – somewhat more than one-third. In most countries, senior academics publish in a foreign language more often than junior academics of this type of institution.

11.4.2 Publication Abroad

The academics surveyed were also asked to state the proportion of publications published abroad. This often coincides with publishing in a foreign language, but there are cases of publishing in a foreign language in the home country and of publishing abroad in the language of one's country of employment. Table 11.12 shows – in comparison to Table 11.11 – that senior academics publish almost as often abroad as in a foreign language. In contrast, junior university academics and academics at other higher education institutions publish a few percent less abroad than they publish in a foreign language in the mean across all countries. These patterns are more or less consistent across countries. However, in some countries, junior academics publish about the same share of their publications abroad as senior academics.

Table 11.13 Publications co-authored with colleagues in other countries by type of higher education institution and status (percentage[a])

	2010					2007/2008						
	AT	CH	IE	PL	NL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	29	33	24	19	29	19	18	16	22	22	15	22
Juniors at universities	23	26	18	15	28	15	19	17	19	17	15	19
Seniors at other HEIs		20	12	10	8	6	13		23	18		14
Juniors at other HEIs		19	8	12	2	13	8		22	16		12

Question D5: What percentage of your publications in the last 3 years were … Co-authored with colleagues located in other (foreign) countries
[a]No data available for Croatia

This holds true at universities in Italy and Norway. At other higher education institutions, junior academics in Portugal publish a slightly higher share of their publications abroad than senior academics.

11.4.3 International Co-authorship

Co-authorship with colleagues from other countries is often taken as an indicator of international research collaboration. Senior university academics report on average across countries that more than one-fifth of their recent publications were co-authored with colleagues from other countries; the respective figures are slightly less than one-fifth among junior academics and about one-seventh among academics in other higher education institutions (see Table 11.13). Co-authored publications are clearly above average among academics at universities in Switzerland, the Netherlands and Austria and relatively frequent in Switzerland and Norway among academics at other higher education institutions. The strongest contrast of frequent international co-authorship at universities and rare international co-authorship at other higher education institutions applies in the Netherlands.

11.4.4 International Research Funding

Senior university academics on average across countries state that one-sixth of their research funds come from international sources. The respective figures for junior university staff and senior academics at other higher education institutions are slightly lower, and those for junior staff at other higher education institutions are substantially lower, as Table 11.14 shows. The highest percentages are reported by senior academics in Portugal at universities (32%) and other higher education institutions (25%). Also, academics of all these categories in Poland report relatively high shares of international research funding.

Table 11.14 International research funding by type of higher education institution and status (percentage)

	2010							2007/2008					
	AT	CH	HR	IE	NL	PL	FI	DE	IT	NO	PT	UK	Mean
Seniors at universities	19	10	11	16	21	22	12	12	13	11	32	14	16
Juniors at universities	21	12	7	15	19	23	12	10	11	7	17	16	14
Seniors at other HEIs		7		15	4	17	15	6		19	25		14
Juniors at other HEIs		6		4	0	21	14	15		4	10		10

Question D8: In the current (or previous) academic year, what percentage of the external funding for your research came from… International organizations/entities

Table 11.15 International research collaboration in research by type of higher education institution and status (percentage)

	2010						2007/2008						
	AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	89	93	86	90	77	54	75	88	62	72	69	68	77
Juniors at universities	69	65	69	70	74	46	40	68	55	50	46	58	59
Seniors at other HEIs		67		59	27	36	26	56		65	58		49
Juniors at other HEIs		55		48	10	33	26	51		61	39		39

Question D1: How would you characterize your research efforts undertaken during this (or the previous) academic year? Do you collaborate with international colleagues?

11.4.5 International Research Collaboration

More than three-quarters of university professors on average across countries report that they have recently collaborated with international colleagues in their research activities. The respective figures are less than two-thirds among junior university academics and about half among academics at other higher education institutions. As Table 11.15 shows, international research collaboration is most frequent (around 90%) among university professors in Austria, Switzerland, Croatia, Ireland and Finland, while it is clearly less frequent among university professors in Poland (54%).

11.4.6 Teaching Abroad

In six countries (Austria, Switzerland, Ireland, Germany, Finland and Norway), about a quarter or more of senior university academics taught abroad during the previous academic year. In other countries, the respective share ranges from 14% (Poland) to 19% (the Netherlands). Less than half as many juniors teach abroad, as Table 11.16 indicates, whereby the respective proportion is highest Austria (18%), Ireland and Poland (13% both). At other higher education institutions, the share of

Table 11.16 Teaching abroad by type of higher education institution and status (percentage)

	2010						2007/2008						
	AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	31	31	16	29	19	14	25	26	17	32	16	16	23
Juniors at universities	18	10	1	13	9	13	8	10	9	9	4	11	10
Seniors at other HEIs		27		25	10	9	21	26		31	18		21
Juniors at other HEIs		17		10	12	8	19	14		21	2		12

Question C5: During the current (or previous) academic year, are you teaching any courses… Abroad

Table 11.17 Proportion of academics teaching in a language that is not that of the institution by type of higher education institution and status (percentage)

	2010						2007/2008						
	AT	CH	HR	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	50	49	13	7	62	35	37	58	27	72	32	5	37
Juniors at universities	34	31	5	6	54	34	19	43	19	45	14	3	26
Seniors at other HEIs		39			35	25	24	41		66	18		38
Juniors at other HEIs		24			29	29	22	35		67	8		32

Question C5: During the current (or previous) academic year, are you teaching any courses… In a language different from the language of instruction at your current institution

those teaching abroad is similar to those at universities, whereby teaching abroad is most frequent among seniors in Norway, Switzerland, Finland and Ireland and least frequent in the Netherlands and Poland. Among juniors, the highest shares are reported in Switzerland and Finland.

11.4.7 Teaching in a Foreign Language

More than one-third of senior academics at universities and other higher education institutions teach in a language that is not the institutions'. This proportion ranges from 72% among senior university academics in Norway to 13% in Croatia. As could be expected, the share is relatively low in English-speaking countries. Among senior academics at other higher education institutions, it ranges from 66% in Norway to about a quarter in Germany and Poland. As Table 11.17 shows, the respective share is slightly lower among juniors at other higher education institutions and substantially lower among juniors at universities.

Table 11.18 presents a list of the countries surveyed based on the average rank of international activities in the six areas of activities discussed above. Obviously, academics in small European countries (in terms of population size) are more active

Table 11.18 Countries indexed regarding academics' international activities[a]

	Universities		Other HEIs	
	Seniors	Juniors	Seniors	Juniors
Austria	1	2		
Netherlands	2	1	7	7
Switzerland	3	5	3	2
Norway	4	4	1	1
Finland	5	3	4	4
Ireland	6	6–7	5	8
Portugal	7	9	2	5
Germany	8	11	8	6
Poland	9	6–7	6	3
Italy	10	8		
UK	11	10		

Items from Tables 11.12, 11.13, 11.14, 11.15, 11.16, and 11.17 summarised
[a]No data available for Croatia

internationally than academics in large European countries. Among the small and large European countries, the lowest international activities are reported according to the six measures discussed above in the English-speaking countries. Academics in Austria and the Netherlands at universities and academics in Norway at other higher education institutions are most active internationally.

11.5 From an International Career to an Internationalised Profession

Previous studies have shown that academics with an international biography in terms of migration or international mobility were more likely to be internationally active in teaching and research than those who spent their whole career in their respective home country. It is interesting, though, to examine the degree to which international activities differ between these groups. A relatively small difference could show that the academic professions move from a divide of those with and those without an international career to a genuinely internationalised profession.

Table 11.19 shows, first, that international research collaboration is consistently higher among migrant and mobile academics. This is more striking than in the case of the other research-related international activities. For example, 64% of nonmobile university professors collaborate internationally in their research activities, as compared to 86% of their migrant and 80% of their mobile colleagues. It also demonstrates the influence of having migrated or been mobile during one's academic career, as defined above, on the internationalisation of one's research activities.

Table 11.19 Research-related international activities[a] of migrant, mobile and nonmobile academics by type of higher education institution and status (percentage)

	Universities						Other HEIs					
	Seniors			Juniors			Seniors			Juniors		
	Migr.[b]	Mob.	Non.	Migr.	Mob.	Non.	Migr.	Mob.	Non.	Migr.	Mob.	Non.
Publish in different language	44	39	55	50	42	53	47	38	39	28	29	42
Foreign co-author	28	26	19	29	22	17	33	21	9	20	26	12
Published abroad	61	56	47	51	51	43	53	25	19	28	36	36
International funding	20	21	15	12	20	16	14	20	11	9	11	11
Int. research collaboration	86	80	64	68	69	53	71	73	33	58	58	40

[a]Cf. the definitions in Tables 11.11, 11.12, 11.13, and 11.14
[b]Migr.: migrants; Mob.: mobile academics; Non.: non-mobile academics

Hence, a distinction will be made between migrant, mobile and nonmobile academics. Various research-related academic activities are addressed which have already been described: foreign co-authorship, proportion of publications published abroad, share of international funding and publishing in a language that is not the language of instruction at the current institution. The results are presented for all respondents, i.e. not differentiated by country.

In looking at the seniors at universities, we note that nonmobile persons are less international in their research activities in three aspects: publishing abroad, publishing with foreign co-authors and acquiring research funds from international sources. Altogether, the differences are surprisingly small: for example, 19% of nonmobile senior university academics have foreign co-authors, as compared to 26% of their mobile and 28% of their migrant colleagues. Similar differences exist among junior university academics.

As regards academics at other higher education institutions, Table 11.19 indicates a contrast by status. Among senior academics, the nonmobile are clearly less international in these research-related activities than their migrant and mobile colleagues. For example, only 9% of the former have foreign co-authors, as compared to 33 and 21% of the latter. In contrast, this difference does not hold true for junior academics at other higher education institutions.

As regards the fourth aspect, Table 11.19 shows that migration and mobility do not lead to a higher degree of international activity.

Table 11.20 shows that teaching abroad differs to a similar extent. The difference is most striking among senior academics at other higher education institutions: only 12% of the nonmobile academics have recently taught abroad, as compared to 33% of their migrant and 35% of their mobile colleagues.

In contrast, teaching in a foreign language (defined here as a language that is not the language of instruction at their home institution) is undertaken almost as often by nonmobile academics as by migrant and mobile academics.

Table 11.20 International teaching activities[a] of migrant, mobile and nonmobile academics by type of higher education institution and status (percentage)

	Universities						Other HEIs					
	Seniors			Juniors			Seniors			Juniors		
	Migr.[b]	Mob.	Non.	Migr.	Mob.	Non.	Migr.	Mob.	Non.	Migr.	Mob.	Non.
Teaching abroad	30	29	17	14	15	10	33	35	12	21	15	8
Teaching in foreign lang.	34	34	33	28	24	27	41	44	27	20	23	20

[a]Cf. the definitions in Tables 11.15, 11.16, and 11.17
[b]Cf. the definitions in Table 11.19

Table 11.21 International orientation of primary research by type of higher education institution and status (mean[a])

	2010						2007/2008						
	AT	HR	CH	IE	NL	PL	DE	FI	IT	NO	PT	UK	Mean
Seniors at universities	2.0	2.2	1.9	1.8	1.9	3.2	2.1	1.9	1.9	2.1	2.1	2.1	2.1
Juniors at universities	2.5	2.8	2.4	2.3	2.0	3.1	2.9	2.5	2.1	2.4	2.5	2.6	2.5
Senior in other HEIs			2.6	2.4	3.0	3.5	3.0	2.9		2.2	2.8		2.8
Junior in other HEIs			3.0	3.0	3.2	3.3	3.2	3.4		2.2	2.8		3.0

Question D2: Would you characterise the emphasis of your primary research this (or the previous) academic year as international in scope or orientation?
[a]On a scale from 1 = very much to 5 = not at all

In sum, mobile and migrant academics are more internationally active in teaching and research than nonmobile academics. The difference, however, is relatively small in various respects. Nonmobile academics resemble migrant and mobile academics as far as the propositions of those who use a foreign language in research as well as in teaching are concerned.

Finally, the academics were asked to assess the international orientation of their recent research. Table 11.21 shows that university professors consider their activities to be internationally oriented. On average, they rate their research activities 2.1 on a scale from 1 = very much to 5 = not at all. Hence, the ratings are similar across most countries. Only university professors in Poland do not consider their research activities to be internationally oriented (3.2).

Juniors at universities on average consider their research orientation somewhat less internationally oriented (2.5 on average across countries). Hence, as Table 11.21 shows, differences by country are more pronounced, with strong international emphasis in the Netherlands (2.0) and Italy and contrasting assessments in Poland (3.1), Germany (2.9) and Croatia (2.8).

Academics at other higher education institutions consider their research activities to be less internationally oriented than university academics. On average across countries, the scores are 2.8 among seniors and 3.0 among juniors. Great emphasis

on international research cooperation is only reported by respondents in Norway, while the opposite holds true for respondents in Poland, Germany, the Netherlands and Finland.

11.6 Conclusion

As underlined in the introduction, internationalisation is a polymorph dimension of the academic activity. It has a varied impact on the academic profession depending on the historical roots of organisation and structure of higher education, disciplinary specificities and individual characteristics.

In looking at the internationalisation of academic markets, we note varied characteristics across countries. Some higher education markets seem self-contained in terms of a large number of academics born in that country (Croatia, Finland, Germany, Italy and Poland); others are more "magnetic" or "study-abroad" oriented, such as Ireland or Switzerland. Hence, some countries are more internationally attractive to junior academics (Finland, Germany, the Netherlands, Norway, Portugal and the United Kingdom), while others are more attractive at a later stage of the career (Austria, Ireland and, to a lesser degree, Poland).

Among the various trajectories, we note professional migrants as the most frequent type: 10% of academics on average across countries migrate upon completion of their studies; this type is most frequent among those currently employed in Switzerland and the UK and frequent in Austria, Ireland and the Netherlands. Early immigrants are the second most frequent type. The migration context of a particular country, its national legislation and the attractiveness of its higher education system strongly influence the importance of this category; Ireland and Germany are the most frequently represented in this framework – this probably is due to the language of instruction (i.e. the language spoken in the neighbouring countries).

The third most frequent type of migration and mobility is PhD mobility; Ireland and Portugal are strongly represented in this category. Additionally, it is worth naming those academics in this framework who are mobile in the course of their studies up to a first and possibly a second degree.

In comparing mobile and nonmobile academics, we note that migrant and mobile academics are more strongly involved in international research and teaching activities. This difference, however, is in many respects smaller than one might have expected, thus indicating that internationalisation spreads far beyond conducive personal background. Nonmobile academics even use foreign languages in the framework of teaching and research as much as migrant and mobile academics. Specific national characteristics of the higher education system play a role in this respect, but we note overall that academics in small countries are more active internationally than those in large countries in terms of population size.

Ascriptive factors seem to play a role in this context: being young, being a woman and having a father with tertiary education positively influence the probability of being internationally active. But this is not consistently an advantage: it seems to

facilitate early access to junior academic positions but not to senior academic positions.

Even though the extent of international activities is impressive, we should not overlook the widespread national features of academic activities. For example, international research funding has remained a small share of the overall research funding.

Internationalisation of academic activities has not spread equally across academics of all status groups and types of higher education. In some respects, university professors are more international than junior academics, but in a smaller number of activities, the opposite is true. In almost all respects, academics at other higher education institutions are less internationally active than university academics.

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Chapter 12
The European Academic Profession or Academic Professions in Europe?

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12.1 Homogeneity and Variety in the Academic Profession

Academics worldwide are often defined as a professional group with fairly common characteristics: highly intelligent, interested in in-depth thinking and the "search for truth", willing to criticise themselves and others, sensitive to any interference that may possibly impede the open search for new ideas, considering their academic discipline as their true home above institution or country, sometimes cut off from contemporary trends in society. Academics can be seen as persons whose thinking and acting traverses institutional, national or cultural boundaries more easily than is the case in other professions. This is often combined with a "cosmopolitan" self-understanding of being global citizens.

Conversely, we know that the academic profession is less homogeneous than the above definition suggests:

- Many elements of the environment in which academics are professionally active are shaped *nationally*: For example, when talking about "higher education systems", we tend to address national entities without any further questioning. Thus, we may draw the conclusion that an academic profession is a national entity and that substantial differences between national academic professions are a matter of procedure.
- Also, the academic profession is most usually characterised with *universities* in mind, in the European understanding of this term, i.e. higher education institutions where teaching and research are fairly balanced core functions. This could lead us to assume that unless we want to treat the other sectors of higher education

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and research as insignificant, we must take into account the substantial differences that exist between countries with regard to the institutional environment and functions of universities. In the framework of this study, it is possible to establish the difference between academics at universities and academics at other higher education institutions, i.e. institutions that primarily teach students who are enrolled in at least bachelor programmes but which as a rule, are not in charge of research as is the case with universities.

- Moreover, when talking about the academic profession, we mostly have the "*professor*" in mind. Members of the academic profession are widely understood to be those who – following an extensive period of concurrent training and productive academic work, accompanied by employment uncertainty and a high degree of selection – have been appointed to a professorial rank. But the term "academic profession" also refers to young researchers upon whose work the system heavily relies. The German language does not have an umbrella term that encompasses both senior academics (often called *Hochschullehrer* or *Professoren*) and junior academics (often called *wissenschaftliche Mitarbeiter*, *Assistenten*, etc.).

In the framework of a study on the academic profession in Europe, "EUROAC – Responses to Societal Challenges", we are interested in exploring the extent of similarities and differences in the academic profession across countries, more specifically across European countries (cf. the comparison between European and other countries in Teichler et al. 2013). We must bear in mind, though, that the academic profession varies according to other factors, e.g. type of institution, discipline, career rank, etc.

Previous analyses have remained ambivalent about trends and whether the academic profession will become increasingly similar or increasingly varied across European countries in the future (see Kehm and Teichler 2013). On the one hand, it is widely assumed that a trend towards internationalisation and globalisation creates convergent pressures. Similarly, the growing collaboration within Europe in the reforms of study programmes and the enhancement of research – as the political documents advocating the "European Higher Education Area" and the "European Research Area" suggest – is based on the aim to homogenise higher education in Europe. Moreover, the worldwide search for the best possible approaches to teaching, learning and research, the best possible system configuration and the best institutional fabric of higher education could lead to a convergence of options. On the other hand, the different characteristics of national higher education systems seem to remain largely intact. There are strong national traditions. There is a range of possible options for those who have the power to shape higher education. Last but not least, the search for the best possible solution ultimately leads to the insight that there is no single model that is superior in every respect.

The EUROAC study provides an excellent opportunity to examine the degree of homogeneity and variety across 12 European countries with respect to some of the most important elements of higher education, i.e. the perceptions, views and activities of the academic profession. There is a wealth of experts' views. Also, statistics inform us about interesting phenomena such as entry and completion rates, expenditures for higher education and research, etc. But few studies have tried to measure

similarities and differences in higher education in Europe according a broad range of salient issues. The persons directly in charge of the core functions of higher education are a valuable source of information, even though their responses to a questionnaire cannot be viewed as completely "objective".

The aim of the concluding chapter of this book is not to document all the findings presented in the preceding ones; rather, a select thematic list is addressed. Hence, information is only provided on the views and activities of academics – both professors and those in junior positions – employed at universities. Academics at other higher education institutions are not included here because in Europe, the origins and approaches of these institutions have been so varied from the outset that one cannot easily establish trends of convergence or persistence of variety in this sector. Where possible, the findings of the EUROAC study will be compared to those of the previous comparative survey on the academic profession undertaken in the early 1990s – more specifically, on responses by academics of the European countries participating in the Carnegie Study (see Altbach 1996; Teichler 1996). The interpretations also benefit from the interpretations of findings of the study "The Changing Academic Profession" (CAP) that comprises countries from other regions of the world as well (see Teichler et al. 2013; Locke et al. 2011; Bentley et al. 2013; Shin et al. 2013).

We must bear in mind that this analysis is by no means comprehensive. One could also address other aspects in the analysis of the degree of homogeneity and variety in the academic profession, for example the academic disciplines. One could also try to find means to analyse the relative importance of the various aspects of academics' views and activities, for example in their contribution to academic productivity or to professional satisfaction. There is plenty of scope for future analyses.

12.2 Career and Employment

As regards academic career and the academics' employment situation, information is summarised on eight themes: the number of academics with a doctoral degree, their age when the degree was awarded, the frequency of inter-institutional mobility, remuneration, part-time and short-term employment, international mobility and migration, and finally gender differences in academic careers. In some cases, information is only provided for university professors because findings on junior academics are incomplete. For example, the inter-institutional mobility rate of junior academics could be lower than that of senior academics because the latter, being older, have had more opportunities to be mobile.

12.2.1 Credentials in Academic Careers

The spread of doctoral awards in a country varies substantially across Europe. The share of the respective age group with a doctoral degree varies from less than 1% to over 3% of the population. This reflects the respective roles of doctoral degrees in

managerial and professional occupations outside academia, as well as the relative size of the respective higher education and research systems within the overall labour market of a country. In contrast, it is widely assumed that the doctoral degree has a fairly common role in academia: more or less a "must" as the only or first entry qualification for a university career.

The EUROAC study shows that these assumptions are not consistently true:

- More than 90% of university professors were awarded a doctoral degree in Poland, Switzerland, Austria, Portugal, Germany and Finland.
- The respective share is somewhat less in Norway (84%), the Netherlands (82%), the United Kingdom (78%) and Croatia (75%).
- Less than two-thirds of senior university academics in Ireland (64%) obtained a doctoral degree.
- Only a minority of professors in Italy holds a doctoral degree (33%).

Thus, about one out of six university professors on average across the 12 European countries do not hold a doctoral degree. According to the survey of the early 1990s, 90% or more held doctoral degrees in Germany, Sweden and the Netherlands while in the United Kingdom the percentage was 74%. While the share remained more or less unchanged in Germany, it increased by 4% in the United Kingdom and decreased by 8% in the Netherlands. If we understand these figures to be representative for Europe, the share of professors with doctoral degrees has somewhat decreased over these 15 years.

12.2.2 Age of Doctoral Award

The typical age of entry into higher education is between 19 and 21 years old in many European countries, and 8–10 years are needed from the beginning of study to the award of the doctoral degree. Assuming that many of those who become university professors progress regularly and smoothly through the system, we could estimate that university professors were awarded the doctoral degree when they were just under the age of 30 and that this would differ between European countries by 2 or 3 years at most.

According to the EUROAC study, however, in the 12 European countries the average age at which university professors were awarded the doctoral degree was 34, whereby differences by country are striking:

- University professors were only 29 years old in Austria and 30 years old in Germany and Switzerland.
- The respective average was also relatively low in the United Kingdom (31 years) and Italy (32 years).
- The age ranges from 33 to 37 years in five countries.
- The age was 39 years in Ireland and 42 years in Poland.

In the three countries where academics were awarded the doctoral degree at a relatively young age, they were expected to obtain an advanced doctoral degree – the

Habilitation – based as a rule on 5 or more years of post-doctoral research, before they applied for professorial positions. Seventy-seven percent of the university professors in Germany, 74% in Austria and 62% in Switzerland (and 52% in Poland) report that they obtained this degree.

12.2.3 Inter-Institutional Mobility

In many countries of the world, the inter-institutional mobility of academics is viewed as a healthy phenomenon, and spending one's whole academic career in the same institution is often pejoratively called "inbreeding". In Germany, as a rule, academics are not appointed to a professorial position at the university where they were active during the earlier stage of their career. In contrast, there are countries where spending the duration of one's academic career in the same prestigious institution is most highly respected, since inter-institutional mobility could indicate detours on the way to academic success. For example, a continuous career at Oxford or Cambridge is viewed as highly desirable.

We note that inter-institutional mobility is more or less a "must" in Germany, and that only 8% of the university professors have never worked at another higher education institution. In Norway and the UK, about a quarter of university professors have never changed university, while in Italy, Portugal and Croatia this proportion is about half. In Poland, an even higher proportion of university professors have not changed university since they were awarded their first degree.

In most of the European countries surveyed, the total number of institutions in which academics were employed since the award of the first degree is over four. Italian university professors even report 5.4 institutions on average. Inter-institutional mobility is only somewhat less pronounced in Poland (3.6), but is exceptionally rare in the Netherlands (1.8) and Croatia (1.6). In the latter two countries, we note less than one institutional change on average over the course of the professors' career.

The average number of higher education institutions and research institutions which employed the survey respondents varies from 1.4 in Croatia to almost four in Switzerland, Italy and Austria. Employment or self-employment outside academia varies even more strikingly, ranging from 0.1 in Croatia to almost two in Ireland.

12.2.4 Remuneration

Comparing salaries on the basis of survey responses is a challenging task. The share of non-respondents to this question tends be higher than for most other questions. Information-gathering on monthly salaries would seem to be the most obvious approach, but there are differences between countries as regards the number of monthly salaries paid per year, and some supplements may not be paid on a monthly basis. In some countries salaries could include certain benefits, while in others these could be paid in addition to salaries. Moreover, the actual value of academics' gross

salaries can differ between countries, depending on tax rates, purchasing power and poverty lines and differences between those salaries paid for academics on the one hand and those salaries paid for average employees on the other.

The EUROAC survey shows that the annual gross salaries of university professors vary substantially within Europe even when adjusted to consumer price levels:

- The adjusted salary is by far the highest in Switzerland (almost 200,000 €), and is clearly above average in Norway (almost 84,000 €).
- In various European countries, the salary stands at around 70,000 € (the Netherlands, Austria, Finland and Germany), while
- it ranges between 50,000 € and somewhat over 60,000 € in Italy, the United Kingdom and Portugal.
- It is by far the lowest in Poland at somewhat more than 12,000 € (no information is available for Croatia).

As shown in the respective chapter, university professors' average salaries vary dramatically by country in comparison to other occupations. At one extreme, they are more than five times as high and at the other extreme only about twice as high as the poverty level of a family comprised of two adults and two children.

Finally, it is worth noting that the average salaries of junior university academics differ to a varying degree from the salaries of university professors. Junior academics earn less than half as much in Switzerland, but about two-thirds as much in Norway and the United Kingdom.

12.2.5 Short-Term and Part-Time Employment

For a long time, the stable employment of university professors has been seen across Europe as the major linchpin of academic freedom: if career-long employment was guaranteed and if all the working time could be concentrated on academic endeavours, university professors could devote themselves to exploring various academic avenues without fear and second thoughts. In recent years, however, the view that less employment stability could – as part of an incentive and sanction system – stimulate the quality and productivity of academic work is gaining momentum. Moreover, part-time employment of practitioners – e.g. professionals in the occupations the current generation of students intend to enter – could enrich curricula. Finally, opportunities for part-time employment are often considered to contribute to gender equality.

In contrast, the instability of employment of junior academics is widely viewed as a normal feature of early career stages in academia that are characterised by a long period of concurrent learning and productive work and tough selectivity. But previous in-depth analyses have shown that both concepts and practices varied in this respect across European countries.

According to the EUROAC study, part-time employment remains an exception for university professors in Europe, ranging from 0 to 8% in all countries except for the Netherlands (21%). Short-term employment of university professors, however, is only exceptional in 5 of the 12 European countries. In contrast, it is quite frequent in Finland (34%), Poland (30%) and Switzerland (24%) and by no means rare in Austria (19%), the Netherlands (16%) and Portugal (13%).

Among the three countries for which information is available both for the early 1990s and for recent years, part-time and short-term employment of university professors have remained an exception both in Germany and the United Kingdom. In the Netherlands, however, part-time employment increased from 14 to 21% and short-term employment from 3 to 16%.

As regards the job stability or instability of junior academics, the heterogeneity across Europe is huge. Part-time employment

- is rare in Poland (1%), Italy (2%), and Finland (6%),
- is occasional in Ireland (9%), Norway (10%), Portugal and the United Kingdom (12% each),
- is relatively frequent in Switzerland (44%), Austria and Germany (31%) as well as in the Netherlands (30%).

Short-term employment of junior academics at universities ranges

- from about a quarter in Ireland (24%) and the United Kingdom (29%)
- to more than two-thirds in half the European countries for which information is available: Germany, Switzerland (79% each), Norway (75%), Portugal (69%) and Austria (68%).

It is interesting to note that the rates of part-time and short-term employment have not changed substantially in the three countries for which information is available both for the early 1990s and for recent years. Part-time employment has increased in the United Kingdom by 6% and in Germany by 4%, while it has dropped in the Netherlands by 4%. Short-term employment rates have changed marginally. In Germany they have remained unchanged, even though the public debate has created the impression that there has been further growth (see BMBF 2008).

One must bear in mind, though, that junior academics are not a homogeneous group in these respects. At German universities, 99% of junior academics without a doctoral degree who graduated less than 6 years ago are employed on a short-term basis, but this is the case for only 45% with a doctoral degree who graduated more than 12 years ago.

12.2.6 International Mobility and Migration

With the current trend of growing internationalisation of higher education and increasingly global forces shaping higher education, much attention is paid to the mobility of academics between countries during the course of their career. One must

bear in mind, though, that this could have different meanings for academic work. Migration prior to study or residence prior to study in a country different from that of one's citizenship are more often seen as disadvantageous to academic achievement. Mobility of European students during the course of study is viewed as broadening the mind and increasing inter-cultural understanding rather than as a vehicle for enhancing academic achievement. In contrast, mobility at the doctoral stage is often embarked on in search of the best host academic institution. Finally, professional mobility after the attainment of the first or advanced degree may often also be undertaken when looking for an attractive academic employment and work environment. Irrespective of the different reasons and the likely implications for academic quality, mobility and migration may generally result in more attention being given to international aspects in teaching and research, such as international collaboration, comparative perspectives, cultural diversity, use of foreign language, etc. In sum, mobility and migration can shape academic careers in many respects, e.g. in terms of family formation, purposes and institutional anchoring (see Cradden 2007; Teichler 2011). Therefore it is interesting in the framework of this study to examine the share of migrant and mobile academics.

According to the EUROAC study, the share of migrant and mobile academics (including those who migrated prior to study, those mobile during the course of study, mobile during the doctoral stage, and professionally mobile), varies greatly by country. The overall rates of mobility and migration are

- the highest among university professors in Ireland (66%) and Switzerland (64%),
- remarkably high in Norway (53%), Portugal (36%) and Austria (35%),
- about average in Croatia (24%), the United Kingdom (22%) and Germany (21%),
- clearly below average in the Netherlands (14%), Italy (12%) and Finland (11%), and
- very low in Poland (4%).

The reasons vary considerably. For example, many of the respondents in Ireland are Irish citizens who went abroad for studies and doctoral work. In contrast, many respondents in Switzerland are foreigners who moved to Switzerland to benefit from conditions that were conducive for an academic career.

12.2.7 Barriers and Opportunities for Women

After substantial growth rates in recent decades, women now comprise more than half of the student population at higher education institutions. But the higher the rank in academic careers, the smaller is their share. While this is often interpreted as a sign of a "glass ceiling" regarding access to top positions, other authors underscore the long historical process of the increasing role of women in academia. Anyway, shares of women decrease throughout their academic career even within the same age cohort.

The EUROAC study shows that about twice as many women are university professors in the country with the highest share as in the country with the lowest share. On average 26% of university professors in the European countries are women:

- 38% in Poland and 33% each in Ireland and the United Kingdom,
- between 22 and 29% in 5 of the 12 countries, and
- less than one-fifth in Switzerland (17%), Germany (18%) and the Netherlands (19%).

Women account for close to half of junior university academics across the European countries. They range from more than half in two countries (58% in Ireland and 52% in the United Kingdom) to 40–50% in eight countries and under two-fifths in two countries (35% in the Netherlands and 38% in Germany).

A comparison with the survey of the early 1990s shows a dramatic increase of 10% among university professors and 26% among junior academics on average across the four European countries surveyed at the time (Teichler 1996). This suggests that the share of women among university professors has increased within a single generation to more or less that of women among junior academics a generation ago. These findings support the hypothesis of regular historical growth rather than that of a "glass ceiling".

In various respects, the situation of women in academia is – on average across European countries – slightly less favourable than that of men in the same position. But we note differences by country which can be illustrated with figures on short-term employment. On the one hand, the share of women among university professors who are employed on a short-term basis is 12% higher than that of men in Switzerland, 10% in Austria, 9% in the Netherlands and 8% in Finland. On the other hand, the share is only 2% higher in the United Kingdom and 4% lower than that of men in Portugal.

12.3 Academic Work

As regards academic work addressed in the comparative study, diversity across Europe is discussed here in terms of the following themes: the number of weekly working hours, the academics' preferences for teaching and research, the amount of time spent on teaching and research, the assessment of the infrastructure of academic work and international activities as cross-cultural themes in the functional areas, and teaching approaches and modes as well as research approaches and publications as themes directly addressing the two major functional areas. Finally, views are presented regarding the degree to which teaching and research are seen as productive links or as incompatible.

12.3.1 Weekly Work Hours

We might have expected the weekly working hours of university professors to be similar across European countries. The standard working hours of employees in the

European countries do not differ substantially; university professors are seen as being very devoted to their professional work, and thus could be considered likely to work longer hours than is usually required. However, the average working week varies substantially by country:

- University professors in Germany and Switzerland report working 52 h each and those in Ireland 50 h per week on average over the whole year,
- followed by between 45 and 49 h among their colleagues in various countries, and finally
- those in Portugal who work 41 h and Norway who work only 39 h.

Thus, we note a range from more than 30% beyond the normal working hours of an employee to more or less the same as the normal working hours of an employee.

In comparison to 1992, university professors in the Netherlands now work 10 h less per week and those in the United Kingdom work 5 h less per week. The weekly working hours of university professors in Germany, however, have remained unchanged.

Among junior university academic staff employed on a full-time basis, i.e. who work 42 h per week on average across European countries, the figures vary less by country than in the case of university professors. Those in Ireland report 47 h on average and those in almost all the other countries between 41 and 45 h. There is an exception: junior staff in Norway report 28 h, but this includes doctoral candidates who are expected to work less hours, even though their job is not officially a part-time one.

12.3.2 Allocation of Work Time to Teaching, Research and Other Tasks

The number of hours that university professors spend on teaching (including teaching-related activities) when classes are in session is fairly homogeneous. The figure ranges from 14 h in Austria to 20 h in Finland. Correspondingly, the number of hours spent on research (including research-related activities) ranges among most of the European countries from 13 to 18 h. In all 12 countries, university professors spend somewhat more time on research than on teaching – between 1.1 and 1.4 times – during the periods of the year when classes are in session. When classes are not in session, more time is spent on research than on teaching.

In estimating the shares of work time spent over the whole year by those employed full-time, we come to the conclusion that the differences by country are by no means trivial:

- University professors in Austria spend 42% of their annual work time on research and only 23% on teaching, i.e. about 1.8 times as much time on research as on teaching. The figures for Switzerland are similar (41 and 24%).

- Research also clearly dominates in Ireland (38% vs. 24%) and Italy (45% vs. 31%).
- In the Netherlands (41 and 31%) and in Germany (38 and 29%), university professors spend about 1.3 times as much time on research as on teaching.
- In half of the European countries, the amount of time spent on research ranges from more or less the same as teaching (Portugal) to 1.2 as much as on teaching (Norway).

From the 1990s until recently, the amount of overall work time devoted to teaching fell by 6% in the Netherlands and by 5% in Germany. In the United Kingdom, this comparison causes problems because while the category "university" did not include "polytechnics" in the previous survey, it includes former polytechnics in the recent survey.

The involvement of junior academic staff in teaching varies more substantially by country when classes are in session than that of university professors. It represents 7 h in Norway and Switzerland and 20 h in Portugal and the Netherlands. In Norway and Switzerland, junior university staff spends less time on teaching than professors. In some countries, this difference is smaller, while in Portugal and the Netherlands, junior staff spends a greater amount of time on teaching than senior staff. On average across countries, junior academics spend more time on research and less time on teaching than professors.

In looking at the amount of time spent on the various functions over the whole year, we note that junior academics who are employed full-time

- spend more than four times as much time on research than on teaching in Switzerland (60% versus 14%) and almost four times as much in Norway (67% versus 18%),
- between three times and twice as much time on research in Finland (61% versus 22%), Germany (53% versus 21%) and Austria (49% versus 23%),
- about one-and-a-half times as much in the United Kingdom and Italy, and
- less than that in the remaining five countries (in Portugal 41% each for research and teaching).

The weekly teaching load is certainly not the same across the European countries. However, individual time allocation on teaching-related activities by seniors seems to play the major role in the differences by country observed. In contrast, the teaching load of junior academics varies substantially: in some countries, it is close to that of university professors, whereas in others, it is substantially lower on average.

12.3.3 Preferences for Research and Teaching

While university professors are in charge of both teaching and research, it is widely assumed that more professors have a preference for research. It is also widely assumed that the Humboldtian idea of the "unity of research and teaching", which has spread worldwide since the early nineteenth century, has silently supported a

stronger emphasis on research. Moreover, research is in the limelight beyond the individual higher education institution, whereas teaching tends to be an internal affair. Last but not least, it is widely assumed that the recent attention paid to the notion of "knowledge society" and to the diversity of higher education with emphasis on "world-class universities" has strengthened the research function. However, we know that university professors in some European countries traditionally tend to be more strongly devoted to teaching than in other countries; this may have persisted despite amidst the recent pressures in favour of research.

Asked about their interests, most university professors favoured a close link between research and teaching, but preferred research to teaching.

- The percentage of university professors who state a clear preference for research varies by country from 3% (Croatia) to 24% (Austria).
- In summing up the statements, we note a stronger research orientation by about three-quarters or even more of the university professors in most European countries, slightly fewer in the United Kingdom (70%), far fewer in Portugal (62%) and Croatia (65%) and fewer still in Poland (53%).

No clear trend has emerged since the early 1990s. The emphasis on research increased slightly in Germany, remained unchanged in the Netherlands and decreased slightly in the United Kingdom.

A stronger emphasis on research also holds for junior university academics. The responses of professors and junior staff in the individual countries hardly differ except for in Portugal and Ireland, where fewer junior staff puts emphasis on research (53 and 59%), and Poland, where they put more emphasis on research than seniors (68%).

12.3.4 Infrastructure of Academic Work

The assessment of the infrastructure of academic work varies somewhat according to the academics' country. Of the eight areas of infrastructure addressed in the questionnaire (such as technology for teaching, laboratories or library facilities), university professors in Switzerland rate 6.2 areas and those in Norway and the Netherlands slightly more than 5.0 as positive in contrast to 3.6 in Italy and 3.5 in the United Kingdom. Thus, university professors of the countries where they are most satisfied with the infrastructure of their work cite about 1.8 as many areas of the infrastructure as positive as those who are least satisfied. Junior university staff rates the infrastructure in a similar way to the senior academics of their respective country.

12.3.5 International Academic Work

In the framework of this study, academics were asked about their involvement in a broad range of international activities (e.g. international content of teaching, teaching

abroad, international scope of research and international research collaboration). In summing up the positive responses to eight such categories, we note that international activities in teaching and research are

- most widespread among university professors in Ireland, Austria and Switzerland (more than five categories on average),
- somewhat above average in Portugal, Finland, Germany and Norway (more than four),
- somewhat below average in the Netherlands and the United Kingdom and
- even further below average in Croatia and Italy (between three and four), and
- least common in Poland (less than three categories).

Junior academics obviously have fewer opportunities to be internationally active than professors. The respective positive responses are most frequent in Ireland and least frequent among junior academics in Germany and Poland.

Among the various international aspects addressed in the survey, the most substantial variation across European countries can be observed with regard to the use of foreign languages in academic work. Forty-two percent of university professors in the Netherlands report that the language of their home country – Dutch – is the dominant language of neither their teaching nor of their research activities. The respective shares are 25% in Switzerland, 19% in Finland, 15% in Austria and 12% in Norway, and only 5% in Italy, 4% in Germany and 2% in Portugal. As one might have expected, British professors do most of their academic work in the English language. The range of responses is quite similar among junior university academics.

12.3.6 Attitudes to Teaching

Teaching is not only shaped by the knowledge dimensions of the disciplines, but also by basic, cross-cutting attitudes on the part of academics as regards the general purpose of study. The EUROAC study shows substantial variations by country as regards such attitudes to teaching and teaching-related issues:

- About three-quarters of university professors underscore a practice-oriented approach in Croatia (79%) as well as in Germany, Ireland, and Portugal (75% each), but only about half in Norway, Italy and Switzerland, four out of ten in the Netherlands and less than one-third in Finland (31%).
- International issues are the focus of most university professors in Portugal (90%), Ireland (86%) and Austria (84%) and over 60% in almost all other countries. Poland is an exception where less than one-third (31%) emphasises international perspectives.
- More than two-thirds often address issues of values in classes in Portugal (71%) and the United Kingdom (69%), but only 40% in Italy.
- Similarly, almost all professors in the United Kingdom (94%) have an honesty approach in terms of frequently warning against cheating, but the proportion drops to only about one-third in Norway (36%) and Italy (32%).

- Almost all university professors in Finland (95%) and Ireland (90%) have a meritocratic approach in terms of confirming that grades strictly reflect students' achievements, but only somewhat more than half in the Netherlands (59%) and Portugal (53%) and less than one-third in Poland (30%).

Again, the responses by junior university staff are similar to those of the professors in the respective countries.

12.3.7 Teaching Modes

There are noteworthy differences by country as regards the variety of teaching activities. In response to a list of seven types of activities beyond classroom instruction (e.g. learning in projects, electronic communication with students and individualised instruction), professors at Austrian and Swiss institutions mention on average only 2.5 types, while their colleagues in Finland report 4.4 and those in the United Kingdom 4.5. Junior university staff reports somewhat fewer types of teaching and learning modes, whereby differences by country are not smaller than in the case of university professors.

The degree of variety across Europe can be illustrated with a few examples:

- Individualised instruction of students is quite common in Norway (97%), Italy (96%), Finland (92%) and the United Kingdom (88%). But it is reported by only a minority of university professors in Poland (44%) and Germany (43%) and by less than one-fifth in Portugal (17%).
- Learning in projects varies to a smaller degree: between two-thirds in the United Kingdom (66%) and more than half in Ireland, Norway and Finland on the one hand and about one-third in Poland (34%) and Italy (33%) on the other.

Finally face-to-face interaction with students outside class and e-mail communication has become widespread and there is relatively little variation across European countries. The percentage ranges from 61% (Germany) to 95% (Poland) and from 63% (the Netherlands) to 97% (United Kingdom).

12.3.8 Research Approaches

"Research" is a term that has various connotations among individual researchers, between disciplines, between different "models" of universities influencing the development of higher education, and between different countries, different languages, and different types of higher education institutions. In order to understand at least some aspects of this variety, the EUROAC study addressed views about four types of research: whether the academics surveyed considered research as collecting and disseminating original findings, synthesising findings and trends or if their understand research as putting emphasis on the application of knowledge and whether they put emphasis on the social relevance of research.

As one might expect, there is more consensus about some of these aspects than there is about others:

- Of these four issues, the understanding of scholarship as the preparation and presentation of findings of original research is the most widespread and most homogeneous across countries. Yet, even in this case, positive responses by university professors range from 92% in Norway to 68% in Finland.
- Emphasis on the application of academic knowledge in real-life settings is underscored less often than the previous issue, but, surprisingly, the responses do not vary substantially more in this case: from about three-quarters in Ireland, Portugal (each 77%), Croatia (75%) and Finland (74%) to less than half in the Netherlands (41%).
- Similarly, the societal relevance of research is emphasised by almost three-quarters in Portugal (73%) and Croatia (72%) and by less than half of the university professors in Poland (40%) and the Netherlands (45%).
- More considerable differences by country are apparent regarding the task of synthesising findings and trends: we note a range from three-quarters in Croatia (74%) to almost one-third in Poland (32%).

Again, the responses of junior university academics are remarkably similar to those of university professors. This confirms the overall impression that junior academics in the individual European countries hardly differ from senior academics as regards their professional views and attitudes.

12.3.9 Publications

Public debates suggest that academics in all countries are increasingly expected to be visibly productive. One could assume that the number of publications is generally on the rise. We could have expected that a comparison of the findings of the survey conducted in the early 1990s with those of the most recent survey would show a consistent growth trend, but we note a growth of more than half in Germany and of less than half in the United Kingdom, and a drop of about one-fifth in the Netherlands. Although the expectation to be more visibly productive seems to be a global phenomenon, publication activities vary substantially by country. In looking at the individual types of research outputs completed in the last 3 years, we note the following variations by country:

- from 0.2 books authored or co-authored on average by university professors in Poland to 1.5 in Portugal,
- from 0.2 books edited or co-edited to 1.3 (again the most extreme figures are to be found in Poland and Portugal),
- between 0.4 (Poland) and about three research reports (Germany and Portugal),
- between four articles written in Poland and more than 15 in Germany and Switzerland,

- between three papers presented by professors at Polish universities and about 19 of professors at Austrian universities, and finally,
- from 0.8 professional articles written for a newspaper or magazine written by university professors in Poland to three and more in the Netherlands and Switzerland.

According to an index developed in this framework,

- university professors in Germany (56) and Switzerland (55) publish more than their colleagues in the other European countries,
- those in most European countries publish about two-thirds or three-quarters as much,
- those in the United Kingdom (29) and Norway (28) only about half as much, and
- finally those in Poland only a quarter as much (14).

On average junior university academics publish only about half as much as university professors. Hence, the differences by country are substantially smaller. They range from an index score of 29 in Italy and 27 in the Netherlands to 12 in Poland and 11 in Norway. The findings suggest that weekly work time is linked to academic productivity, but is certainly not the only factor at play.

12.3.10 Links Between Teaching and Research

According to the Humboldtian ideal of "unity of research and teaching", involvement in research should enhance the quality of teaching and teaching is expected to provide positive feedback for research. We note that many academics find it difficult to coordinate the different demands of research and teaching in a productive way.

On the one hand, most academics believe that their research activities reinforce their teaching: between 92 and 79% of the university professors in 11 European countries – Poland being the exception (54%). Junior academics do not see this link as positive: between 82 and 60% in 11 countries, again with the exception of Poland (46%).

On the other hand, 27% of university professors and 32% of junior university academics on average of the European countries came to the conclusion that "teaching and research are hardly compatible with each other". Such tension is most frequently noted among professors in Poland (47%), Finland (37%) and Germany (33%). Junior academics in Poland underscore this problem more frequently (61%), followed by about one-third of those in Finland, Germany and Austria.

12.4 Steering

In many countries of the world, the academic profession has experienced increasing efforts over the last two to three decades to steer academic work with the help of regulations, evaluations, incentives and sanctions, as well as growing managerial

power in general. This has been seen by some academics as increasing support for high quality academic work, but is often perceived as an infringement. Again, such trends are all too easily assumed to gain momentum in more or less the same way across many countries. It remains to be seen how far academics differ by country in their perception of the current scene and in the perceived impact on their own role.

Of the various respective themes addressed in the questionnaire survey, the following overview will concentrate on five, namely: the degree to which the respondents perceive regulations and expectations, the assumed side-effects of such regulations, expectations regarding research, managerial power which also mens the perceived management styles as well as the respondents' influence at their university.

12.4.1 Regulations and Institutional Expectations as Regards Teaching

In more or less all European countries, the weekly teaching load is the most obvious regulation, and this is by no means a new feature of increasing steering. But regulations and institutional expectations as regards teaching seem to have grown in other domains. Asked about four issues:

- Slightly more than half the university professors across the European countries note that funding of departments is mostly based on the number of students. This is stated most often by the respondents in Poland (88%) and quite frequently as well by those in the United Kingdom (76%) and the Netherlands (67%), but only by one-third in Finland (33%). Junior academics report such a policy slightly less often, and their responses do not vary to the same extent by country.
- About four-tenths of senior and junior academics on average across Europe note that the academic profession is encouraged to improve instructional skills in response to teaching evaluations. This is perceived by more than half the university professors in Italy (59%) and Ireland (55%) on the one hand and by 10% in Poland and 16% in Finland on the other. The junior academics' responses are fairly similar in this respect.
- Funding based on the number of graduates seems to play a role in one-third of the cases, according to the views of senior and junior academics. This ranges – according to the university professors – from 74% in Finland and more than half in the Netherlands and Norway and less than one quarter in Italy to only 9% in Poland. We note a similar variety in the junior academics' perceptions.
- Teaching quality is taken into consideration in personnel decisions according to one-third of university professors across Europe. The respective shares range from slightly above one-third in the Netherlands (37%) and the United Kingdom

(35%) to 13% in Italy and 17% in Portugal. Only one-fifth of junior academics believe that teaching quality plays a role in personnel decisions, whereby the responses vary to a similar extent.

12.4.2 Undesirable Side-Effects of Research Management

With regard to research, academics were asked whether certain expectations could have undesirable side-effects:

- Almost two-thirds (63%) of university professors across Europe consider high expectations to increase research productivity to be a threat to the quality of research. The percentage of those who hold these perceptions varies from three-quarters in the United Kingdom (77%) and Croatia (75%) to about half in Germany (49%) and Italy (52%). The responses of junior academics are fairly similar.
- Slightly fewer university professors (58%) and many junior academics across Europe believe that high expectations to produce useful results are a threat to the quality of research. The percentage of those who hold these perceptions varies even less – from 68% in Austria to 48% in Italy among university professors and similarly among junior academics.

These findings are a clear expression of scepticism among academics that efficiency-oriented and productivity-oriented institutional strategies are compatible with academic objectives.

12.4.3 Perceived Power of the University Management

The power of the management at higher education institutions (as well as that of other actors) to decide on a multitude of aspects related to academic activities was assessed by the respondents as regards 11 areas of decision-making (e.g. choosing new academics, promotion, determining budget priorities, evaluating teaching, setting internal research priorities, etc.). Across European countries, the executive powers within the university (presidents, deans, etc.) are viewed as having the prime influence in almost half the cases: 48% of university professors and 46% of junior academics.

According to the professors' views, the executive power is

- strongest in Austria (66% on average with regard to the areas of decision-making addressed),
- strong in slightly more than half the cases in the Netherlands, Ireland, Germany and Poland,
- strong in slightly less than half in half the countries surveyed,
- clearly weaker in Finland (36%) and
- by far the weakest in Croatia (24%).

Again, the responses by junior academics are similar.

12.4.4 Management Styles

How academics in Europe perceive the prevailing management styles at higher education institutions may be illustrated by the following:

- A top-down management style is reported by three-quarters of university professors in Ireland, but only by one quarter in Norway.
- Somewhat fewer university professors are convinced that top-level administrators provide competent leadership than those observing top-down management styles. Competent leadership is underscored by half the university professors in Portugal, but only by one quarter in the United Kingdom.

Junior academics have similar views as regards top-down management styles, while ratings of competent leadership are relatively positive in various countries: Croatia (49%), Switzerland (44%), Portugal (42%) and Finland (40%).

12.4.5 Own Influence

As strong management does not automatically create constraints for the academic profession, the academics surveyed were asked how influential they considered themselves to be in shaping key academic policies. The responses show that

- at the faculty level, university professors in Croatia (69%) and Germany (63%) consider themselves to be quite influential. Professors in the Netherlands follow in third place at quite a distance (49%). In contrast, professors in Ireland (11%) and Norway (21%) do not consider themselves to be very influential. The average across European countries is 35%.
- As one might expect, fewer professors consider themselves influential at university level: 15% on average across Europe. Influence at that level is most frequently reported by professors in Germany (26%) and Portugal (22%) and very seldom by those in Ireland (4%).

Not surprisingly, junior university staff considers their influence to be marginal. The respective means across European countries are 10 and 4%.

12.5 Satisfaction

Job satisfaction is an important theme in the analysis of various professions. On the one hand, it is viewed as the result of a good working environment; on the other, it can be a key foundation for doing a good job.

Some themes which are closely linked to job satisfaction were addressed:

- The statement “my job is a source of considerable strain” is clearly least often agreed with by university professors in Croatia (10%) and at a below average rate

in Italy (27%), but frequently in the United Kingdom (61%) and the Netherlands (56%). The junior academics' views are fairly similar.

- The statement "this is a poor time for any young person to begin an academic career in my field" is agreed with by only 27% of university professors in Norway and 35% in the Netherlands, but by 78% in Austria and 73% in Italy. Again, junior academics express similar views.
- Finally, about one out of six academics agrees with the statement "if I had to do it all over again, I would not become an academic". In most countries, the respective shares among both professors and junior academics range between 10 and 22%, with most negative responses on the part of academics in the United Kingdom (22 and 30% respectively).

Most academics express high, but not overwhelmingly positive overall professional satisfaction. On a five-point scale, the most positive ratings by university professors are 1.9 on average in Switzerland and 2.0 in Croatia. In most countries, the mean values are between 2.1 and 2.3, whereas professors are least satisfied in the United Kingdom (2.6). In percentage terms, between 5 and 10% of university professors express dissatisfaction with their overall professional situation in 8 of the 12 countries addressed. They represent 13% in Austria, 15% in the United Kingdom, 16% in Croatia and 19% in Ireland.

In all countries, junior academics are moderately less satisfied than senior academics. The mean score on the five-point scale is most positive in Croatia (2.1), between 2.3 and 2.6 in ten countries and 2.8 in the United Kingdom. The rate of those expressing dissatisfaction ranges from 9% in Norway to 20% in the United Kingdom. In most countries, women and academics who are employed part-time are less satisfied than men and those employed full-time.

12.6 Conclusion

The public debate on diversity in higher education suggests that the national systems of higher education are likely to become increasingly similar as a consequence of efforts to create a convergent European Higher Education Area and a European Research Area, and the widespread belief in the virtue of certain trends of "modernisation" of higher education and global competition to create world-class universities according to global rankings. In some respects, the available comparative surveys on the academic profession confirm such trends by showing a spread of evaluation activities and a growth of visible international activities.

However, the national surveys of the views and activities of scholars at higher education institutions in 12 European countries undertaken recently in the framework of the EUROAC study "The Academic Profession in Europe: Responses to Societal Challenges" indicate a substantial variety by country. Given the responses to about 50 questions examined in this final chapter, we note very few themes which would allow us to talk about a "European" academic profession.

In Europe, the term "university" refers to higher education institutions that are in charge of both research and teaching. In almost all countries, almost all professors who are employed are employed full-time. Most university professors across countries express a preference for a link between research and teaching and note that their research activities have a positive influence on their teaching. Their daily working life is shaped by the division of the year into periods when classes are in session and teaching and teaching-related activities require substantial amounts of time, and periods when classes are not in session which are dominated by research. The doctorate is now such an important entry qualification to an academic career that we note substantial growth rates in countries where it was not more or less mandatory in the past. The increasing number of women among professors is a universal trend. There is also no doubt that research predominantly comprises the generation and dissemination of original knowledge. Last but not least, junior university academics hold very similar views about their work situation and very similar academic values, even if their work tasks and their employment conditions differ.

Beyond this core of patterns, we only note various themes where differences across European countries can be viewed as minor. Notably, between half and three-quarters of university professors share the view that a strong emphasis on academic productivity endangers the quality of academic research. And job satisfaction is similar across countries: most academics are not enthusiastic, but clear dissatisfaction extends only from 1 out of 20 to 1 out of 5 across countries, and the figures are similar for those who state that they would not become academics if they had to choose again. The share of university professors who consider their job to be a source of considerable strain varies by country from 10 to 61%.

As regards most themes addressed above, we note substantial differences by country. To illustrate this with some aspects of academic work: average working hours of university professors correspond in one country, while 30% more hours per week are customary in two countries. The top countries in terms of publications produce twice as many as the country that is second lowest in this respect and four times as many as the country at the bottom. Out of eight dimensions of the infrastructure for academic work, 6.2 are rated as good at one end of the scale and only 3.5 at the other.

In some cases, the differences by country could be called extreme. In the poorest European country, the salary of university professors weighed by purchasing power does not even reach one-tenth that of the country where professors receive the highest salaries. Certainly, in many cases it is difficult to decide whether one should interpret the findings as "relatively similar" or as "relatively varied" across European countries. For example, at one extreme, university professors spend 1.8 times as much time on research as on teaching during the year, whereas at the other extreme, they spend about as much time on research as on teaching. If we believe in a strong convergence of higher education across Europe, we could describe this as a substantial difference; but if we take into consideration traditional differences in the characteristics of national higher education systems, we could see this spread as moderate.

In interpreting the differences by country, we can refer to the traditional characteristics of universities in the respective countries. For example, in assuming that a typical research-oriented professor prefers to do research, spends a relatively large amount of time on research, emphasises basic and original research, is securely employed, has a heavy weekly work schedule, is internationally active, is not interested in a diversity of teaching activities, and publishes a great deal, we come to the conclusion that in most of these aspects most university professors come close to this model only in Austria, Germany and Switzerland. Academics in other countries differ from this model in various ways: in some countries in terms of having a less tough time schedule, in others in a strong emphasis on teaching (for example in the United Kingdom), in still others in a very pragmatic understanding of their research and teaching role; and finally, in one country many financial and other constraints lead to academic work having very restrictive character of academic work.

But the overview presented above has yielded many results that do not fit easily in such notions of traditional university models. Do we expect Italian professors to be more intra-institutionally mobile than their colleagues in other countries? Do we expect university professors in Croatia to be the most satisfied with their job?

In reviewing this comparative survey, the scholars involved came to the conclusion that three major worldwide trends had been most influential for higher education: internationalisation of the context and inner life of higher education, a growing expectation that higher education should be directly socially relevant, and an increase in managerial power in higher education institutions (see Kogan and Teichler 2007; Locke and Teichler 2007). It is worth examining whether we observe a relatively high degree of similarity of European countries in these three respects.

As regards internationalisation, we note that twice as many international activities in teaching and research are cited on average by university professors of the most international countries as in the least international. An international emphasis in the substance of teaching is underscored by 80% at one end of the scale and 30% at the other. Teaching and research predominantly undertaken in another language are reported across the various countries (excluding the United Kingdom here as a special case) by between 42% on the one hand and 2% on the other. These do not suggest that strong emphasis on international issues has led to a relatively high degree of similarity.

As regards societal relevance of teaching and research, we observe that practice-oriented teaching and learning are emphasised by between 79% of university professors on the one hand and 31% on the other. Research is understood as having to contribute to application by between 77 and 41% and having to be socially relevant by between 73 and 45% of university professors across countries. The latter two differences are relatively limited, but still too substantial to allow interpretation as a high degree of similarity across European countries.

Finally, as regards strong management, a strong executive power in higher education is reported at one end of the scale for two-thirds of various areas of decision-making and at the other for only one quarter of these areas. A top-down management style is perceived by between one quarter and three-quarters of respondents.

Between 69 and 11% of the university professors believe that they are very influential at department level and between 26 and 4% at the university level. Again, this cannot be viewed as indicating a similarity across countries.

Altogether, there are some common or at least widespread perceptions about higher education and academic work among university academics across Europe. But overall, the results of the surveys in 12 European countries show enormous variety. This finding could be disappointing for those who expect or advocate a European solution of higher education and a European academic profession. On the other hand, one can argue that the multitude of options in Europe preserves the opportunity for mobile students and mobile academics to learn from contrasting experiences, and that exciting discourses across Europe about the best possible ways to improve higher education will continue. A variety of systems may also offer the conditions to stimulate a wider diversity of ideas and innovative research results. After years of discussion on elegantly formulated objectives such as the European Higher Education Area and the European Research Area, higher education systems in Europe have remained fairly varied (see Curaj et al. 2012). Similarly, the academic profession has remained extremely varied across Europe and will still have ample room to ponder on the pros and cons of this state of affairs.

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Appendix: Basic Information on Higher Education in Countries Participating in the Comparative Survey on the Academic Profession in Europe

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Austria

Size and sectors: Up until the early 1990s, public universities monopolised the Austrian higher education sector. Thereafter, a *Fachhochschule* sector and a small private sector have developed, and teacher-training institutions (formerly not regarded as higher education) were upgraded to institutions of higher education (*Pädagogische Hochschulen*). Yet, public universities still account for about 80% of the total enrolment in higher education. Regarding entry, participation and graduation rates, Austria ranks substantially below OECD average. Views vary whether this constitutes a problem. Advocates of the status quo argue that the well-developed vocational training sector at secondary level represents a reasonable alternative to tertiary expansion.

Admission: While secondary education is highly selective, "open admission" policy prevails at entry higher education. All citizens having completed the *Gymnasium* – the academic track of secondary education – are entitled to enrol in any programme at any Austrian university. In 2005, when the European Court ruled that Austria must grant the domestic conditions of access to all EU citizens, the Austrian government introduced restrictions in those fields of study where restrictive admissions (*numerus clausus*) is applied in Germany. Universities in Austria call for either increased funding of higher education or for the right to restrict admissions, if student numbers tend to surpass capacity.

Governance: Two reform laws (UOG 1993, UG 2002) have dramatically restructured the governance of universities. Formerly, universities constituted state agencies, micromanaged by the ministry. Academics were civil servants, and the rector was regarded as *primus inter pares*. Under the UG 2002, universities have since become "legal persons under public law" (*Körperschaften öffentlichen Rechts*) and are managed by a new type of rector – no longer elected by the

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academic senate but rather appointed by a board (*Universitätsrat*) that carries out a supervisory function. Universities are now relieved from the fiscal regulations of the federal budget and receive instead a lump sum budget to be administered at their own discretion. Academics are employed by the university on the basis of private contracts. The development of a "tenure track" as a functional equivalent to the job security of the former civil servant status is an important but currently unresolved policy issue.

Funding: Public expenditures for higher education as a proportion of GDP in Austria are in the range of OECD average. However, the financial situation of different fields of study varies dramatically since funds are linked closely to student numbers. Some under-enrolled disciplines are well resourced, while others are overenrolled even up to 400 students per faculty member. Rectors advocate that universities should be funded on the basis of study places, but government resists due to an open admission policy (cf. below). Tuition and other fees have remained a controversial issue. In 2002, 727 € tuition fees were introduced, but since 2008, only those students have to pay tuition fees who prolong their study beyond the required period without any legitimate excuse.

Careers: Academic careers at Austrian universities are structured along the Germanic pattern that is characterised by a hierarchical division between full professors and academics below professorial status. Yet, Austria was known until recently for a peculiar variant of that pattern. Unlike Germany where academics below professorial status have only fixed-term positions, Austria granted permanent employment to junior academics as well. During the 1990s, when fiscal stringency caused a freeze of academic positions, this pattern resulted in a sharp insider/outsider conflict. An aging cohort of academics with varying qualifications but high job security was confronted by a "lost generation", a younger age cohort that – irrespective of their qualification – had very little chance of obtaining permanent positions.

In the framework of the new legal setting for governance in the early 2000s, the nature of academic career patterns was changed as well. Since then, similar to Germany, academics in Austria below professorial status have no longer permanently employed. This reduced the conflict between young academics pointed out above but created new problems, because many qualified academics could not continue to work at universities when their fixed-term contract expired. In the late 2000s, eventually, universities and unions reached a collective agreement that comprised elements of a new tenure track. The proportion of such opportunities, however, remained substantially lower than in the USA. Moreover, entrance to the tenure track is not sufficiently competitive but rather gives advantage to insiders. Finally, the tenure track leads to the position of an associate professor. Full professorship is subject to a special appointment procedure that is not part of the tenure track.

Switzerland

The system: In 2010, 206,000 students were enrolled in Swiss higher education institutions (more than twice as many as 15 years earlier). Public expenditures for higher education comprised 1.2% of national GDP.

The Swiss higher education system is structured along two axes. On the one hand, Switzerland is a federal state, where cantonal and federal governments share responsibility on higher education. On the other hand, Switzerland is a binary system in the mid-1990s: nine universities of applied sciences have been established. Each higher education institution with its specific public authority features has its own academic statuses, salaries and recruitment rules. This reflects the fact that each cantonal university has its own cantonal authority and legal framework; the institutes of technology are regulated by the federal government; most universities of applied sciences are funded and supervised by various cantons each.

Study and graduation: In the first decade of the twenty-first century, the higher education system in Switzerland has undergone a series of reforms in order to comply with European educational policies as well as in order to become more efficient and competitive at international and global level. The Bologna model of study programmes and degrees has been gradually introduced since 1999, and cantonal and federal legal frameworks were modified since 2001.

The ten cantonal universities and two federal institutes of technology grant bachelor's, master's and PhD degree, while the nine universities of applied sciences grant bachelor's and, since 2007, master's degrees. The *Habilitation*, similar to a second doctorate, is granted in the German-speaking part of Switzerland and constitutes a prerequisite for a professorship.

Governance and funding: The two federal institutes of technology in Switzerland are entirely financed by the confederation through a 4-year research and education block grant. Cantonal universities receive their funds directly from their home canton; previously, the university budget was part of the state budgeting allowing the canton to decide on specific line items and on personnel structure. Recently, a lump sum system has been introduced for the universities as well, whereby the budget – after negotiations between the university and ministry – eventually is approved by the cantonal parliament. Moreover, the federal government grants, through the university act, every 4 years subsidies to the universities. This is formula based since 2001 – calculated according to the number of university students (70%) and the grants from competitive research (30%). Finally, cantons pay a fixed amount for each resident student studying in another canton, calculated according to three main disciplinary groups (humanities and social sciences, natural sciences and medicine).

The academic profession: In 2008, the cantonal universities and the federal institutes of technology in Switzerland altogether employed 2,900 professors, almost

2,900 lecturers, 15,900 assistants and scientific collaborators and about 11,100 administrative and technical staff. Concurrently, the universities of applied sciences employed 3,500 professors and altogether 10,200 persons.

The responsibility of the recruitment for permanent positions is usually divided between cantons and universities: the universities are responsible to select while the state formally hires and defines salary scales. However, the latter responsibilities have shifted recently to university boards in some institutions. Tenure tends to be acquired relatively late in one's career due to the chair system. Nontenured positions prevail for different statuses of teaching and research assistant to postdoc, researcher and lecturer. Tenured positions are customary for professors and, at some higher education institutions, for specific positions of lecturer and researcher (e.g. *Maître d'enseignement et recherche*) as well. Denominations and their respective status can vary from one institution to the other.

Altogether, about 75% of all academic salaries are funded through the institutions' core budget, which comes from public authorities, about 10% by the National Science Foundation (SNF) and 15% are funded by third parties (industry, private organisations, European funding). Ninety-two percent of the professors' salaries are covered by the core budget but only 60% of the salaries of other academic staff; in the latter case, the SNF plays a major role.

The Swiss higher education system is among the most internationalised in Europe as the EUROAC survey shows. In 2010, reveals that 44% of the Swiss academics are foreign born, and a similar proportion has obtained a PhD abroad. International staff can be found more often in the university sector (50%) than in UAS sector (31%).

Croatia

The system: On the national level, the higher education system in Croatia is defined by the Law on Higher Education passed in July 2003. The Ministry of Science, Education and Sports is responsible for its implementation. Croatia has nine accredited universities (seven public and two private), 15 polytechnics (among them three private) and 27 colleges (24 private). Constituent units at the universities in Zagreb, Split, Rijeka and Osijek are mainly faculties, while the universities in Dubrovnik, Pula and Zadar as well as the International University of Dubrovnik and Croatian Catholic University of Zagreb are organised in departments. The University of Zagreb has 34 constituent units, the University of Split 15, the University of Rijeka 14 and the University of Osijek 16 constituent units.

Study and graduation: Studies in Croatia are divided into two categories: university and professional studies. University programmes are organised as a three-cycle system – undergraduate, graduate and postgraduate – in accordance with the Bologna system since the academic year 2005/2006. Professional programmes are provided primarily at colleges of applied sciences and schools of professional higher education and last for 2–3 years.

The number of students in university programmes increased moderately from 110,989 in 2005/2006 to 118,792 in 2009/2010 and those in professional programmes from 25,657 to 31,061 during the same period. As a consequence of prior growth of enrolment, the number of graduates increased more substantially during that period: from 13,354 to 24,993 at university programmes and from 4,836 to 5,163 at professional programmes. The number of master graduates hardly changed (973 and 963, respectively), while the number of doctoral awards increased from 385 to 572.

Governance and funding: To ensure homogeneity of higher education in Croatia and to prevent the establishment of new institutions without the necessary justification, the National Council for Higher Education has defined the prerequisites and criteria for establishing new higher education institutions in the document *The Projection of the Network of Public Higher Education Institutions in Croatia*. Croatian universities are autonomous as regards enrolment procedures and quotas, tuition fees, budget management and strategic planning. Since 2007, government supports the institutions of higher education through lump sum funding. According to the 2009 Law on Quality Assurance in Higher Education, universities will be accredited and re-accredited whereby their level of success and competitiveness will be assessed.

The academic profession: A total number of academic staff in higher education institutions in Croatia has increased from the mid-1990s until 2010 by about 40% despite employment restrictions in the public sector. However, this figure falls short of the number of students.

Traditionally, academics were continuously employed at those institutions where they already had been enrolled as students. In recent years, career mobility of academics has increased in line with respective programmes to mobility and efforts to internationalise academic careers.

Typical junior staff positions are assistants and junior researchers, while senior staff is divided into three categories: assistant professor, associate professor and full professors. Additionally, there smaller numbers of teaching positions (lecturer, senior lecturer, tutor and senior tutor) and associate positions (expert associate, senior expert associate and expert advisor).

Promotion to senior staff positions is undertaken on national level. National bodies in Croatia stipulate minimal conditions for promotion to these positions, and the universities can add further conditions in their statutes (which is rarely done). The competition for those positions is not high, some disciplines are even lacking in qualified scientists. Many newly founded institutions hire senior academics part-time who are most employed full-time at another university. Only recently, this practice is challenged as causing a conflict of interest.

Ireland

The system: The public higher education sector in Ireland consists of a binary system of 7 universities and 14 institutes of technology. Additionally, there is a small number of teacher-training institutes and private and independent colleges.

The university sector in Ireland offers degrees ranging from bachelor's and master's level through to PhD. In recent years a number of institutes of technology have been granted higher degree awarding status. Institutes of technology emphasise technology and skill-based education and offer programmes of study related to construction, hospitality and tourism, information technology and the arts. Higher education institutions in Ireland are relatively small by international standards ranging from approximately 5,000 students in the smallest to over 20,000 students in the largest.

Study and graduation: There has been substantial growth in the number of students undertaking higher education in Ireland in recent decades. The number of full-time students has risen from approximately 19,000 in 1965 to 156,268 in 2010. Over 60% of students who complete secondary education go onto higher education. The vast majority of students are in the age group 18–22. Mature students (undergraduates older than 23 at the commencement of their programme) account for approximately 14% of entrants to the higher education sector. Participation rates by students from non-European Union countries are relatively low, comprising approximately 5% of all entrants to the sector. Approximately 18% of all graduates are from master's level programmes. Women account for 60% of all graduates from the higher education sector. Approximately 60% of students in higher education attend the university sector with 40% attending institutes of technology.

Governance and funding: Approximately 85% of funding for the higher education sector in Ireland comes from public sources. Ireland spends 1% of its GDP on higher education. A statutory body, the Higher Education Authority, is responsible for funding the higher education sector on behalf of the state. In addition, the Higher Education Authority also coordinates state investment in higher education. Tuition fees for students were abolished in 1996; however, students have to pay a registration fee; this fee has increased year-on-year. The aim of the abolition of tuition fees was to increase participation rates from lower socio-economic groups; however, the success of the abolition of tuition is debateable, with the greatest proportion of entrants to the higher education sector coming from higher socio-economic groups.

The university and technology sectors are governed by two acts: the Universities Act of 1997 and the Institutes of Technology Act of 2006. These acts provide institutions with autonomy and independence; however, they are monitored by the Higher Education Authority and substantially funded by the state.

Following a period of rapid growth, funding and expansion, the higher level sector in Ireland is facing new challenges associated with the economic crisis and a related reduction in the funding available for both teaching and research. This has led to a reduction in staff numbers, a halt on recruitment and promotions and a debate on the reintroduction of fees for students.

The academic profession: Academic freedom for the academic profession is protected in Ireland in both the Universities Act of 1997 and the Institutes of Technology Act of 2006. Contracts for academic staff vary between the university and institute of technology sectors. For example, university contracts do not stipulate the number of

teaching hours that are required to be fulfilled by academic staff; however, academics employed in the institute of technology sector are required to teach approximately 16 h per week over the course of an academic year.

Academic staff are generally classified according to their grade: professor, associate professor, senior lecturer, lecturer and junior/associate lecturer. The pay scales of academics do not generally vary from institution to institution and are agreed as part of the public sector pay negotiations. The majority of new academics enter the profession at lecturer grade. Approximately 80% of academics in Ireland hold permanent positions and are tenured; this is relatively high compared to other European countries. However, in recent years there is growing uncertainty regarding the career paths available to academics, and many new entrants to the profession are on temporary or short-term contracts.

Poland

The system: There are altogether 131 public institutions of higher education in Poland, among them 18 universities and 27 polytechnics. Research income is highly concentrated: 50% in 8 public institutions and 84% in 25 public institutions. Higher education is characterised by a large private sector which started in the early 1990s and comprises 325 institutions (2011). About one-third (31.5% in 2010) of students are enrolled in the private sector which is fully fee dependent. Eighty percent of private institutions offer only bachelor's level programmes.

Study and graduation: The total number of students in Poland is 1.84 million (2010), including 0.89 million part-time students. Forty percent of students are in the "social sciences, commerce and law" OECD category. The number of PhD students is 32,500 (2010), and the annual number of doctoral degrees granted is about 5,000. The Bologna cycle system of bachelor, master and doctoral programmes was introduced relatively quickly. Yet, it is in the process of being fully recognised (and fully rewarded in the labour market).

Governance and funding: In Poland, the power of the academic community in general and of rectors and rectors' conferences in particular is relatively high. In the last two decades, all reforms were either prepared by academics themselves or blocked by them. The exception is the current wave of governance reforms, culminating in March 2011 with a new law on higher education. Since 2008, the ministry has started various legal and other initiatives: towards more institutional autonomy combined with accountability, multiyear performance contracts for teaching, competitive grants for research replacing the traditional less competitive subsidisation, stronger management teams in higher education institutions, i.e. stronger rectors and weaker collegial bodies, and the introduction of boards of trustees and the legal options of mergers and bankruptcies for all institutions of higher education.

The total higher education revenues in Poland in 2010 were 19.543 billion PLN, i.e. about 5 billion €. About 84% of revenues were in the public sector and about 16% in the private sector.

The academic profession: According to recent statistics, the total number of academics in Poland is 102,000. Among them, 22% are in a professorial rank (with and without the professorial title). Most academics in private higher institutions are not employed full-time there; rather, they are employed full-time in public institutions and teach additionally in private institutions.

The Netherlands

The system: A main feature of Dutch higher education is its binary structure, which separates the research-intensive universities from the professional institutions (*hoger beroepsonderwijs* – HBO) which are internationally termed universities of applied sciences (UAS). There are 14 universities in the Netherlands including the Open University and about 42 UAS, all publicly funded. The privately funded higher education sector is very modest. Universities and UAS developed under very different historical conditions and are based on different rationales and purposes. The UAS are mainly teaching institutions preparing students for various professional fields. The last decade, they have been assigned a research function as well, namely, practice-oriented research in the context of professional development. The government supports this through earmarked funding.

The binary structure is the major source of system differentiation, and there is a high degree of uniformity within each segment in terms of the quality of teaching and research. In 2010, the Committee on the Future Sustainability of the Dutch Higher Education System ("Committee Veerman") supports this binarity but advocates more differentiation within each of both sectors, challenging each university and UAS to develop a distinctive profile and to make clear choices regarding their mission. This would make the system more diversified.

Study and graduation: About 35% of the total student population in the Netherlands are enrolled in universities against 65% in UAS. This nearly 2:1 balance in favour of the UAS is much higher than in most other European countries with a binary higher education system. Whereas access to universities is restricted to students from the specific preparatory stream in upper secondary education, access to UAS is open to those with various preparatory streams, including the vocational sector.

Higher education in the Netherlands is based on the three-cycle degree structure, consisting of bachelor's (3 years), master's (1–2 years) and PhD levels (4 years), in conformity to the Bologna model. UAS offer predominantly bachelor programmes and master's only in specific areas which are acknowledged by the government as being important from a societal perspective. UAS also provide 2-year programmes leading to the associate degree. The right to award doctoral degrees is

reserved to universities which offer doctoral programmes in the framework of graduate schools and (interuniversity) research schools.

The student dropout rates are considered too high; therefore, more attention has been paid to teaching and the organisation of study programmes. Two aspects are important in this discussion. Moreover, efforts are made to improve the selection process at admission to higher education in order to get a better match between students' abilities and interests and the character of the respective programme. Finally, steps were to broaden the bachelor programme in order to avoid too early specialisation within a fragmented undergraduate structure in to leave more options for subsequent choices.

Governance and funding: The governance structure in Dutch higher education has developed over the years towards a strengthening of managerial self-governance via executive leadership within the higher education institutions. Institutions of higher education have much discretionary room regarding lump sum budgeting, administrative and financial control over property and buildings, appointment and management of academic staff and regarding the organisational structure. Particularly, the power of the executives and managers has been strengthened.

However, state regulation has not disappeared completely, and the state maintains control over the system through funding mechanisms. The competition for research funds has increased over the years, and the designation of high-priority areas for the Netherlands ("top sectors") aims at concentrating research resources and at forcing higher education institutions to collaborate with industry and to engage in public-private partnerships. The proportion of performance-based funding is increasing. In order increase the diversity of the higher education, the government reinforces profiles and provides incentives for improved performance through contracts with individual institutions of higher education.

Tuition fees have steadily increased up to 1,770 € annually in 2011/2012. Governments aim at reducing the length of study by requiring the institutions to charge more than twice as high tuition fees from students surpassing the required duration and study.

The academic profession: In the Dutch university sector, three major ranks exist which correspond the assistant, associate and full professors. All the ranks have both teaching and research functions. A new system position became effective in 2002 which provides the opportunity of functional differentiation, whereby, however, teaching performance and research performance are assessed equally for promotion and tenure.

Academics at UAS have mainly a teaching task. In order to serve the growing research function of UAS, a new rank of lector (a kind of professorship) has been created who is being assigned a leading role in a research group. A doctorate is not an entry qualification of academic careers in the UAS sector, but there is a policy to increase the number of staff at UAS with higher academic degrees, including those with a doctoral degree.

Recently, tenure track positions have been introduced at Dutch institutions of higher education to make the employment relationship more attractive and

performance oriented. Candidates can expect to be promoted within the university, if this is part of an agreement and if they meet the expectations according to predetermined goals with a period of 5–6 years; otherwise, they will be discharged outright. This is regarded as a very heavy and stressful system of career trajectories.

Germany

The system: Altogether, more than 400 institutions of higher education in Germany are primarily divided into more than 100 universities, in charge both of teaching and research and entitled to grant doctoral awards as well as the *Habilitation*, i.e. the usual entry qualification for a professorship, and more than 200 *Fachhochschulen* (translated as "universities of applied sciences"), being predominantly involved in application-oriented teaching and learning and also in applied research. Among other institutions, those specialised on fine arts are the largest group. Other tertiary education institutions and programmes, referred to in international statistics and overviews as "tertiary type B" or "ISCED 5B", are conceived in Germany as part of the vocational training system. The universities in Germany are generally viewed to differ only to a limited extent vertically and horizontally, i.e. in academic quality and specific profiles.

Study and graduation: The entry quota to German higher education of about 40% in 2007, when the survey was undertaken, and the graduation quota of 25% is among the lowest in Europe; the quotas are less than twice as high as in the 1970s. In contrast, the rate of doctoral awards – more than 2% of an age group – is among the highest in Europe. More than 60% of the students graduate from the university sector. Study programmes are viewed as highly specialised according to disciplines and in most of the cases closely linked to respective professional areas. Prior to the Bologna process, students at universities were awarded a *Diplom* or Magister or passed a state examination after mostly more than 4 years while students at *Fachhochschulen* were awarded a *Diplom* after 4 years of study (possibly including internship periods). A bachelor-master system of study programmes was introduced recently with mostly 3 and 2 years study periods, respectively, in most of the fields of study. Except for less than 10% involved in doctoral programmes, doctoral candidates in Germany are individually supervised. About 10% of students enrolled and somewhat more than 10% of doctoral candidates had been international mobile.

Governance and funding: German higher education is a federal system: the 16 *Länder* governments supervise and fund higher education institutions, while the federal government is involved in various issues of system coordination and plays a role in funding major proportions of research promotion, construction in higher education and need-based student scholarships and loans. The traditional combination of government strongly involved in detailed supervision on the one hand, and safeguarding academic freedom on the other hand was substituted in recent years deregulation as far as detailed supervision is concerned, by a growing strength of

institutional management, various means of evaluation and increased incentive steering; the links between government and institutions of higher education are strongly shaped through multi-annual contracts. More than 95% of students are enrolled in public institutions of higher education where students do not pay tuition fees in the majority of *Länder*. Basic funding of universities guarantees support for research, but most scholars raise external funds for research which is widely held as the most important criteria for academic reputation. About 1% of the GDP – predominantly public funds – is spent on higher education in Germany.

The academic profession: The academic profession in Germany is clearly divided between professors and other academic staff. There is no corresponding term for "academic staff"; rather, the former are called *Hochschullehrer* and the latter *wissenschaftliche Mitarbeiter* or *wissenschaftlicher Nachwuchs*. The majority of doctoral candidates are employed – often part-time – at universities. Academic staff with a doctoral degree – the majority of them short-term employed – tended to perceive themselves as clearly subordinated to professors that means, structurally, there is no clear middle category between *Hochschullehrer* and *wissenschaftlicher Nachwuchs*. A law prohibits *wissenschaftlichem Nachwuchs* from being employed for more than 6 years at HEIs without reaching the next qualification stages doctorate or *Habilitation*.

Only recently, the introduction of the *Junior-Professor* title at German universities for some of the advanced academic staff underscored a higher level of independence and higher academic reputation. The number of academic staff at universities is almost four times as high as the number of professors. In contrast, only a few junior staff positions exist at *Fachhochschulen*. Altogether, junior academic careers in Germany are viewed as highly selective and competitive and, therefore, offer very insecure career perspectives. Junior staff is not promoted to professorial positions within the same university but rather has to be institutionally mobile when appointed to a professor position. Almost 10% of academic staff are foreigners.

Finland

Legal framework: Arguably, the major influences of higher education in Finland in the second decade of the twenty-first century derive from a series of past and future institutional mergers and new acts of parliament to regulate both sides of Finland's binary higher education system. As far as universities are concerned, a new *Universities Act* took effect from 1 January 2010. The major changes promulgated by this *Act* have been to grant universities' status as independent legal entities, to change the ownership and management of university buildings, and a range of governance-related changes. An act of parliament to reform the polytechnic sector is likely to come into force in 2014.

The system: Finnish universities have the right to issue third cycle doctoral degrees. For many years, there were 20 universities funded by the education ministry, but

after three discrete mergers, currently there are 16. Fourteen of these are *institutions subject to public law*, and two are *foundations subject to private law*.

Finland also has 25 polytechnics (unofficially *universities of applied sciences*), 11 of them run by municipalities or federations of municipalities, and 14 run by private licence holders. Institutions in the polytechnic sector offer second cycle degrees but do not have the right to issue doctoral degrees. The Finnish binary system is stratified according to institutional diversity rather than programme diversity. There is no formal stratification between universities and polytechnics, but they have different roles to play. Universities offer similar content in educational programmes in different parts of Finland. It is clear that there are differences in practice, because educational programmes are implemented in very different environments and in different capacities. Universities' research responsibilities are extensive, and the polytechnics have a clearer duty to respond to the needs of labour markets.

Study and graduation: The establishment of Finnish polytechnics in the early 1990s significantly increased the number of students in tertiary education, and the university sector also grew. In 2009, there were 152,000 full-time student at universities and 134,000 at polytechnics.

Admissions for universities and polytechnics are based on the principle of restricted entry (*numerus clausus*), i.e. some applicants for study places are not accepted even if they are eligible according to the regulations. Universities' first cycle degrees (at the bachelor's level) do not guarantee graduates access to the labour market, and almost all university students must complete a second cycle master's degree programme. The corresponding first level of a polytechnic degree has high status and acceptance in the labour market, and only a minority of polytechnic students continue to second cycle degrees. Comparative studies have suggested that Finnish graduates are among the oldest in Europe.

Governance and funding: The main reforms instigated by the new *Act* mean that university governance in Finland has changed in such a way that the traditional tripartite system in decision-making is becoming weaker, and the role of external stakeholders is growing. In fact, structural reforms can be seen as a result of a long-term trend, as the work of universities has changed significantly. Lump sum funding was introduced.

University autonomy increased with the passage of the new Act, but in practice, universities remain dependent on the public purse for the vast majority of their funds. However, universities are now freer to earn and acquire funds from external sources, such as by charging some students tuition fees under certain limited circumstances. Changes in other Finnish laws have also brought in tax deductibility to universities for both personal and corporate donations.

The academic profession: The major positions of academic staff in Finland are professors, assistant professors, principal lecturers, lecturers, assistants and researchers. Until the new Act came into force in 2010, universities were directly linked to the national government, and university employees were civil servants. Most academics are employed full-time; part-time teaching or research posts are exceptional.

Italy

The system: Historically, universities have dominated Italian higher education. Universities are considered formally equal. They all provide both teaching and research and award doctoral degrees. There has been and there still is little room for horizontal or functional diversification and competition between institutions. Most universities are generalist, and few – for instance, the polytechnics – are specialised institutions. Higher education in Italy has developed under a strong state monopoly, and the private sector has always been small. In 2007/2008, when the CAP survey was carried out, there were 88 universities: 61 public institutions including 3 polytechnics and 27 private institutions including 11 institutions providing distance learning. There were also six special higher education institutions such as the *Scuola Normale Superiore* in Pisa. Most students (95%) attended public universities.

Study and graduation: Following the reforms connected to the implementation of university autonomy, in the early 2000s, a European framework entirely replaced the long-lasting national framework mainly based on one long-cycle study programme (*corsi di laurea* lasting 4–6 years) and one degree (the *laurea*). Promoted by the Bologna Declaration, this framework introduced two cycles of study following the bachelor/master scheme leading to two degrees (the new *laurea* and the new *laurea specialistica*, later renamed as *laurea magistrale*). Only doctoral programmes – introduced in 1980 – and study programmes regulated by European directives (medicine, dentistry, pharmacy, veterinary) were left untouched in Italy. As a consequence, the reform gave a strong push towards a steeper vertical curricular differentiation within Italian higher education. In the year 2005/2006, few years after the reform, the Italian university student body reached its maximum expansion (1,823,700); it decreased slightly in the subsequent 5 years (−2.3%). In the year 2006, thanks to the reform, also the highest number of graduates was recorded (301,400). Graduates per year decreased in the following period (−4%). When the CAP survey was carried out, students enrolled in doctoral programmes were 38,300 while 10,400 earned their PhD that year. Net entry rate to higher education at that time was 55% while graduation rate (% of graduates on total population of the corresponding age) was 39.4%.

Governance and funding: In 1989, 40 years after the Constitution of the Italian Republic was approved and came into effect, a law translated the constitutional principle of "university autonomy" into practice defining five types of university autonomy: didactic, scientific, organisational, financial and bookkeeping. Accordingly, universities have written and approved their statutes and regulations. The rector has been considered *primus inter pares* to be elected by the university body including academics, students and staff. Universities have been ruled according to a dualistic governance based on the senate and the board. Teaching and recruitment have been primary responsibility of the f*acoltà* (schools) while research has been assigned to *dipartimenti* (departments). In 2010, parliament passed a new reform which is going to change deeply the structure of Italian universities. The reform aims at changing the institutional governance and at assigning to a single

organisational unit – namely, the department – both research, teaching and service functions. Further, the reform addresses the quality and the efficiency of the whole higher education system and academics' recruitment and status.

State universities in Italy are publicly funded, and financing is conveyed to them by means of three funds, the principal of which – currently amounting to more or less 7 billion euro – includes personnel expenditure. As public funding has been increasingly considered as linked to accountability and quality to evaluation, an evaluation system has been set up. It is organised into two levels assigning internal evaluation of universities to local committees and system evaluation to a national agency.

The academic profession: The Italian academic profession has always been strictly regulated. Academics were, and are, civil servants whose rights, duties and salaries are determined by law. Since 1980, a three-layered structure of the profession has been established. The professoriate consists of two positions, *professore ordinario* (full professor) and *professore associato* (associated professor), while a third position is that of *ricercatore* (researcher). These are all permanent or "tenured" positions differentiated according to scientific expertise and job tasks. Academics are mainly recruited by *concorso* (public competition). Since 1998, universities have directly managed recruitment procedures. Although norms and requirements to access the academic profession are still centrally determined, universities can plan their recruitments and recruit their academic staff. Academics, although remaining civil servants, are no more considered as employed centrally by the Ministry of University but as employees of their institution. Since it was first introduced in Italy in 1980, the doctoral degree has been considered a de facto requirement to access the profession. After having earned a doctoral degree, prospective academics enter a more or less long period of training characterised by fellowships, temporary appointments and volunteer service eventually leading to a *concorso* to enter the position of *ricercatore*. Very recently, the Italian parliament has approved a new reform which is going to change academics' recruitment and status. Among other things, Law n. 240/2010 dismisses the tenured position of *ricercatore* substituting it with temporary positions. It also introduces a two-step recruitment procedure for the professoriate based on an *abilitazione scientifica nazionale* – i.e. a national qualification – and competitions at the local level.

Recently, the academic body in Italy grew from 2005 to 2008 (+4.2%) reaching its maximum expansion (62,768) and then decreased by 8% within 2010. It had been estimated that when the CAP survey was carried out, alongside 62,000 "regular" or "tenured" academics, there were more or less 48,000 people supporting them either in teaching or research activities on the basis of various temporary arrangements.

Norway

The system: Among its public-accredited institutions in higher education, Norway has 7 universities, 9 specialised universities, 22 university colleges and 2 national colleges of art. With the exception of a relatively small private sector, all higher

education institutions are state funded. Approximately 86% of students are enrolled in public institutions. Apart from the Norwegian School of Management (BI), most private institutions are quite small. All institutions, first and foremost the universities, are responsible for conducting basic research and researcher training.

Study and graduation: In the wake of the Bologna process, Norway introduced the bachelor's and master's degree structure in 2003 which applies to the whole sector. The number of students spreads relatively evenly between universities and colleges, but the universities have the highest number at master's and PhD level as well as a much wider variety of study programmes. As regards PhD level, Norway has had a significant expansion in the recent decade – with 242 annual dissertations per million capita (NORBAL 2010), although it still lags behind Finland and Sweden in Nordic comparison.

Governance and funding: The state is an important actor in funding, regulating and steering the system. In line with international trends, however, more market-oriented modes of governance have been introduced in Norwegian higher education characterised by more autonomous governing bodies at the institutional level, relying upon strategic management methods and incentive-based funding. Institutions of higher education have achieved a relatively high degree of freedom in the choice of management models, e.g. whether to appoint or elect senior management. So far, most universities have preferred the latter model.

The academic profession: The academic profession in Norway is composed predominantly by two categories: full professors and associate professors. In addition, a teaching-oriented category – lecturers – is most prominent in the state college sector. Furthermore, there are various smaller categories, such as postdocs, researchers and teachers as well as adjunct positions. Universities and colleges have been criticised for the apparent heavy use of temporary staff.

As both universities and colleges are required to ensure quality through research-based teaching, the vast majority of academic staff is expected to conduct research. PhD candidates are employed and considered part of the academic staff. As a consequence, they have higher salaries and better working conditions than in other European countries.

The number of foreign academics in Norway is constantly on the rise. Their share among all academics at higher education institutions increased from 18% in 2001 to 25% in 2009.

Portugal

The system: The Humboldtian "model" was the basis for structuring the Portuguese higher education system throughout the twentieth century. For a long time, however, this was more a symbolic reference rather than a reality. In the late 1960s and early1970s, several attempts have been made to modernise higher education

in Portugal, but only after 1974 Democratic Revolution, the academic work organisation was institutionalised in tune with the Humboldtian logic with emphasis on the links between teaching and research. According to Decree-Law 448/79 enacted in 1979, academics were attributed the responsibility to serve teaching, research and service to society, and the academic careers were changed correspondingly. The Portuguese higher education became a binary system with the establishment of polytechnics in the beginning of the 1980s on the basis of Decree Law 185/81. While research and knowledge production was viewed to be the core functions of universities, polytechnics were expected to engage in teaching and knowledge application.

Governance: Around the year 2000, higher education in Portugal was exerted to similar political pressures for change as other countries. Market and managerial pressures grew, and an entrepreneurial model of governance emerged. Government moved towards steering from a distance. Higher education was expected to serve the "knowledge society" and "knowledge economy", and study programmes became more vocational in tune with the new "post-Fordist" market labour policy. In line with the EU Lisbon Declaration of 2000, national competitiveness in science and technology became a priority in Portuguese higher education policy.

A new Higher Education Act (Law 62/2007) recently imposed a controversial new governance and management model, which aims at substituting the collegial tradition by an entrepreneurial culture. The institutions of higher education in Portugal opt for either for being an institution in the public regime or to become a public foundation (regulated by the private law). Boards with strong representation of external "stakeholders", though with a majority of academics, replace the senate – the previous collegial bodies. Institutional autonomy is increased but now embedded into a market and entrepreneurial logic. Government delegates powers to higher education institutions but keeps the control or at least a dominant in structuring of the system, funding and admission to higher education. Surveys show that the majority of academics in Portugal oppose the new emphasis on *managerialism* and new public management, the strong steering by government, the new productivity culture and the governmental retreat from sufficient funding of higher education. This notwithstanding, most academics believe that the old collegial model has be substituted by a more rational models of fewer and smaller committees that are able to support flexibility and promptness in the academic, pedagogical and managerial decisions.

The academic profession: The bachelor's degree was the minimum entry level for academic positions both at Portuguese universities and polytechnics, but the master's degree has been the typical entry qualification for tenured positions at polytechnics and the doctoral degree for tenured positions at universities. According to the recent Decree-Law 207/2009, a doctoral degree is the entry qualification both for careers at universities and polytechnics, whereby permanent employment is granted only after 5 years of temporary employment. It is widely assumed that the introduction of the polytechnics has led to a fragmentation of academic work and a weakening of the academic profession.

Both at universities and polytechnics, a committee and eventually a scientific board assess the teaching quality and notably the research productivity in the university sectors, when decisions have to be made as regards promotion. A new academic credential – "Agregação" – has been introduced as entry qualification for full professor positions at universities and similarly for coordinate professor positions in the polytechnic sector. Academics of both universities and polytechnics in Portugal can be promoted to a tenured position after 5 years in the auxiliary professor position (university) or three for the adjunct professors at polytechnics. These requirements do not hold true for academics at polytechnics who come from the entrepreneurial world".

According to statistics for 2005, 7% of academics at universities in Portugal were full professors, 13% associate professors and 29% auxiliary professors, while the remaining half of positions were filled by assistants and others. At polytechnics, 6% were coordinating professors and 20% were adjunct professors, while 10% were assistants and 64% in other positions.

United Kingdom

The system: In a formal sense, higher education in the United Kingdom moved to a "unitary" system in 1992 following a 20+-year period of a "binary" divide between universities on the one hand and polytechnics and other colleges on the other. At the end of 1992, all the polytechnics were upgraded to universities, a transition that was eased by the requirements of equivalence between academic standards in universities and polytechnics which had been enforced through a national peer review accreditation system during the binary period.

However, the concept of a "unitary" higher education system in the UK requires a number of caveats. The first is geographic and political. In one sense, the UK has four higher education systems, one each for England, Wales, Northern Ireland and Scotland. While many things are in common, there are also important differences in tradition (first degrees in Scotland were traditionally of 4 years duration leading to a master's degree, in contrast to the 3-year bachelor's degree in England) and in current policies (most visibly at the moment in terms of funding methods with high student fees introduced in England). Another caveat about the UK's "unitary" system lies in the steep vertical differentiation of its institutions, reflecting both reputational and research productivity factors. The reputational factors are both academic (research publications and rankings) and social (e.g. the high proportions of privately educated students at the universities of Oxford and Cambridge). On the whole, reputation also reflects the age of the institution with the "ancients" of Oxford and Cambridge still towering over the nineteenth century "civics" and the various types of twentieth century foundations.

Study and graduation: Traditionally, the key qualification has been the bachelor's degree normally studied in England over a 3-year period. In Scotland, a 4-year master

programme has been the norm, and 4-year programmes have also been common in certain professional areas. Admission has been on the basis of performance in the advanced secondary school examinations and has typically been very competitive at the more elite institutions. Traditionally in the UK, students leave home to study rather than attend a local university, which is one of the things which has accentuated the reputational stratification of the system. In recent decades, however, there has been growth in the proportion of entrants of "mature" students, i.e. people who entered the labour market at the end of their schooling but who decide to enter higher education at a later stage, most typically somewhere between their mid-20s and their mid-30s. This has been accompanied by a growth in part-time courses which allow students to remain in employment while studying. Mature and part-time students are much more likely to live at home and attend a local institution. Postgraduate courses cover certificates and diplomas of various kinds, often linked to specific professional fields, as well as master's and doctoral degrees (which increasingly can also embrace professional or academic foci).

Governance: Though publicly funded, UK universities have typically enjoyed considerable autonomy from the state and have been the major locus of authority and decision-making (in contrast to the ministry, the faculties and the individual professors who can be more powerful in other jurisdictions). In recent years, however, that autonomy has been weakened, both by the introduction of more intrusive regulatory systems (funding methods, quality assurance regimes, performativity measures, etc.) and greater market-based competition. Business models of university leadership and management increasingly dominate with a cadre of full-time university "managers" replacing the traditional arrangements of academic leadership led by senior members of the professoriate.

The academic profession: Following the trends mentioned above, academic life in the United Kingdom is increasingly competitive and increasingly regulated, largely according to local institutional management systems. Institutions, however, do differ considerably in their cultures and practices, and, in many places, it is not so difficult for individual academics to retain their freedoms and autonomy. One of the other trends in recent decades has been the growth of multi- and interdisciplinary work (both teaching and research) and organisational forms which reflect this. In other words, the careers of many academics take them away from their discipline of origin, at least with regard to their organisational base. The traditional career structure remains with most academics initially employed on fixed-term contracts (often with a research focus) for a number of years before moving on to permanent academic posts (lectureships, senior lectureships, readers, professors) though the move from fixed-term to permanent positions is becoming increasingly difficult to make and can take many years for a lot of academics.