The Changing Academy – The Changing Academic Profession in International Comparative Perspective 16

Jesús F. Galaz-Fontes
Akira Arimoto
Ulrich Teichler
John Brennan *Editors*

Biographies and Careers throughout Academic Life

Springer

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Scope of the series

The landscape of higher education has in recent years undergone significant change. This has been particular the case for research training, academic life, employment, working conditions and entrepreneurial activities of universities around the globe. 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. It aims to address these changes from an international comparative perspective, focusing at both the higher education system level as well as the STEM fields of science, technology, engineering and mathematics in particular. It explores both the reasons for and the consequences of these changes.

The series 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 provides analyses on these matters drawing initially on available data-sets and qualitative research studies with special emphasis on the international studies of the Changing Academic Profession and the national surveys in STEM fields. Among the themes featured will be:

- Relevance of the academy's work
- Enrolment, graduation and the institutional setting of STEM
- Research, development and technology policies with regards to STEM
- Internationalization of the academy governance and management
- The new generation in the academic profession – the doctoral graduates

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Chapter 1
Biographies and Careers Throughout Academic Life: Introductory Comments

Jesús F. Galaz-Fontes, Akira Arimoto, Ulrich Teichler, and John Brennan

1.1 Why Study Academics' Biographies and Careers?

The increasing size, diversity and relevance of higher education at a global level signals quite clearly nowadays that the academic profession will also become more relevant and, therefore, that its consideration and study will gain, even if it is not always recognized, a critical importance for understanding, and hopefully help improve, the functions and tasks that characterize contemporary higher education (Teichler et al. 2013). As the nature of academic work and its contexts, both institutional and societal, vary considerably between and within higher education institutions, so do they attract, retain and promote individuals with a wide variety of personal and professional profiles.

Academics working in higher education institutions do not only reflect their institutional and more general country contexts, as they influence their institutions and society by way of the evolving nature of their teaching, research and service activities. As stated, academics' work doesn't take place in a vacuum, but is rather

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influenced, in a complex way, by academics' biographical background, professional trajectory, employment and working conditions, among other factors. So, given faculty's centrality to higher education (Bowen and Schuster 1986) it is only natural to consider, in addition to working conditions (Locke and Teichler 2007) and the institutional atmosphere (Locke et al. 2011) in which they carry out their activities, academics' personal background and characteristics, career trajectories, sense of identity/commitment and job satisfaction, as strategic for understanding the academic profession in general. All of these aspects constitute the central topics of this book.

While there are surely national differences, higher education, and with it the academic profession, is in a state of flux around the entire world in the context of both, global convergent and more local divergent processes. While convergent processes tend to be associated to global dynamics, mainly economic but also social, political and educational (Neubauer 2014), divergent and distinct processes are related to local conditions and the way they interact with global factors (Marginson and Rhoades 2002). Central components of these networks of relationships are, in relation to the academic profession, the political coordination of each country as a whole, its higher education system and, for sure, its economic dynamics.

During the last decades an increasing number of countries' higher education systems have grown and diversified (UNESCO 2004, 2008). Whether associated with efforts to improve social inclusion and, increase human capital and/or increase its economic competitiveness, different countries have engaged in significant efforts to increase access to higher education, make students' learning more relevant to the world of work and, more frequently so, induce their higher education systems to increase their participation in their research, technology and innovation systems (Arimoto 2005; Meek et al. 2009) that are increasingly central to a 'knowledge society' and a 'knowledge economy.' Pressures for attending such factors have come, additionally, from a global tendency for developing a one-fits-all ranking scheme that could help answer the question of which higher education institutions can be considered as the best on a world-wide basis. While there are critical perspectives on such efforts (e.g., Ordorika and Lloyd 2013), the fact remains that the ranking of their higher education institutions has become, for many countries, a national issue with large implications for those institutions (Shin et al. 2011; Tierney 2009).

While the "massification" of higher education is usually related to the growth and diversification of the student body (Trow 2001) and, on the other hand, the "capitalization" of academe is seen as a crucial factor in the segmentation of academic work (Slaughter and Rhoades 2004), less attention has been given to parallel enlargements, in higher education institutions, in the academic bodies that staff them and must confront, in a very direct way, the general challenge of being more relevant (Kogan and Teichler 2007). At a general level it is known that academics, particularly in developed countries, come more frequently from society's upper strata, and that in recent times more and more women have embraced this professional path (Schuster and Finkelstein 2006), but there are many more questions and issues, particularly from the standpoint of a comparative perspective, that need to be

addressed if one is to have a general profile of contemporary academics and the influence of it on academic work and the general functioning of higher education. Who are the academics on whose work the functioning of current higher education institutions is based? Where do they come from? What is their professional background? What work experience do they have? How did they become academics? What are their levels of commitment to their work? How satisfied are they with their careers and with their work? Are there national, institutional, and/or disciplinary differences in the answers to these questions? Is there, at a global level, a new academic generation as Finkelstein et al. (1998) has argued that it is the case for the academic profession in the United States?

1.2 Conceptual Framework

The description of the profile of a profession is usually understood as something similar to taking a picture of those involved in it. It is expected, then, that an effort to illuminate academics' personal characteristics, career trajectories, sense of identity/commitment and job satisfaction, will generate a more or less precise description of the state in which all these characteristics were found to be when the pertinent data was collected. On the other hand, if we can manage to compare two points in time, whether directly or indirectly, then we could see change, and not only a static picture.

As Teichler et al. (2013) have described, 'The Changing Academic Profession' (CAP) project did precisely that; it took a picture of the status of academics in a comparative perspective during 2007–2008. More than 100 scholars from 19 countries collaborated to put together, based upon a general perspective that the academic profession is being impacted by a public expectation for academic work to be more relevant, by its increasing internationalization and by a stronger managerial presence, a general survey methodology and a common questionnaire that included items on several issues that would help build a contemporary portrait of academics (see also Bentley et al. 2013; Huang et al. 2015; Locke et al. 2011; Shin et al. 2014).

Having shared survey results in several previous international meetings (Hiroshima, Turin, Buenos Aires, Melbourne and other places), the CAP team met in 2010 in Mexico City. The topics addressed at this international conference were the 'Personal characteristics, career trajectories, sense of identity/commitment and job satisfaction of academics,' and the papers presented at that time constitute the basis of the chapters that make up the current book.

When convening the Mexico City 2010 CAP International Conference, participants were provided with the following guidelines to help organize the analysis and presentation of the profile of contemporary academics.

1. Personal characteristics. In general, personal characteristics are those usually associated to the term sociodemographics: gender, age, social background (educational attainment of parents, etc.), marital status, diverse family issues (working

status of partner, children, etc.), ethnicity and citizenship are a set of more or less visible variables that can be used to profile a profession.
2. Career trajectories. In addition to knowing who academics are, in order to understand the dynamics of contemporary academe it is convenient to know how is it the such academics have come to be such in a specific country and in a particular higher education institution. Among the variables considered under this global category (career trajectory) are the following: highest degree obtained, institution in which it was obtained, temporality in the obtention of all the degrees obtained, time and conditions of entrance into the profession, work experience both within and outside academia, rank and contract duration.
3. Sense of Identity/Commitment. Both a reflection of their background, personal traits, the institution in which their work and the larger context in which they function, academics develop a sense of identity in terms of their academic inclinations, as well as certain attitudes and values regarding their disciplines and work, higher education and its role in society. They also, in a complex way and related to all of the above factors, manifest different levels of commitment to academe and to their institutions.
4. Job Satisfaction. Closely related to the immediate previous factors, global job satisfaction is assumed to reflect a kind of summary of the level with which the most salient factors, including in a principal manner the academic him(her)self, fit together. The general expectation is that a highly motivated academic personnel, of which a global high job satisfaction is surely a part, will help bring in good things for those higher education institutions in which those academics work.

Having served its purpose of generating a diversity of reflections for the 2010 Mexico City International Conference, the above structured comments also guided the writing of the concluding considerations of the book.

1.3 Plan of the Book

As the title of the current volume in 'The Changing Academic Profession in International Comparative Perspective' series (e.g., Teichler et al. 2013) reads, 'Biographies and careers throughout academic life,' the chapters that make it up speak on the status and its changing dynamics, of such aspects in one or several countries.

The chapters that constitute the book are organized, after this brief introduction and before a concluding chapter, in two parts. The first part, itself divided in two sections, deals with country reports on one or more of the general factors which constitute the topics of the book. They are largely based on the presentation and discussion of data collected through the Changing Academic Profession international survey carried out in 2007–2008 (Teichler et al. 2013). In the first section of Part I each of the chapters correspond to countries with an "emergent" higher

education system. So, Chaps. 2 through 6 pertain to Argentina (Chap. 2: Identifying features and working conditions of Argentine: A comparative study of two disciplinary communities), Brazil (Chap. 3: Brazilian higher education: Converging trajectory patterns in a diverse institutional environment), Malaysia (Chap. 4: Personal characteristics, career trajectory and job satisfaction of academics in Malaysia), Mexico (Chap. 5: The Mexican academic profession between centuries: Who are the actors?), and South Africa (Chap. 6: The South African academic profession: Personal characteristics, career trajectories, identities and sense of commitment). The authors of each chapter have taken care for presenting the main traits of the higher education system of the corresponding country and, in general, present us with potential ways in which that context can help us explain academics' profile and how it has changed.

One caveat is in order at this point. Although authors of different chapters, and therefore countries, use at times similar terms (tenure, full-time contract, highest degree, etc.), it is convenient to keep in mind that country and institutional differences can make such terms have slightly different meanings. Understanding the context in which a term is used is, therefore, crucial in order to apprehend its meaning. This is certainly one of the perennial challenges of doing comparative research (Epstein 1998).

In the second section of Part I the chapters included correspond to countries with "mature" higher education systems. So, Chaps. 7 through 11 pertain to Canada (Chap. 7: The changing academic profession in Canada: Personal characteristics, career trajectories, sense of identity/commitment and job satisfaction), Finland (Chap. 8: In and out of the laboratory: Herzberg, job satisfaction and the attitudes of Finnish university academics), The Netherlands (Chap. 9: A portrait of the changing academic profession in The Netherlands), Portugal (Chap. 10: Academic professional characteristics and trajectories: The Portuguese case), and South Korea (Chap. 11: Academic inbreeding of Korean professors: Academic training, networks, and their performance). While some country chapters deal with the topics of the book in a more general and descriptive way, Finland and South Korea focus their analysis in one or more particular topics that the authors consider highly important in their case. So, the Finland chapter studies job satisfaction and other variables in relation to different types of disciplines, while the South Korea chapter analyzes academic inbreeding, a situation that they consider might need to change in the future.

While Part I of the book dealt with analysis of the above mentioned topics in relation to academics of one country, in Part II Chaps. 12, 13, 14, 15 and 16 present different issues addressed in a comparative approach. So, Chap. 12 details an international comparison of Argentine academics' identity. In Chap. 13 a comparison is made between Chinese and United States academics on whether personal characteristics influence productivity. In Chap. 14 German academics are compared to academics from other advanced countries in relation to their career and self-understanding. On the other hand, Chap. 15 presents a comparison of career trajectories and identity/commitment of Japanese academics in the context of the rest of the countries that participated in the CAP survey. Finally, in Chap. 16 a

comparative analysis of career advancement and gender is presented for all the 19 countries that participated in the international survey.

All together the material put together in this book speak of, as the concluding Chap. 17 argues, several trends (gender and highest degree are probably the most salient ones) that are common to all academics working in the countries included in the CAP survey. Notwithstanding such commonalities, differences in the structure and dynamics of all the higher education systems considered, as well as of the countries in which systems are in place, make it natural to find considerable variation in many of the particular issues considered. It is expected that the reader will find this mosaic of findings and interpretations both informative and stimulating.

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Part I
Emerging Higher Education Systems

Chapter 2
Identity Features and Working Conditions of Argentine Academics: A Comparative Study of Two Disciplinary Communities

Mercedes Leal, Sergio Robin, and María A. Maidana

2.1 The Argentine Higher Education System

The Argentine academic profession shows certain characteristics that could be understood regarding the political projects of each socio- historical context and the dynamics proper to the expansion of the university system. Thus, a brief description of such system is necessary in order to understand the features of the current Argentine academic profession.

It could be noted that within the Latin American context, the Argentine university was modern in advance (Krotsch 2001) and that the 1918 Cordoba University Reform[1] acted as a sort of mirror: the university became aware of itself as an institution and of its needs of autonomy from the State. In such process the policies and perspectives manifested according to the different times, namely, the mid-century democratic principles along with the rising middle classes which claimed for greater education. Also, projects of regional and human resources development fostered by the universities which were later far outweighed by the old professional model. In this process, the initial trend of differentiation and modernization of the Argentine university finally turned to the mere quantitative expansion of the system in the framework of a professional model of university.

[1] The 1918 Reform was an outstanding student movement carried out in the Argentine universities that spreaded to Latin America. It aimed at the renewal of contents, new teaching positions for the young generations and the university co- government consisting of teachers, graduates and students. The main concern of the reformists was the scientific backwardness and the archaic teaching. The lack of re-structuring of the teachers positions predicted the maintenance of out of date contents regarding the advancements of the time as well as the maintenance of the theoretic encyclopedic bias of teaching and a rigid disciplinary organization.

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In contrast to other Latin American universities, the Argentine university grew quantitatively but it neither developed nor modernized the academic structures on which still lies the strong prestige of the model of the larger universities -Buenos Aires, Córdoba, La Plata- with their own interests and traditions, accompanied by the reluctance towards innovation and change in the basis of the system. The institutional expansion was enhanced from 1950 by the increasing demand for higher education as a result of urbanization and social changes. This fact promoted changes in the institution profile such as feminization of enrollment, greater social diversity, academic profession development, greater promotion to research and so on.

In a kind of rising curve considering number of universities, academics and students, and in spite of the back and forth moving due to cultural conservatism and the dictatorships between 1966 and 1983, the Argentine system added new institutions to the seven public universities already existent in 1955. Nowadays, the Higher Education System consists of 47 national public universities, 46 private universities, 7 state university institutes, 12 private university institutes, 1 provincial university and 1 foreign university.

2.1.1 Characteristics of Access to and Promotion in the Academic Career

The prevailing type of organization of the academic work in Argentinean universities, especially in the most traditional ones, is the chair (or 'cátedra') in which the academic career is made up of a number of positions organized hierarchically, the main categories being those of teaching assistant and professor. Supposedly, teachers in the first category are in charge of coordinating practice work groups whose members also attend the lectures given by professors. Other institutions are organised following the departmental structure in an attempt to move away from the rigidity and verticality of the 'catedra.' Nevertheless, the different levels of the teaching posts do not vary much and in most cases keep a vertical work organization.

A teaching position at university is obtained through the mechanism of 'concurso de antecedentes y oposición' (a selection process involving a competitive examination of background, a lecture, and an interview assessed by a board of judges) To that purpose, the institution publicizes the availability of a job position and the selection is made by a board of peers (holding a higher position to the one offered) who has the task of assessing the candidates' *curriculum vitae*, interviewing them and evaluating the class given, the topic of which has been previously chosen by lot from the contents of the subject syllabus. In the case of the position of professors, the job stability provided by the 'concurso' will last 5–7 years, after this period a new public contest takes place. In the case of the teaching assistants the period of job stability is of 3 years. During this time the professor cannot be removed from his position – only under extreme circumstances- and he acquires 'university citizenship'; that implies that he can take part in the institutional governance system

by choosing or by being chosen to perform various roles. Thus, the complexity in the mechanism of 'concurso' ensures from a twofold implication regarding academic policy and institutional incidence.[2]

2.1.2 The Reform Policies of 1990

The reform policies of the 1990s stressed adverse data of the public university institutions: lack of internal efficiency and of an evaluation system, inadequate profile of the graduates considering productive regional needs, high level of drop out, drawbacks in the financing system, and so on. Thus, it was settled a new criterion pointing to the horizontal and vertical differentiation of the institutions in which assessment, market demands and regulation and control mechanisms assumed greater importance.

In this new reality of the university, a greater operative capacity of the government through the introduction of the Secretaría de Políticas Universitarias (Secretary of University Policies) is emphasized, a fact implying greater resources, greater possibilities to decide courses of action dealing with university policy and the noticeable leadership of the Secretary to generate and execute reforms in a democratic context as well. The strong hegemony of the government of the time (1993) was combined with the actions taken by the World Bank whose guidelines regarding educational policy prevailed over other perspectives generated in the basis of the system (Krotsch 2001).

The university policy of that time tended to apply a priority agenda to optimize spending and to obtain additional resources through grade fees[3] and the sale of services as a way to cope with the financial crisis. Within this framework, the government tended to start external control through the Secretary of University Policies and the *Comisión Nacional de Acreditación y Evaluación Universitarias* (CONEAU). This was carried out in the context of the *Ley de Educación Superior* (LES) (Higher Education Act), an instrument that not only made the universities to face the government but also promoted confrontations between the academics themselves as it thoroughly represented the neoliberal university model. Simultaneously, consensus was also sought in the people with respect to the needs of change and intervention of certain university practices by means of the accountability principle, which in turn achieved a core role in university policy.

[2] Such complexity sheds light on many current problems in the governance of the biggest and most traditional universities. In many cases the percentage of teachers assessed in due time through the mechanism of *concurso* is low, not only because of the complexity of the mechanism itself but also due to political decisions that delay or move up the *concursos* what has the potential to determine the political composition of university government.

[3] The grade fees were not put into practice due to the opposition of students and teachers movements.

The process aforementioned was leading to a new configuration of the LES, characterized by the interplay of sector policies, several alliances and the state intervention in the system; also, by a continuous negotiation, not always successful and often full of difficulties, between the State – interested in restricting the resistance to its policy- and university sectors deeply concerned about what they perceived as an increasing loss of autonomy.

The 1990s university policies legitimated the evaluation and accreditation processes through an agenda of evaluation accompanied by the loss of public confidence towards the university. In that situation, public confidence had to be replaced by new forms of accountability of the State institutions (Krotsch et al. 2007).

The analysis of the recent decade points out that the economical crisis of 2001 was followed by a period of both complex and paradoxical changes in the university system. Even though in the last years the governmental policies tended to leave the neoliberal bias in different aspects of the State, such effort did not affect all the dimensions of higher education in the same way. The sector policies combined a strong recovery of investment, creation of numerous universities for social sectors traditionally excluded from the system and reappraisal of the public and social nature of the university, with the unaltered validity of the 1994 Act (LES), which strongly promotes the subordination of guidelines regarding higher education and production of knowledge to the demands of the market. Likewise, the government reluctance to discuss the external evaluation scheme designed following the World Bank model is also emphasized.

2.2 Public Policy and the Academic Profession in Argentina

Studies on the influence of public policies in the academic profession have become relevant during the last decades in so far they try to account for the way in which significant changes verified in the usage of power and administration of higher education institutions are changing the configuration of the academic profession (Altbach 2000, 2004; Teichler 2006).

From this point of view, certain context and public policies that were progressively configuring the Argentine academic profession could be recognized.

Such profession inherits from the 1918 Reform process the teaching, research and services activities as constituent parts of the academic work, even though such activities did not show the same progress in different academic communities. This is the case of research which developed in academic reduced circles, both in number as in knowledge areas. In contrast, the teaching activity, configured under the principle of 'academic freedom', could maintain a strong presence, prestige and capacity to provide the Argentine academics with a certain identity.

The strong process of expansion of higher education in the 1960s was characterized by changes of the curricula and the prestige of teachers and researchers as well as by the implementation of a new competitive method of access to the appointments, which produced a generational renewal of the professoriate. The increase of

full time positions fostered research activities meant to scientific and intellectual creation. However, this integrated activity manifested itself more noticeably in some disciplines with certain research tradition, mainly in the basic sciences, either the hard or the soft ones.

The subsequent development of the Argentine academic staff took place along with the growth of enrollment, through teachers whose tasks were restricted to the teaching activity mainly. The return of democracy in the 1980s meant the duplication of the number of university teachers and a greater percentage of part-time teachers, a fact that permitted to deal with the increasing student demand with fewer resources. The development under these conditions was especially seen in the social sciences, one of the areas of greater demand.

In Argentina, the intra and inter- institutional heterogeneity, the successive institutional ruptures and interventions of the political power in university life as well as the un-planned increase of the teachers staff as a result of the enrollment increase, appear as the main features of the academic profession, which had a late formation just by the mid of the twentieth century.

Thus, the university reforms of the 1990s faced an academic profession mainly based on the teaching activity carried out mostly by assistants and professors with scarce tradition on academic work, without postgrade studies, coming from other working contexts and who found in university teaching a sort of complement to their incomes (Marquina 2007). In contrast, a minority of academics, especially from the fields of the exact and natural sciences, counted with a well rooted and sustained activity on research. This situation differed from the demands of the new university model based on productivity within a framework of adjustment policies, spending rationalization and a strong questioning of the traditional university and the quality of academic work.

These policies included some measures that modified the work of the academics, their socialization mechanisms and their practices, resulting in an academic 'type' who was demanded a high level of postgrade formation and the development of teaching and research tasks. In this context, academic activity started to be evaluated considering productivity on research and through different incentives and regulations that turned into a model of academic work that so far was only limited to some specific disciplines.

Among those policies, the introduction in 1993 of the *Programa Nacional de Incentivos a los Docentes-Investigadores* (National Teacher – Researcher Incentive Program) is emphasized. Such program was designed to promote an integral approach of the academic career, to increase research at the university and to enhance in academics a greater involvement with the university activity.

Researches on the effects of the reform policies in academic work have shown that such policies started a trend of strong governmental intervention in university policies based on systems of reward and punishment -either economical or symbolical- to gain academics' acceptance (Leal 2006). Researches also reveal different impacts of the incentive program according to institutions, disciplinary fields, teaching positions, and so on (Araujo 2003; Prego and Prati 2007; Leal 2006). These empirical studies also show that some scientific communities – mainly those with longer

tradition in research- were better qualified to face the changes promoted by the new policy since the programs of performance assessment (a research rank system, project qualification, etc.), were based on the models of scientific production of the so-called hard sciences (Leal 2001, 2006).

2.3 Conceptual and Methodological Principles

2.3.1 Conceptual Approach

As this report carries out a comparative analysis of two large disciplinary areas which are paradigmatic to the Argentine university, some concepts should be stated beforehand.

Becher (2001) explains that disciplinary fields present clearly distinguishable and reasonably stable features as well significant differences between them. Such divergences are related to their constituent matrices according to their subject of study, the academic traditions, the dominant scientific paradigms and to the ways of academic work organization and of scientific knowledge production. Though the areas gather a set of disciplines, the disciplines present certain similarities which place them in one field or another. These fields are named on the basis of the features that make them more distinguishable according to the authors' viewpoint: hard and soft sciences, restricted and non-restricted sciences, exact and social sciences, mature sciences and pre-paradigmatic sciences, among other taxonomies.

The definitions of 'discipline' were also influenced by one or the various features the authors privileged. Becher (1993, 2001) explains that King and Brownell (1966) pose a comprehensive representation of discipline as a 'communication network, a tradition, a particular set of values and beliefs, a domain, a research modality and a conceptual structure.' Instead, other authors as Toulmin (1972) and Whitley (1976) carry out a narrower characterization of discipline. The former does so according to the set of fundamental concepts, methods and objectives of each field whereas the latter takes into account the social behavior of academics as 'organized social groups.'

Beyond the significance of these contributions, Becher recognizes that most studies on the subject (Lodahl and Gordon 1972; Jacobsen 1981), stress the close relation between the structure of knowledge in the different fields and the social behavior of the communities involved. That is, the attitudes, activities and cognitive styles of the scientific communities representing a certain discipline are closely linked to the structures of the disciplinary fields.

It is worth mentioning this definition does not deny the disciplines' historical and geographical variations explaining what Becher (2001) calls 'their changing nature', neither does it refuse that in spite of its mutable nature, each discipline shows a 'recognizable continuity,' allowing that the changes a discipline may undergo through time rarely become so significant to take away any resemblance. According to

these studies, disciplines have recognizable identities and particular cultural attributes manifested in the individual 'sense of identity/commitment to their field. Commitment is manifested through common elements such as objects, languages, idols and also beliefs, principles, rules of conduct and common traditions. These conceptualizations lead us to assume that disciplinary diversity is one of the main features of the academic profession.

Grediaga-Kuri (2000) following Piaget, points out that even though the frontiers among different fields of knowledge are recognizable, it would not be analytically appropriate to set 'rigid' limits among the great fields of knowledge nor within the disciplines making them up. According to Piaget (1982), it could not be said there are 'radical' differences in the process of knowledge of the various disciplinary fields. Therefore, differences would lie in what Piaget calls the level of internal epistemology which consists of the theoretical-methodological evolution proper to each discipline. Similarities could be found in the level of general epistemology represented by the process of subject and object interaction in the production of knowledge and in the fulfillment of the requirements to be part of scientific knowledge.

Now, this epistemological discussion is even more complex if the disciplinary fields are analyzed in the academic settings of the 'organization of the professional life' (institution, college, department) and in the particular contexts of the 'policies.' To Clark (1987, 1992), scholars -as a professional group-, when appointed by a higher education organization, engage in labor commitments with their place of work while at the same time commit themselves to the discipline practiced. The specific nature of the academic profession compared to other professions is derived from this double engagement and also the assumption that certain tension between the discipline and the organization demands might be manifested. Besides, Grediaga-Kuri (2000), when trying to understand the complexity of academic profession, focuses on the social relationships that take place in academic life as a 'way of social interaction.' To explain the diversity of the academic profession a significant role is attributed to the conditions and to the differences of goals among the organizations where academics work as well as to the different fields of knowledge they are engaged in. However, these contexts have not been studied in depth as social interaction settings that would be shaping academic trajectories according to the academics' commitment.

2.3.2 Methodology

From the methodological point of view the analyses presented result from the data obtained from the national survey studying the Argentine academic profession within the framework of the *Red Internacional de Estudio sobre la Profesión Académica* (Changing Academic Profession). In the Argentine case, a sample of Argentine academics was obtained following the guidelines provided by the international team in charge of the methodology and coordinated by Ulrich Teichler.

The methodology made use of a random minimum sample that had to be of 800 cases so that a multivariate analysis with confidence intervals could be carried out. Likewise, the international coordination decided that the random sample layout had to take into account the design effect. Thus, a response out of three was to be expected, increasing to 2400 cases the random sample number. For the Argentine higher education system the information was provided by the *Sistema de Información Universitaria*, (University Information System) which helped to draw the national random sample of 2400 academics out of 119,000.

The procedure implemented consisted of a self-administered questionnaire carried out on line by 826 Argentine academics, between 2007 and 2008.

The questionnaire is divided into 6 sections with 58 questions dealing with the following subject areas:

A. Trajectory and job position: general information on professional trajectory, features of the institution, labor links to the institution, other occupations, etc.
B. General working activity: academic work characteristics, resources and working conditions, interests and satisfaction regarding work.
C. Teaching: teaching activities, time use, institutional requirements and opinion on the institution.
D. Research: research activities, academic production, conditions and financing.
E. Management: opinion on management institutional practices, the players' influence, evaluation.
F. Background Information: personal information, family of origin and current family, family influence on work, geographic mobility and language used at work.

The questions deal with the topics:

– Description of socio-demographic indicators.
– Description of professional development and working trajectories.
– Qualitative and quantitative institutional requirements regulating the activity (credentials, workload, etc).
– Time changes of the working conditions.
– The players' perception on their personal situation, working conditions and academic work in general.

It is pointed out that this research work studies the data of the 2010 Argentine weighted sample. The sampling consists of 780 academics that responded the variable selected for the comparative study of the disciplinary fields: 'higher degree obtained.' 46 surveys that missed answering the variable were not taken into account.

Tony Becher's taxonomy of science was adopted to classify the disciplinary areas.

– Soft sciences (368 respondents):

Business and administration, economics (40)
Teacher training and education science (63)

Humanities and arts (129)
Social and behavioral sciences (116)
Law (20)

– Hard sciences (412 respondents)

Physical sciences, mathematics, computer sciences (124)
Engineering, manufacturing and construction, architecture (135)
Agriculture (74)
Medical sciences, health related sciences, social services (79)

– Total: 780 surveys.

The objectives of the study were the following.

– To analyze some personal characteristics of Argentine academics: gender, educational level of the family of origin; professional trajectories regarding working years in different professional settings and the number and features of the institutions at which they worked (state and private ones, whether academic or not).
– To learn about the academics' perceptions of the working conditions, their satisfaction levels with the current job and the significance they attribute to their disciplinary and institutional referents.

2.4 Development

2.4.1 Who Are the Academics under Study?

Table 2.1 shows the academic staff differs according to gender in the two fields considered, namely, the percentage of men in the hard sciences is higher (50 %) than in the soft sciences (32 %). This ratio changes with academic women: the percentage is higher (68 %) in the soft sciences than in the hard ones (50 %).

These data would be stressing long accepted assumptions of the predominance of men in the field of the hard sciences and of women in the soft sciences. However, it is also seen the noticeable increase of the number of women in settings in which they were a minority, as in the field of the hard sciences, which would be denoting a certain feminization of the academic profession (Fernández-Lamarra 2003).

Table 2.1 Gender of Argentine academics

Gender	Soft sciences (n, %)	Hard sciences (n, %)
Male	119 (32 %)	205 (50 %)
Female	248 (68 %)	207 (50 %)
Total	367 (100 %)	412 (100 %)

Source: CAP Survey 2007/2008
Question: F1 Gender

Table 2.2 Year of birth of Argentine academics

Field	Average year of birth	Number of surveys
Soft sciences	1960	350
Hard sciences	1960	385

Source: CAP Survey 2007/2008
Question: F2 Year of birth

Table 2.3 Current appointment rank of Argentine academics

Rank	Soft sciences (n, %)	Hard sciences (n, %)
Full (titular)	112 (58 %)	82 (42 %)
Associate	18 (32 %)	39 (68 %)
Adjunct	105 (46 %)	122 (54 %)
Head of practical works	63 (36 %)	110 (64 %)
1st assistant	60 (59 %)	41 (41 %)
Others	10 (36 %)	18 (64 %)
Total	368 (47 %)	412 (53 %)

Source: CAP Survey 2007/2008
Question: A11: Current Appointment Rank

It is seen in Table 2.2 that the respondents show an average of 50 years of age in both academic groups. This could be interpreted as an age group that developed its activity in a context of change from a traditionally teacher-centered model to one that has been trying to consolidate since the Argentine University Reform of the 1990s, with its strong stress on research.

Thus, it would be interesting to understand how each group faces the changes, mainly taking into account the assumption that the model of knowledge production that tended to become generalized in the Argentine university since such decade, corresponds to the model of scientific production proper to the hard sciences.

Some differences are found between soft sciences and hard sciences when considering ranks. The first to be noticed (Table 2.3) is the high percentage of associate teachers (68 % professors) of the hard sciences compared to the (32 %) of the soft sciences. The second difference lies in the 64 % of teaching assistants (JTP) in the hard sciences contrasting to the 36 % of the soft sciences. Some differences are also shown in other ranks but they are not so noticeable.

Table 2.4 shows there is no significant difference in the parents' level of education in the academic communities studied.

It can also be inferred from the data that the academics of the two areas considered seem to come from homes with a high level of education since more than 30 % of the parents -in average- accessed to university or tertiary studies, either complete or incomplete. This information is relevant when considering that these parents achieved such levels of education in historical contexts in which the educational possibilities were much more restricted than today.

Table 2.4 Education level of Argentine academics' parents

	Father		Mother	
Education level	Soft sciences (n, %)	Hard sciences (n, %)	Soft sciences (n, %)	Hard sciences (n, %)s
University or tertiary (complete or incomplete)	127 (36 %)	128 (33 %)	100 (28 %)	96 (25 %)
Medium (secondary complete or incomplete)	109 (31 %)	133 (34 %)	117 (33 %)	132 (34 %)
Low (primary complete or incomplete)	111 (32 %)	123 (32 %)	133 (38 %)	158 (41 %)
No formal educación	4 (1 %)	3 (1 %)	1 (0 %)	2 (1 %)
No applicable	0 (0 %)	1 (0 %)	0 (0 %)	0 (0 %)
Total	351 (100 %)	388 (100 %)	351 (100 %)	388 (100 %)

Source: CAP Survey 2007/2008
Question: F9 Education level of the parents

As a contrast, the very low percentages of fathers and mothers with no formal education at all are noticeable (1 %). This would be stressing the idea that accessed to the academic profession those whose parents have effectively enrolled in the system with a certain success.

The data also show that the academics' mothers from both fields seem to have had greater difficulties to achieve higher levels of study. This could be explained by gender educational inequalities prevailing in the Argentine system.

Another interpretation to be pointed out is the parents' level of study regarding academic traditions. Thus, the noticeable percentage of parents that did not get to the higher level (more than 60 % of the fathers and 70 % of the mothers), as well as the percentage of those that did not access to secondary studies (more than 30 % of the fathers and about 40 % of the mothers), show we are dealing with a heterogeneous population which in most cases achieved the condition of academic, without coming from university family traditions. That is, this fact could be interpreted as a confirmation of the democratic trend of the Argentine system of education proper to the period of scholarship of the group under study.

2.4.2 Which Were their Academic Trajectories?

With respect to career trajectories we could infer from the data (Table 2.5) that academics from both areas, with full time and part time appointments, seem to develop their working activities 'at the university institutions.' Besides, the years of work at university institutions and in independent settings – as full timers or part timers- show significant differences between the academics of the soft sciences and those of the hard sciences. The latter worked more years as full time teachers at university institutions (12.1) than the former (7.6). Also, academics from the soft

Table 2.5 Different working settings of Argentine academics

Years of work in these settings since your first degree		Full time		Part time	
		Soft sciences	Hard sciences	Soft sciences	Hard sciences
University institutions	Average	7.6	12.1	12.7	10.1
	Minimum	0	0	0	0
	Maximum	45	46	43	49
Outside university,	Average	2.0	1.7	5.2	5.0
Independent job	Minimum	0	0	0	0
	Maximum	24	34	41	46

Source: CAP Survey 2007/2008
Question: A 4 Different working settings

Table 2.6 Argentine academics' average rating of importance of specified referents or affiliations

Referents or affiliations	Field	
	Soft sciences	Hard sciences
Your discipline or academic field	1.19	1.37
Your department, centre, faculty, etc.	1.66	1.68
Your institution	1.55	1.54

Source: CAP Survey 2007/2008
Question B4: Please indicate the degree to which each of the following affiliations is important to you (on a scale of responses from 1 = Very important to 5 = Not important at all)

sciences worked more years as part timers (12.7 years) than the ones of the hard sciences (10.1 years).

In the case of 'independent work' it is seen full time academics of both areas worked very few years (2) in such settings, a fact which would emphasize the university as the predominant working choice. Instead, part time academics worked more years, 5.2 in the soft sciences and 5.0 in the hard sciences, without showing any significant differences.

2.4.3 What Identity Features Do They Show?

The average grades -in all cases close to the maximum- are very similar in both disciplinary fields. This would be showing that all referents (discipline, department and institution) are significant as organizing and constituent agents of these academics' professional identity and work. However, taking into account all the average grades, a little tilt towards the discipline is still seen (Table 2.6).

The academics' labor links (Table 2.7) show percentage differences regarding full-time and part- time appointments. Full-time positions present higher averages

Table 2.7 Employment situation of Argentine academics in current academic year

Employment situation	Soft sciences (n, %)	Hard sciences (n, %)
Full time	140 (38 %)	252 (61 %)
Part time	204 (55 %)	137 (33 %)
Part time with payment according to task	5 (1 %)	4 (1 %)
Other	19 (5 %)	19 (5 %)
Total	368 (100)	412 (100 %)

Source: CAP Survey 2007/2008
Question A7: How is your employment situation in the current academic year at your higher education institution/research institute?

Table 2.8 Contract duration of Argentine academics

Contract duration	Soft sciences (n, %)	Hard sciences (n, %)
Permanent (with no type of evaluation since appointment)	28 (8 %)	18 (4 %)
Continuous renewal (without specified duration, no warranty of permanence)	92 (25 %)	76 (18 %)
Time specified (with possibility of permanence or continuity)	234 (64 %)	306 (74 %)
Time specified (without possibility of permanence or continuity)	10 (3 %)	11 (3 %)
Other	3 (1 %)	1 (0 %)
Total	367 (100 %)	412 (100 %)

Source: CAP Survey 2007/2008
Question A 12: *Contract Duration*

in the hard sciences (61 %) than in the soft sciences (38 %). Conversely, in the case of part-time positions, values are higher in the soft (55 %) than in the hard sciences (33 %).

If these data are related to the years of work at university institutions and/or outside the university (Table 2.5), we again find out the averages are higher in the case of full-time academics of the hard sciences since they state more years of work at university institutions (12.2 years) than academics coming from the soft sciences (7.6 years). Thus, a deeper analysis of the greater possibilities that soft science academics have to carry out their activity simultaneously in levels other than the higher level would be required, a chance apparently not so evident for academics of the hard sciences (Table 2.8).

The Fisher's exact test shows differences between the groups (Fisher's exact = 0.024).

The option that prevails in both fields is 'fixed time contract' (with perspectives of permanence or continuity), with 64 % for the soft and 74 % for the hard sciences.

These percentages could be closely related to the processes of admission, evaluation and renewal of appointments which in the Argentine university are carried out through open and periodic evaluations ('concursos'). It is worth mentioning that

though these academic appointments are not of a permanent nature, the system of evaluations through a peers jury favors an endogamic dynamics which in most cases acts as a constraint for new applicants, thus providing a certain warranty of permanence for those who are already members of the institution. Besides, this same system could be used for the academics' 'exclusion-expelling' due to several reasons, from personal conflicts and political disagreements to academic causes. Another characteristic of these situations is the significant number of teachers working as 'interim' teachers. Though their appointments are periodically renewed, these academics are deprived of some of the rights the 'university citizenship' provides. Thus their labor links to the institution become precarious and unstable and at the mercy of the political dynamics of the university.

2.4.4 What Is the Academics' Satisfaction Level with their Work?

The information provided by Table 2.9 shows that both academic groups present similar levels of satisfaction with academic work.

This analysis may be deepened by considering data provided by B5 (Table 2.10). Indeed, the academics' opinions regarding their job are mostly positive. The nearly

Table 2.9 Level of satisfaction of Argentine academics with their academic work

Field	Average on a 1 (very high) to 5 (very low) scale of level of satisfaction with current academic work
Soft sciences	2.27
Hard sciences	2.27

Source: CAP Survey 2007/2008
Question: B6 How would you rate your overall satisfaction with your current job (on a scale of responses from 1 = Very high to 5 = Very low)

Table 2.10 Argentine academics' agreement/disagreement with statements related to academic work

State to what extent you agree or disagree with each of the following statements about academic work.	Average on a 1 (very high) to 5 (very low) scale	
This is a poor time for a young person to start an academic career in my field	Soft sciences	3.70
	Hard sciences	3.78
If I had to do it again, I would not be an academic	Soft sciences	4.54
	Hard sciences	4.38
My job is a considerable source of personal strain.	Soft sciences	3.35
	Hard sciences	3.50

Source: CAP Survey 2007/2008
Question: B5 State to what extent you agree or disagree with each of the following statements about academic work

Table 2.11 Perception of change in working conditions of Argentine academics

Since you started the academic career have the working conditions improved or deteriorated?	Average on a 1 (very much improved) to 5 (very much deteriorated) scale	
	Soft sciences	Hard sciences
Academic working conditions in general	2.73	2.56
Conditions demanded for teaching	2.95	2.93
Conditions demanded for research	2.80	2.77
Access, permanence and promotion mechanisms of the appointment	3.08	2.95
In the salary	2.52	3.20

Source: CAP Survey 2007/2008
Question: B7 Since you started the academic career have the working conditions improved or deteriorated?

similar indexes reveal academics from both groups disagree with the statement that 'this is a poor time to start an academic career.' Moreover, the average grades 3.78 (soft sciences) and 4.54 (hard sciences) show that academics from both groups 'would choose the academic profession again.' Even though these averages would reflect the teachers' positive perceptions, it is also noticed that an important number of academics (3.35 from the soft sciences and 3.50 from the hard sciences, in average) regard their job as a considerable source of strain. This may not seem to be a contradiction with the high levels of satisfaction previously described rather it points out what may appear as an effect of the long reform process started in the 1990s and still unfinished due to its complexity. The latter is related to the rising demands of greater production and outputs along with the increasingly competitive system academics need to deal with in order to maintain their position in the system.

Table 2.11 shows there is no significant difference on the academics' opinions, except for 'in the salary', *w*here hard sciences academics adopt a more negative perception (3.20) than those from the soft ones (2.52).

In the statements related to working conditions, both for teaching and research as well as for the access, permanence and promotion systems, academics seem to perceive such conditions neither improved nor deteriorated significantly. In fact, the average grades rank from 2.55 to 3.08. This would suggest an intermediate appreciation with a slight tilt towards a more negative perception, mainly regarding the conditions required for teaching as well as for the access, permanence and promotion mechanisms.

2.5 Conclusions and Final Considerations

The comparative study results from the data obtained by the *Red Nacional de Estudio de la Profesión Académica Argentina* within the framework of the *Red Internacional de Estudio sobre la Profesión Académica* (CAP). The procedure

implemented consisted of a self-administered questionnaire carried out through internet by 826 Argentine academics, between 2007 and 2008. Data of the 2010 Argentine weighted sample are analyzed. The sample consists of 780 academics that responded to the variable 'higher grade' taken into account for the comparative study of the disciplinary fields involved. 46 surveys that did not respond to the variable mentioned are not considered in this report.

The work aimed at analyzing, first, some background information of Argentine academics: gender, age and educational level of the family; professional trajectories regarding years of work at different professional settings as well as the number and features of the institutions (state and private ones, whether academic or not). Next, the academics' perceptions of their working conditions, the levels of satisfaction with the current academic work and the significance they attribute to their disciplinary and institutional referents as well.

The analysis carried out reveals the study population shows the following features:

The academics surveyed are 50 years old in average, making up an age group that developed its professional activity in the context of the Argentine university change, from a traditionally teacher-centered model to one that privileges research.

They present certain differences regarding rank: the hard sciences show higher percentage of associate teachers (68 % professors) compared to the (32 %) of the soft sciences. The average is also higher in the case of teaching assistants (*jefe de trabajos prácticos*) in the hard sciences (64 %) than in the soft sciences (36 %).

As to gender, 50 % of the academics from the hard sciences are male. In the soft sciences that gender is represented only by 32 % of the respondents. This ratio changes considering women, they represent 68 % in the soft sciences and about 50 % in the hard ones. These data could be interpreted as the maintenance of women predominance in the soft sciences faculty and the increase of this gender in the hard sciences, a predominantly male field.

The level of education of the parents of the academics surveyed do not present information showing significant differences between both fields. Nevertheless, a feature to be noted is the 30 % of the parents that accessed to university or tertiary studies, either complete or incomplete. This is relevant considering they reached such levels of education in historical contexts much more restricted in educational issues.

With respect to the respondents' academic traditions, statistics show we are dealing with a heterogeneous population that in the majority of the cases achieved the condition of academic without coming from family university traditions (more than 60 % of the parents reached university/tertiary levels of education and more than 30 % of them did not access to secondary studies). This fact could be interpreted as an example of the democratic trend of the Argentine system of education proper to the period of scholarship of the group under study.

Data on the academics' trajectory show that in the two areas, these academics carry out their working activities at university institutions, both those with full time and part time appointments.

It is also found that academics from the hard sciences worked more years as full time teachers at university institutions (12.1) than those of the soft sciences (7.6).

Also, the latter worked more years as part time teachers (12.7 years) than academics of the hard sciences (10.1 years).

In the option 'independent work' full time academics of both areas worked very few years (2 years in average) out of the university. Instead, part time academics worked more years (5.2 in the soft sciences and 5 in the hard sciences). That is, the lack of significant differences would stress the university as the predominant employment choice.

When referents or affiliations are considered, the average qualifications nearly reach the maximum in both fields, thus showing that all the referents taken into account are significant constituent agents of the work and professional identity of these academics.

With respect to the academics' links with the university, and considering full-time and part-time appointments, the data provide percentage differences between the groups. Full-time appointments present higher percentages in the hard sciences (61 %) than in the soft sciences (38 %). Conversely, and regarding part-time appointments, percentages are higher in the soft sciences (55 %) than in the hard (33 %). It would be needed a deeper study on the greater possibilities teachers from the soft sciences have to develop their activity simultaneously in levels other than the university.

The analysis of the time involved in the contracts shows there are no statistically significant differences between both groups. The option that predominates in both fields is that of 'term-defined contracts' with an average of 64 % in the soft sciences and 74 % in the hard sciences. These data could be closely related to the system of public and periodic evaluations (concursos) in use in the Argentine university.

Data on the levels of satisfaction with academic work show identical values at the midpoint of the scale from 'very high to very low,' in both disciplinary fields. That is, the academics involved, no matter their disciplinary field, are not completely satisfied with their work.

This analysis may be complemented by taking into account some statements through which academics show their mostly positive opinions regarding their job. The nearly similar values in both fields express their strong disagreement with the statement 'this is a poor time to start an academic career.' Moreover, academics from both areas would choose the academic profession again.' However, it is also noticed that average qualifications tend to be slightly unfavorable as the academics believe their job is a considerable source of stress. This fact could be related to the reform process of the 1990s and its demands of academics' greater production and outputs.

Finally, regarding working conditions no significant statistical differences are seen, except for the salary with a more negative viewpoint in academics from the hard sciences (3.20) than in the soft sciences (2.52).

The perception on the conditions demanded for teaching and research as well as the academics' opinion on the access, permanence and promotion mechanisms are at a midpoint (the average qualifications vary from 2.56 to 3.08), with a slight tilt towards a more negative viewpoint in what refers to teaching demands and to the access, permanence and promotion mechanisms of the appointments.

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Chapter 3
Brazilian Higher Education: Converging Trajectory Patterns in a Diverse Institutional Environment

Elizabeth Balbachevsky

3.1 Introduction

Diversity is one of the most conspicuous traits of Brazilian higher education. In 2012 Brazil had more than 2.4 thousands of higher education institutions, to be found both in metropolitan areas and small towns around the country. While by law all these institutions are supposed to provide similar undergraduate instruction – all of them being entitled to grant bachelor degrees – the differences among them are immense. One relevant trait of Brazilian higher education is the crucial role played by the small undergraduate professional schools[1] scattered around all the country. These small schools comprise 83 % of all institutions and answer for 29 % of all undergraduate enrollments. Most of them are for-profit institutions. Many came to exist thanks to the past entrepreneurship of well-succeeded owners of private secondary schools. A few of them (29 institutions) have experienced strong growth in the last two decades and have been up-graded to the status of private universities. Most of the growth of the private sector in the last decade has been linked to the expansion of these large for-profit universities.[2] Beside this huge segment of for

[1] Following the Continental Europe tradition, Brazilian bachelor degrees are also professional degrees. As such, these schools are entitled by the Federal Government to grant bachelor degrees in the areas they are recognized as having competence (in a very bureaucratic mode of appraisal). Usually they have just a small number of programs, thus they are known in Brazil as *Faculdade* (Faculty). Some of them, bigger and providing training for wider number of professions, are called *Federação de Escolas* (Federation of Schools).

[2] In fact, this is the fastest growing segment in Brazilian higher education. In just two years, from 2006 to 2008 its share in Brazil's undergraduate enrollments grew from 9.4 to 14.5 %. In 2012, the for profit universities were responsible for more than 30 % of all undergraduate enrollments in Brazil.

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profit institutions, the private sector also comprises a number of philanthropic universities (usually denominational universities) that are better institutionalized and well endowed. Overall, the private sector is responsible for providing education for 73 % of all undergraduate students in Brazil (for an overview of the Brazilian private sector, see Sampaio 2011).

In the public sector, the most usual institutional format is the university. Public universities are owned either by the federal government, the state governments or even by municipalities. Federal institutions are supervised by the Ministry of Education, while state and municipality owned institutions are supervised by the state governments. This difference may amount to almost nothing if the state is poor and depends on the help of the federal government. However, it may entitle strong autonomy to the university, if the state is rich and powerful.

While the public sector is responsible for only 27 % of all undergraduate enrollments, it answers for 42.3 % of all faculty positions in the country. More important, most of these positions are full-time contract. In fact, 80.1 % of all faculty positions in the public sector are full-time contracts. At the other extreme, among the private non-university segment, only 15.9 % of the faculty positions are full-time contracts. In Private universities, nevertheless, this figure experiences a small improvement in the last decade, reaching 37.2 % in 2012 (INEP 2013).

This chapter investigates how this diversity, constrained by uniform policies imposed by the government, shapes different trajectories among academics working in different kinds of institutions. Data for this study comes mostly from official sources, mainly the Brazilian Census of Higher Education, carried out annually by the Ministry of Education, and the information collected by CAP – the Changing Academic Profession network – in Brazil. As part of the network, a representative survey of the academic profession was conducted in Brazil in 2007. Under this survey, a sample of 1200 academics – representative for all the country's regions and sectors of higher education – were interviewed, collecting data for different aspects of their academic experience, training and trajectory.

3.2 Institutional Diversity Inside the Public and Private Sectors

Higher education in Brazil is not only diverse. It is also highly stratified. Even inside each sector one can find relevant differences among institutions. In the public sector, the major line of differentiation and hierarchy is the degree of the institution's commitment to graduate education, especially doctoral education (Balbachevsky and Schwartzman 2010; Durham and Gusso 1991). In the late 1960s, when graduate education was first recognized and started to receive support from the federal government,[3] only a few public institutions were well positioned to take advantage of the existing incentives. At that time, these institutions were the only one to have

[3] For an overview of the Brazilian graduate education see Balbachevsky (2004).

a significant number of PhD holders among their faculty. Due to the commitment of these scholars, these institutions housed a large number of graduate programs. With a great number of Ph.D. holders, they also were able to capture most of the resources the Brazilian government was making available for science and technology projects in the 1970s (Schwartzman 2010). In this way, graduate education and research became fully institutionalized inside these universities. This is the reason I propose to classify these universities as "public research universities." As noted before, their major distinguishing feature is their commitment to the graduate education, especially doctoral education: in none of them less than 30 % of their students are enrolled in graduate programs. In some, this proportion reaches 50 %. These institutions, plus a small but active number of the Federal Research Institutes, answer for more than 85 % of all doctoral degrees granted in the country.

The other public institutions are mostly devoted to undergraduate education, even when they also hold the status of university. Inside them, graduate education is a smaller enterprise and tends to be confined to the master level. Nonetheless, these institutions play a relevant role not only in undergraduate education, but also as a regional source of skills and knowledge. Thus, I propose to classify them as "regional public institutions."

Inside the private sector differences are also huge. These differences are not linked to the institutional format, but are mostly produced by the kind of educational market targeted by the institution. A small number of well-known institutions target students coming from the wealthier families, willing to pay for good up-dated educational services. Some are new non-university institutions; some are old traditional Catholic universities and other denominational universities. In common, all these institutions have room for engaging a larger proportion of Ph.D. holders in their staff, and are willing to support the research engagement of their academic staff. For them, the academic credentials and research outputs are a source of differentiation and prestige. Besides undergraduate programs, these institutions also offer well reputed professional training programs, professional graduate education, as well as consultancy and advisory activities. I propose to classify these institutions as "elite private institutions."

The great majority of Brazilian higher education institutions are confined to a kind of commodity-like market for mass undergraduate education, targeting children from poor families, usually older students searching to upgrade their credentials in the labor market. In this market the price charged for education is the most relevant differential. These institutions have no incentives to support a rich academic environment. Academics with PhD and research interest are a luxury these institutions can seldom afford. Most of them are small isolated professional schools, but some are huge teaching-only for profit universities. They may be called "mass oriented private institutions."

These diverse environments create important differences regarding the conditions for academic work. Table 3.1 below explores some relevant aspects in this dimension.

As one can see, full-time contracts are the norm inside the research institutes and the public research universities. Research oriented institutions are also marked by a more competitive environment, calling for greater commitment from their faculty.

Table 3.1 Profile of working conditions and academic experience of Brazilian academics, by sector (percentages)

Type of institution					
Working condition and academic experience	Public research institutes	Public research universities	Public regional universities	Private elite institutions	Private mass institutions
Full-time employed	95.9	90.3	79.7	51.8	22.2
Have contract with another academic institution	16.3	7.1	14.5	24.0	39.0
Work experience outside the academic market	24.5	18.8	30.7	50.9	66.7
Have done research in the last 2 years	95.9	93.9	83.1	71.9	61.0
Have access to external support for research	73.5	57.9	30.1	27.5	8.6
Have academic products (last 3 years)	93.9	88.3	75.3	63.7	55.2
Have international research connections	65.3	37.6	22.0	27.5	9.0
Teach only at undergraduate level	15.4	46.1	62.5	64.0	92.9

Source: CAP Survey 2007/2008

The proportion of academics with working commitments outside their walls is small and the proportion of academics that are active researchers (doing research with external support and publishing) is high. Public regional institutions and private elite institutions have a more modest profile, but also do well in all dimensions considered here: they still have a good number of academics committed to the institution, and a fair proportion of active researchers inside their faculty. The most relevant difference between these two segments is the proportion of academics with work experience outside the academic market. Academics with this profile represent 50 % of the faculty employed at the private elite segment, but only 30 % at the public regional universities. This figure is not a surprise since institutions at the private elite segment usually boast their competence in providing excellent, market-fitted education, both at the undergraduate and graduate level. For them, faculty with sound up-dated experience in the job-market is an asset and not a failure. As expected, private mass oriented institutions provide the poorer academic environment: they usually operate with part-time paid instructors,[4] many of them with working

[4] The most usual contract at the private sector is a part-time with payment according to work tasks, that may include teaching hours, coordination of programs, advising students and even doing some research.

commitments in other institutions or outside the academic market. Being teaching-only institutions, their academics usually have their teaching experience confined to the undergraduate level (for an overview of the conditions for teaching and research in different institutional environments in Brazilian higher education, see Schwartzman and Balbachevsky 2013).

3.3 Convergent Trajectories in a Diverse Institutional Environment

In spite of all differences discussed above, higher education in Brazil experienced strong convergent dynamics since the end of 1990s, produced by the regulatory bodies that supervise the entire system.

From the 1970s until early 1990s, the private and public sectors coexisted with almost no point of contact. Operating under different rules and with diverse goals, one sector almost ignored the other and recruited professionals in segregate markets: public institutions relied on their alumni and had the public graduate system for their needs in faculty's qualification. Private institutions also enlisted their academics among their alumni. In their market, faculty's academic credentials did not matter. Instructors working in the private sector were poorly qualified and completely ignorant of the rules of academic life.

This picture started to change in the middle of 1990s, when a new Education Act, the *Lei de Diretrizes e Bases da Educação* (LDB), was enacted. The new regulatory framework required the private sector to increase the proportion of academics with master's and doctorate. The regulatory pressure opened a new market for the young scholars coming from the ever-expanding public graduate system. At the end of the 1990s the opportunities for entry in the public sector were small, since the federal government strongly limited the number of opening as part of its fight against inflation.[5] At the beginning of the 2000s, when the public sector started to hire young academics again, the whole picture was changed. The new openings attracted a large number of well-qualified young scholars formed during the 1990s and the 2000s.

The data collected by the CAP survey provides relevant indication of the new and more demanding environment the new generation of scholars faces. First, considering the span of time elapsed between when the would-be academic finishes the undergraduate studies and when he/she secures the first position in a higher education institution, the data shows that this gap is widening.

Table 3.2 below provides information on this dimension controlled by the academic's institutional affiliation and the year when she/he obtained her/his first position as an academic (academic cohort).

[5] At the end of the 1980s, the annual inflation rates in Brazil had reached the stoning level of 480 %. To control the public expending was one of the main instruments used by the government in the successful program launched in 1994 to control inflation.

Table 3.2 Time (in years), for Brazilian academics, elapsed from achieving the bachelor degree and being appointed to the first academic position by type of institution and academic cohort*

Type of institution	Academic cohort[a]	Mean	Std. deviation
Public research institutes	Before 1990s	2.19	3.97
	1990s	5.9	4.72
	2000s	10.67	4.24
	Total	4.71	5.30
Public research universities	Before 1990s	2.68	4.02
	1990s	6.81	5.04
	2000s	8.00	5.64
	Total	4.60	5.04
Public regional universities	Before 1990s	1.70	5.57
	1990s	5.96	5.35
	2000s	5.51	4.33
	Total	4.16	5.65
Private elite institutions	Before 1990s	2.49	5.07
	1990s	5.76	5.11
	2000s	9.18	7.12
	Total	4.83	5.96
Private mass institutions	Before 1990s	1.00	6.72
	1990s	6.01	6.24
	2000s	7.67	6.76
	Total	5.55	6.98
Total	Before 1990s	1.95	5.37
	1990s	6.07	5.66
	2000s	7.57	6.34
	Total	4.92	6.12

Source: CAP Survey 2007/2008

[a]Most of the international literature (Altbach 1991) uses the year of the doctorate as a reference to establish the academic's cohort. In this paper, the cohort is defined by the year of his/her first employment as academic in a higher education or research institution, as reported by the academic in the survey

The data shows that, on average, the younger generation needs more time after finishing the undergraduate studies before being acceded to an academic position. This is true for academics employed in all types of institutions. For the older generation, those that started their career before the 1990s, the table presents a very different pattern: in all institutions the gap is much shorter. Older academics, even from the research oriented institutions, reported a very short period of delay, some of them being accepted as academics even *prior* to finishing the undergraduate studies.

Another aspect of the convergent dynamics present in the Brazilian academic market is the relationship between graduate education and employment. Brazilian graduate education recognizes three different kinds of degrees: the specialization degree, the master degree and the doctoral degree. Specialization is a professional

degree, deemed to offer alternatives of post-graduate studies for professionals working in the general market. Its main objective is to create opportunity for a deeper understanding of selected aspects of the professional training, and develop competences needed by the professional labor market. Master and doctoral programs have a more academic orientation. The master degree is supposed to be an intermediate stage in the training for the academic life, while the doctoral degree finishes the academic training. This conception holds true including in professional fields like law and engineering.[6] Master's and doctorate candidates are students, and thus they may have access to scholarships, but have no contract or academic responsibilities to the university outside attending the courses and writing their dissertation. In order to successfully conclude the master and the doctoral studies, candidates are supposed to attend a prescribed set of courses and to present a thesis in a public defense before a board of examiners – three in the case of a master degree, and five for the doctorate.

Brazil, like many other emerging countries around the World, has always been plagued by shortcomings derived from a small pool of academically competent candidates from which to recruit faculty for its higher education institutions. Nevertheless, the last decade witnessed relevant changes in this dimension in all type of institutions, as can be seen in Table 3.3, below:

In this table, the first column reports the academics' average gap between finishing the first graduate program (a master or a specialization program) and being accepted as an academic staff in a higher education institution. The second column reports the average gap between finishing the doctorate and the first appointment as academic. Negative numbers mean that the first appointment occurred before finishing the level of training considered. As one can see, for the older cohort graduate education typically was an experience that came "after" the first academic position. While in research oriented institutions the gap between starting the academic career and finishing the first graduate program was small, a bit more than 2 years on average; for academics employed at the more undergraduate oriented institutions, this gap was significantly bigger (from 4 to 7 years on average, depending on the type of institution).

The table also shows that the 1990s was a turning point inside the public sector. Since then, requiring at least a master degree of the candidates for an academic position became a common exigency. In the 2000s the requirement of a doctoral degree also became usual in the public sector.

In the 2000s the regulatory framework regarding the faculty's academic credentials imposed by the government became more stringent. As a result, pressures for attending graduate education became widespread in all segments, and more and

[6] Since 1998, Brazil also recognize a professional master program. Professional master programs is supposed to combine a strong academic core with a professional training. Academics linked to this kind of master program are supposed to have a good academic profile (measured by their academic outputs) and be reputed as good professionals. These exigences make the professional master's program more demanding than the traditional academic one. This seems to be the main reason for the small number of professional master's programs (395 programs in 2013), when compared to the traditional academic model (2894 programs in 2013).

Table 3.3 Time (in years), for Brazilian academics, elapsed between being accepted to the first academic position and receiving the first graduate degree, and between first academic position and finishing the doctorate

		First graduate degree		PhD	
Type of institution	Academic cohort	Mean	Std. Deviation	Mean	Std. Deviation
Public research institutes	Before 1990s	−2.04	5.72	−10.62	7.39
	1990s	2.80	3.93	−1.2	4.87
	2000s	7.55	3.32	2.22	1.30
	Total	.96	6.23	5.7	8.21
Public research universities	Before 1990s	−2.96	6.74	−12.39	6.56
	1990s	1.91	4.78	−5.52	4.64
	2000s	4.32	4.93	.86	2.54
	Total	−.59	6.57	−9.0	7.12
Public regional universities	Before 1990s	−3.95	6.72	−15.81	6.49
	1990s	.52	5.37	−6.27	4.21
	2000s	2.02	3.60	.20	2.11
	Total	−1.03	6.22	−10.41	7.73
Private elite institutions	Before 1990s	−4.63	8.70	−14.46	8.16
	1990s	−.82	4.83	−7.58	3.84
	2000s	3.23	5.49	−.90	2.34
	Total	−1.92	7.49	−9.77	7.87
Private mass institutions	Before 1990s	−7.43	7.91	−19.48	6.73
	1990s	−.26	5.34	−6.61	3.45
	2000s	2.01	4.28	−1.20	3.11
	Total	−.96	6.67	−9.78	8.36
Total	Before 1990s	−4.52	7.52	−14.56	7.35
	1990s	.25	5.26	−6.21	4.24
	2000s	2.48	4.44	−.40	2.85
	Total	−.98	6.66	−9.48	7.83

Source: CAP Survey 2007/2008
Note: Negative values indicate academic career began prior finishing the graduate degree considered

more academics started seeking academic credentials in order to improve their opportunities. This movement created different patterns of response inside each segment. At the more research oriented institutions, holding a doctoral degree became almost mandatory and increasingly a necessary condition to successfully apply to an academic position. At the public regional universities and at the private elite institutions, holding a lower graduate degree became the almost universal condition, and holding a doctoral degree was recognized as a differential that highly improve the odd in favor of the candidate applying for an academic position. Pressures for some kind of graduate degree are also widespread inside the private mass oriented segment. In this segment, even older academics are being pushed to attend graduate programs.

In fact, the data collect by the CAP survey in Brazil provides evidence of the superposition of two different movements: the widespread demand for academic credentials for the younger generation, coupled with the pressure over the older academics for attending graduate education. Academics from research oriented institutions reported to be younger when finishing their first graduate program (on average, 27 year old). Also the distribution of their answers to this question is more concentrated, which is congruent with the hypothesis that for these academics attending graduate studies at the beginning of the career is a long established demand. The answers given by the academics from the public regional universities and the elite private institution are distributed in a wider range and are a bit skewed toward the older age. This figure is congruent with a situation where graduate studies are required from new academics while, at the same time, pressures are being put upon the older academics for attending graduate programs. Among the academics in private mass oriented segment, the average age for finishing the first graduate degree is 30 year old, The distribution of the answers are wider and more skewed toward the older age, which is consistent with a situation where attending a graduate education is an exigency imposed over older academics that have already long experience in lecturing at the undergraduate level.

The data presented in the preceding pages provide clues for describing the effects off convergent dynamic that hold true for all the different types of institutions. In order to answer to the pressures created by the new regulatory framework for upgrading the institutions' academic credentials, a new value is being put on academic qualification. For the younger generation, there is a need to hold a post-graduate degree in order to successfully apply for an academic position. For the older academics there is a pressure to go back to school in order to secure their positions and improve their odds for promotion and access to other benefits. Nevertheless there are some interesting differences in the pattern of recruitment in different kinds of institutions that will be explored below.

3.4 Access to the Academic Market

With such a wide diversity of institutions and sectors present in the Brazilian higher education, one should expect for diverse trajectories leading to access to different niches inside the academic market. The data collected by the CAP survey provide some clues regarding this dimension. First of all, one should note that mobility is low inside the Brazilian academic market. In the CAP survey, 43 % of respondents answer that the institution where they have been interviewed is their first academic position, and other 32 % indicated that in the past, they worked less than 5 years in other institutions before being accepted to their present institution. There are no significant differences between academics from all segments. This pattern of response holds true even when one takes a close look at the academics from the older cohorts (the ones that have entered to the academic market prior the 2000s). The only exception is to be found among the older cohort of academics from the

private mass oriented segment. Here almost 75 % of the academics from the older cohort (the ones that secured the first academic position prior 1990s) declared they have worked more than 5 years in another institution prior entering the present institution. Also, when asked if they are considering a move to another institution, 68 % of all respondents gave a negative answer. This figure is higher among the academics at the research universities (80 %), and a bit lower among those employed at the private mass oriented segment.

With so low mobility, the relevant evidence to understand the differences in the paths that lead to an academic position in each segment must be searched elsewhere. The CAP survey uncovers some clues. First of all, one should note how segregated is the pattern of recruitment inside the public sector. Table 3.4 below shows that the sector where the academic got his/her bachelor degree is one of the most relevant information for predicting his chances of securing a place in the public sector. In fact, more than 80 % of all academics employed at the public sector have attended bachelor programs at the public sector.[7] What is more relevant, at the top academic institutions (the public research universities) 50 % of all academics have done their bachelor degree "at the same institution" she/he is employed at the present.

Many studies of higher education in developing countries emphasize the inbreeding problem, which is the tendency of an institution to form its own faculty (Horta et al. 2010). While there are some evidences of this problem also in Brazil,

Table 3.4 Brazilian academics' sector of undergraduate studies and degree of diversification of the graduate training by type of institution (percentages)

Type of Institution						
	Public research institutes	Public research universities	Public regional universities	Private elite institutions	Private mass institutions	Total
Sector of the bachelor degree						
Public	89.4	85.8	79.7	45.5	39.7	57.9
Private	10.6	14.2	20.3	54.5	60.3	42.1
Total (n)	47	127	217	134	446	971
Graduate experience						
Always in the same institution	14.6	33.8	17.8	30.8	8.5	18.0
Some experience outside the institution	61.0	47.9	77.1	60.2	89.7	74.8
Some experience abroad	24.4	18.3	5.1	9.0	1.8	7.1
Total (n)	41	142	236	133	390	942

Source: CAP Survey 2007/2008

[7] This information is even more impressive if one consider that the public sector answers for only 25 % of all undergraduate enrollments.

the pattern found does not fit into the usual definition of inbreeding that takes as reference the institution where the academic attained his/her PhD degree. In the case of Brazil, due to the large size of Brazilian graduate system, the inbreeding problem is being attenuated in recent years. Nevertheless, our data provide some clues regarding the informal rules presiding the selection of new academics for the public sector, specially in research oriented universities. The data shows that, despite that the law regulating the procedures for the selection of new academics imposes public open contests, in most universities informal rules are in effect, allowing for a relevant bias favouring the institution's alumni.

When one considers the academic's experience at the graduate level, the pattern presented above doesn't change a lot (Table 3.4, above). On the whole, 34 % of the academics working at the best universities have done all their graduate studies at the same university they are now working. This figure drops to 18 % at the public regional universities, but is up to 30 % among the academics employed at the private elite institutions. These figures are influenced by the pattern of concentration of graduate education in Brazil described above. Even so, the pattern is impressive and provides clues of how strong is the segmentation in the academic market in Brazil.

Figure 3.1 below explores how the above mentioned dimension has changed over time and inside each segment of higher education. This figure presents the graduate

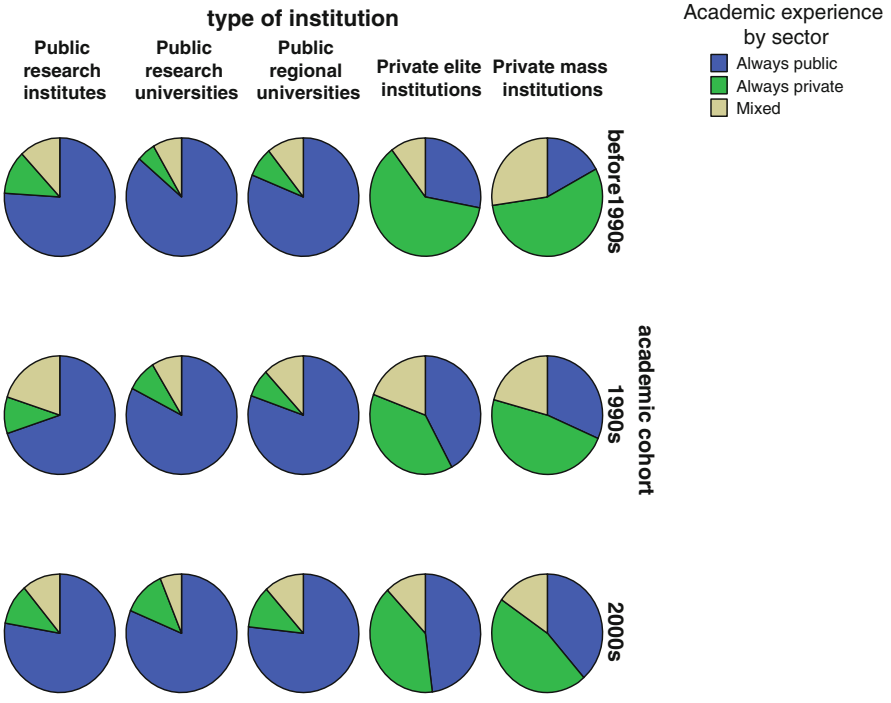

Fig. 3.1 Academic experience at graduate studies by type of institution and academic cohort (Source: CAP Survey 2007/2008)

experience of academics from all segments considering the sector where different degrees were earned and when the academic entered to the academic market.

The figure above shows that while the public sector still favors academics that attended by graduate programs inside the same sector, private institutions experience an impressive movement of opening positions for academics formed by the public sector. While conditions of contract and work inside this sector are still very poor, the new profile of academics recruited by these institutions sustain the expectation that the private sector in Brazil may experience new tensions and opportunities for change in the future. This prognosis is specially strong in institutions of the private elite sector.

The patterns presented above explain one interesting tendency of the Brazilian academic profession, already analyzed in another paper (Schwartzman and Balbachevsky 2013), which is the increased priority given by the Brazilian academics to research. Both in the 1992 survey conducted by the Carnegie Foundation, and in the 2007 CAP survey, we asked academics whether their priority was on teaching, on research, or both. Comparing the distribution of responses from the two surveys, it is possible to find a significant increase, among all academics, in the priority given to research between those years. In the public research universities, in 1992, 52.8 % of all academics declared that their priorities were in research. In 2007, this figure increased to 61.9 %. Among the academics from the regional research universities, the figures went from 38.8 % to 51.7 %. In the elite private institutions, in 1992, 46.0 % of the academics declared that research were their priority, and 49.7 % gave the same answer in 2007. Even at the mass private sector 29.9 % of the academics in 1992 declared that research was their priority. This figure raised to 38.4 % in 2007.

This increase happens in all types of institutions, and it is an evidence of a new academic ethos are becoming dominant in Brazil. An ethos that poses strong priority in research and lower emphasis on teaching. The decrease in the number of academics declaring to give priority to teaching is an evidence that the notion that academics should do research has become dominant in Brazil, even in contexts where, in practice, research does not really take place in any significant scale. In part, this is related to the sheer growth of proportion of academics with doctoral degrees; but it also expels a situation where teaching as a priority is losing its legitimacy, even if the system as a whole is focused in teaching. Nevertheless, to state that one's priority is research does not say much about how this research is being done, and how intense is one's research work. The CAP data shows that, as expected, in each type of institution academics with doctorate tend to be more involved in research. However, the profile of the institution also matters. As shown at the beginning of this paper, the conditions of work from one type of institution to another differ enormously. These conditions of work create relevant constraints for the way an academic fulfils her/his aspirations as a researcher. For example, while 69.5 % and 58 % per cent of the doctorate holders working in research institutes and research universities, respectively, reported success in securing external resources for their research; this proportion drops to 40.4 % among academics with doctorate working in regional universities. It is only 29.8 % among their colleagues of the

elite private institutions. Among the Ph.D. holders working in the private mass oriented sector, only 15.3 % reported access to external support for their research. These figures are even more expressive if one have in mind the fact that in Brazil higher education institutions, both public and private, are not supposed to support the expenses related to research. Traditionally, resources for academic research in Brazil, even for attending Conferences and Seminars, come from grants given by Federal and State level Science Councils and, to a lesser degree, from private foundations and enterprises. Thus, without access to external support, research is a small-scale and isolated endeavour, often with no production related to it, which means that these academics, even when holding a doctoral degree and doing research are de facto conducting their academic life parted from their peers.

This example illustrates how the converging patterns described above are diverted inside the institutional micro-environment, contributing to create new tensions and pressures for change inside all institutions. However, one should note that these tensions are particularly present inside the public regional institutions and inside the private elite institutions. In these institutions the new profile of academics recruited in recent years are at odds with the institution's priorities and patterns of governance (Balbachevsky and Schwartzman 2011).

3.5 Conclusions

This chapter has provided an overview of the more relevant dynamics shaping the changes in patterns of recruitment faced by academics in different sectors of the Brazilian higher education.

As noted at the beginning of the chapter, one relevant trait of Brazilian higher education is its intense diversification. In Brazil, diversification is brought by the huge presence of the private sector and the diverse types of institutions present in both the public and private sectors. In the public sector, the differential institutional commitment to research and graduate education is the main source of diversification. In the private sector, differences in the markets target by the institutions reinforces differentiation. While most of Brazilian private higher education institutions are confined to a kind of commodity-like market, where the prices charged for education are the main differential, the first two decades of the new century witness the emergence of a new dynamic sub-sector of elite oriented private institutions.

While in the past different sub-sectors tended to develop different strategies for recruiting new academics, the new regulatory framework created by the Brazilian Education Law of 1997 introduced convergent dynamics in all higher education. The new dynamics poses a premium in holding a graduate degree and, inside the public sector, holding a doctoral degree constitutes a relevant advantage. The academic market in Brazil became more competitive since early 2000s. The growth of a well-structured graduate system minimizes one relevant problem Brazil shares with many emerging countries, which is inbreeding. Nevertheless, some old traits are still in place in the Brazilian academic market, in particular, the data provides

interesting clues regarding the pattern of segregation that presides access to the most selective academic market, which is the academic positions inside the selected circle of public research universities. The data from CAP shows that inside these institutions informal rules for selecting their new academics tend to favor their alumni.

In spite of these traditional forces, the chapter also documented a number of changes and new dynamics that are reconfiguring the Brazilian landscape. These patterns of change have been reconstructed considering two different dimensions: first, there is the changing relationship between access to graduate studies and access to the academic market and, second, there is the changing pattern of inbreeding produced by the institution's strategies for recruiting new scholars. The results are impressive. While in past graduate education were a consequence of being accepted as academic in the public sector, now, holding a graduate degree is perceived as a pre-requisite for access to academic market, either in the public institutions, or in the elite private institutions and, to a growing degree, also in the mass oriented private sector.

As said before, in the past institutions of public and private sectors used to recruit their academics in segregated markets. However, this picture is not true anymore. What will be the outcome of these changes both for the public sector and mostly for the private sector is still an open question. The answer depends on the institutions' ability to reap on the competences brought by the new generation, and on the quality of the policies to be adopted by the government to support and enhance the new opportunities created by these changes.

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Chapter 4
Personal Characteristics, Career Trajectory and Job Satisfaction of Academics in Malaysia

Vincent Pang, Norzaini Azman, Morshidi Sirat, and Yew Lie Koo

4.1 Introduction

The Malaysian higher education system although relatively young with only a 50 year history has undergone major transformations especially since 2006. The transformation has resulted in changes in governance structures and new funding formulae, legislation, action plans, academic tasks as well as key performance indicators. Inevitably, in an increasingly demanding global and local environment, the nature of work of academics has expanded to meet growing expectations and demands. The demands of institutional competition, accountability and quality assurance processes have impacted on academics (Azman et al. 2011). The demands on the major tasks of teaching and research have increased significantly with emphasis on key performance indicators. These changes have impacted the career trajectory, motivations and morale of academics in universities.

Despite the changing scenarios, research on the identity of the academic profession and the changing context of academic work in Malaysia has been rather limited.

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Little is known about who the academics are, what their work entails and their lived experience in HEIs. This chapter provides glimpses into the portraits, lives and experiences of Malaysian academics in terms of a rapidly changing Malaysian higher education system. The chapter opens with an overview of the profiles and composition of academic staff in the Malaysian higher education institution (HEI). In a Malaysian context, HEI means universities and colleges, while academic staff includes all categories of faculty members at universities and colleges. The chapter then proceeds with descriptive and inferential statistics on the profiles and job satisfaction of academic staff based on the Changing Academic Profession CAP study undertaken in 2007. These statistics form a framework for discussing the characteristics and identity of the academic profession in Malaysia.

4.2 The Background of the Academic Profession in Malaysia

The higher education system in Malaysia is centralized consisting of 569 institutions, of which 69 are universities (MOHE 2011a). About 21 are private university colleges, 473 are colleges and 27 are polytechnics. There are currently 20 public universities and 49 private universities. There are 59,275 academics employed in universities, of which 30,252 are in public universities. Most academics are hired on a full time basis (98.8 %) at public HEIs whereas 98.2 % of them are full time staff at private HEIs.

As in many other developing countries, the number of academics has risen in recent years from 48,240 in 2007 to 59,275 in 2010 due largely to the massification of the Malaysian higher education system. At the same time, in line with the needs of the future 'knowledge society' the Malaysian government has increased the number of graduates in the workforce. This number is expected to increase as the Malaysian higher education system looks for new ways to meet the rising educational needs of the nation as well as to be the centre of educational excellence in the region. At the same time, the increase in student numbers will lead to a rise in numbers of universities in the public and private sectors.

Malaysian public universities and colleges are a typical case of the Napoleonic model whereby they are part of the state machinery and they therefore belong to a national system. As such, Malaysian academics employed by the public universities and colleges are public civil servants. Hence, the terms and conditions of academic work including salary scales, patterns of appointment and promotion are determined by the government. Access to a permanent position occurs quite early after 1–3 years of probation. As public civil servants, academics are entitled to pension schemes, social security, housing and medical benefits. They are also guaranteed annual salary increments as are other employees in the public sector. In terms of working conditions, they are given a lengthy annual leave, with 25 days for junior academics and up to a maximum of 35 days for the higher ranks. Universities establish their own personnel policies with regard to recruitment and promotion criteria, workload and others. In general, academia is still a relatively secure profession. It is

indeed rare for an academic is to be dismissed in his/her career within the public civil system. He/she is kept in the same position even when not performing. The academic profession enjoy relatively high prestige and provide an acceptable standard of living and a stable career (Azman et al. 2014).

The Malaysian structure of the university academic staff consists of four ranks: professor, associate professor, senior lecturer and lecturer. The ranks stand in hierarchical relation to each other and represent the academic career ladder. In addition to the main ranks, some other categories of 'other academic staff' include research officers who are employed at universities or at affiliated research institutes. The other category consists of tutors or assistant lecturers who have temporary appointments of a maximum of 4 years. They normally work for their doctoral degrees before being appointed to the post of a lecturer. To be appointed as lecturers in research universities, a doctoral degree is required. Although the retirement age for public servant is 60 years, retired professors can be hired on a contractual basis until the age of 65. With a special application by the vice chancellor, a contract professor may prolong his/her term to the age of 70.

While there are some variations in the career trajectory of academics in public and private universities, a typical path for the academics in the public universities involves the completion of a doctoral program, a probationary lecturership of 1–3 years, the achievement of tenure; and promotion to the rank of senior lecturer, associate professor and professor.

For those who join the academic profession as tutors or fellows in the public universities, obtaining a doctorate is their main objective. The degree enables them to be eligible for the highest ranks of the academia and is a key for reaching a stable and prestigious position. In recent years, there are rising numbers of faculty members with doctoral qualifications and this could be attributed to a number of factors. Firstly, the rise in the numbers of postgraduate programs at the local private and public HEIs. At the same time, the rising numbers of postgraduate student numbers in postgraduate education have encouraged faculty members to pursue doctoral degrees so as to enable them to teach on the postgraduate programs. The second factor concerns promotion opportunities. Academics need a doctoral degree in order to be considered for promotion especially at the professorial level.

Polytechnic and college teachers are normally required to teach more and to do less research They are also normally not expected to have doctoral level academic qualification. However, they form part of a recognizable spectrum that makes up a common profession with essentially similar values. Nonetheless, there are significant differences between those who teach and research in public universities and those who mainly teach in the polytechnics and other public non-university colleges. Perhaps the most important difference is that the salary and career structures of the two halves of the sector are different. University faculty is paid on salary scales and conditions of service that are unique. Polytechnic and college teachers are paid on salary scales that are closely related to those for primary and secondary school teachers. It is often argued that a public university lecturer finds it easy to gain promotion. The reason for this disparity is that the career structure of university staff reflects a general concern for academic merit, while that for polytechnic and college staff reflects a concern for administrative hierarchy and vacancy.

In the polytechnics and other non-university colleges, the academic hierarchy has retained greater vigor. Heads of department have remained permanent posts that do not rotate, partly because they represent established points on a salary scale that cannot be abandoned without loss, and partly because they fulfill a strong academic-administrative role that in universities would more normally be filled by professional administrators. There is also a significant difference of ethos between the universities and the rest of higher education. In the latter, the principal or director can take advantage of a more authoritarian tradition. In the universities, there is still emphasis on academic collegiality, autonomy and freedom.

4.3 Data Collection and Analysis

The data used in this chapter is based on the Malaysian data of the international Changing Academic Profession CAP study undertaken in 2007. The CAP International questionnaire was used to collect the data. Prior to the administration of the data collection to the respondents, the administrators of institutional data were given a briefing by the research team from the National Higher Education Research Institute based in Penang, Malaysia. The administrators were appointed by the respective vice chancellors or presidents of the public and private higher education institutions.

At the institutional level, the samples were chosen according to strata based on gender and academic rank. All data collected from the HEIs aggregated to 1226 cases which constituted 2.6 % of the total population of academics at that time. These samples formed 4.7 % of the total CAP international data. This data forms a framework for discussing how recent and current changes affect the academics' career trajectory and are likely to affect the Malaysian academic profession in the future.

Some data transformation was performed to derive useful statistics such as age and institution type. Descriptive analysis of data involved frequency with percentages, and means with standard deviations. Cross-tabulation and comparison of means were also done to explore relationships among some variables. Inferential statistics was also engaged to test some independent variables for job satisfaction.

4.4 Profiles of Malaysian Academics

The demographic characteristics of Malaysian academics who took part as survey respondents are tabulated in Table 4.1 below**.** They provide a snapshot of the academic workforce although we do not have reliable population-level data against which to benchmark the findings.

The table shows that slightly over half of the sample population were male (51.7 %), 98.6 % hired as permanent staff and 36.3 % hold a doctoral degree. For those

Table 4.1 Profile of academics in Malaysia

Characteristics	Profile
Gender	Male = 621 (51.7 %); Female = 581 (48.3 %)
Age	Mean = 39.5; SD = 9.12; Min = 24; Max = 72
Tenure	Full time = 1171 (98.6 %); Part time = 17 (1.4 %)
Doctoral degree	Yes = 436 (36.3 %), No = 766 (63.7 %)
Mother tongue	Malay = 1018 (91.5 %); English = 34 (3.1 %); Chinese = 37 (3.3 %); Others = 23 (2.1 %)
Mother tongue used in teaching	Yes = 269 (22.3 %); No = 939 (77.7 %)
Mother tongue used in research	Yes = 186 (15.4 %); No = 1024 (84.6 %)
Age when doctorate was earned	Mean = 35.7; SD = 6.26
Contract duration	Mean = 1.37; SD = 0.955

Source: CAP Survey 2007/2008

Table 4.2 Age and country in which degrees were earned by Malaysian academics

		In Malaysia		Outside Malaysia	
Variable	Age	Frequency	%	Frequency	%
First degree	24.4	774	64.9	419	35.1
Second degree	29.57	549	55.6	439	44.4
Doctoral degree	35.74	171	36.7	295	63.3

Source: CAP Survey 2007/2008

employed on contract, the mean duration of contract is 1.37 years. The age of the academics are between 24 and 72 years, with the mean of 39.5 years indicating that Malaysia has a much younger academic population compared to that of Japan with a mean of 51.7. The majority of the academics are of Malay ethnicity forming 91.5 % of the academic population and Malay is their mother tongue. This profile shows that the academic population in Malaysia is overrepresented by Malays and under represented by other ethnic groups.

As can be seen in Table 4.2, on average, academics in Malaysia earn their first degree at the age of 24, their second degree at 30, and doctoral degree at 36; with equal gaps of 6 years in between. As the qualification goes up, the percentage of academics obtaining degrees outside Malaysia increases progressively and vice versa for those obtaining degrees in Malaysian universities. The higher percentage of first degree earned in Malaysia by academics may be related to the fact that most pre-service first degree studies are self-funded, and pursuing these degrees is considerably cheaper in Malaysia. In many instances, further degree programs which are much more expensive to fund, are pursued whilst the academic are in-service and they are funded by the employers under human capital development programs of the country.

Of those with doctoral degrees, 63.3 % of the academics received their doctorates abroad, and predominantly in English speaking countries such as UK, USA, Canada, New Zealand, and Australia. However, there is a higher proportion of academics

Table 4.3 Teaching discipline and mean age of Malaysian academics

Discipline	Frequency	%	Mean age
Teacher training and education science	74	7.2	39.3
Humanities and arts	62	6.0	41.6
Social and behavioural sciences	55	5.4	42.6
Business and administration, economics	101	9.9	38.9
Law	22	2.1	43.1
Life sciences	66	6.4	42.1
Physical sciences, mathematics, computer sciences	148	14.4	38.9
Engineering, manufacturing and construction, architecture	275	26.8	36.9
Agriculture	15	1.5	43.3
Medical sciences, health related sciences, social services	106	10.3	43.1
Others	101	9.9	38.8
Total	1025	100.0	39.5

Source: CAP Survey 2007/2008

who received their first and second degrees from local universities (64.9 % and 55.6 % respectively). Despite the high proportion of doctorates earned outside the country, the figures are expected to decrease in the near future as many academics are encouraged to further their studies in local universities especially in research universities.

With reference to Table 4.1, it is to be noted that 91.5 % of academics use Malay as the mother tongue and only 22.3 % in fact use Malay as the language of instruction while 15.4 % use their mother tongue as the language for research. It is therefore assumed that the English language is used as the language of instruction by 77.7 % of the academic population whilst 84.6 % of the population use the English language as the language of research. It would seem reasonable to assume that academics may prefer to do their postgraduate degrees overseas where English is the language of instruction and research as preparation for an academic career.

Table 4.3 shows the breakdown of the respondents according to the disciplines in which they are teaching. As a consequence of Malaysia's emphasis on science, technology and engineering in higher education, a large proportion of the respondents come from the fields of engineering, manufacturing, construction (26.8 %); physical sciences, mathematics, computer sciences (14.4 %) and medical and health related sciences (10.3 %).

The comparison of the mean age of the academics according to the discipline of teaching shows that the mean age differs according to discipline. For example academics who teach in the disciplines of the medical sciences, health related sciences, and social services (43.1) are the oldest groups, whereas academics who teach in the disciplines of engineering, manufacturing and construction, architecture (36.9) are the youngest of the academic population. The duration of medical programmes is usually 1–2 years longer than those of other programmes. In the medical service in Malaysia, there is a compulsory service of 2 years for medical professionals in government hospitals before they can be admitted to the professional body.

Table 4.4 Malaysian academics' gender and mean age by academic rank

Rank	Male		Female		Total	
	n, %	Mean age	n	Mean age	n	Mean age
Professor	58	52.9	24	50.8	82	52.3
(% within rank)	70.7		29.3		100	
(% within gender)	9.8		4.5		7.3	
Associate professor	115	48.8	73	47.1	188	48.2
(% within rank)	61.2		38.8		100.0	
(% within gender)	19.4		13.6		16.6	
Senior lecturer	106	41.6	93	42.5	199	42.1
(% within rank)	53.3		46.7		100.0	
(% within gender)	17.9		17.3		17.6	
Lecturer	314	35.7	347	33.8	661	34.7
(% within rank)	47.5		52.5		100.0	
(% within gender)	53.0		64.6		58.5	
Total	593	41.0	537	37.8	1130	39.5
(% within rank)	52.5		47.5		100	
(% within gender)	100		100		100	
(% of total)	52.5		47.5		100	

Source: CAP Survey 2007/2008

This requirement may account for the higher mean age for the academics in the discipline concerned. In the case of the predominance of younger academics in the disciplines of engineering, manufacturing, construction and architecture likely reasons may be due to the over-supply of graduates in these fields and the attractiveness of the academic profession.

The profile of academic ranks (Table 4.4) indicates a relatively bottom-heavy structure. The largest numbers of academics are lecturers. The majority of respondents (79.4 %) are at the lower ranks with lecturers forming 58.8 % and senior lecturers forming 17.6 % of the profession. Professors only comprise 7.2 % of the academic population.

The mean age for professors is high 52.3 years, followed by 48.2 years for associate professors, 42.1 years for senior lecturers and 34.7 years for lecturers. These imply that on average, it takes a lecturer 7.4 years to be promoted to a senior lecturer, another 6.1 years for promotion to associate professorship, followed by another 4.1 years to professorship.

With what seems to be an almost balanced distribution according to the total number of academics (male = 52.2 %, female = 47.8 %), gender distribution does not appear as an issue in the profession. However, deeper analysis shows otherwise. There are many more men professors (70.7 %) than women professors (29.3 %) indicating that the higher academic position, the more men are found. Women constitute only about 38.8 % of the total population of associate professors. 52.5 % of females are concentrated in the lowest rank (lecturer) whereas less than 47.5 % of men are in these ranks. This may possibly indicate that women advance more

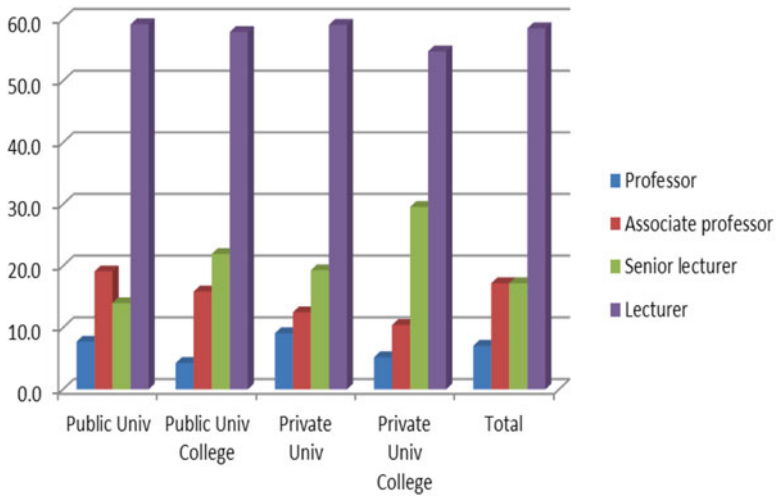

Fig. 4.1 Percentage of Malaysian academics based on rank (Source: CAP Survey 2007/2008)

slowly than men indicating that they may face the glass ceiling among other likely factors such as expectations to commit much more to family responsibilities and caregiving.

Figure 4.1 presents the breakdown of respondents according to type of institution and academic rank. It shows that professors and associate professors constitute about a quarter of the samples, and the other three-quarters are senior lecturers and lecturers. Indicative of the status of the institutions, the percentages of professors and associate professors in universities outnumber those of university colleges which are relatively newer institutions with more junior academic staff. The percentage of academics who are professors in private HEIs (9.1 %) is slightly higher than that of public HEIs (7.7 %). The percentage of associate professors is much higher in public HEIs (19.1 %). The percentage of junior academics is higher in private HEIs. This trend is not surprising as public HEIs have a longer history than private ones. Private higher education began to develop only after the enactment of the Private Higher Educational Institutional Act (Act 555) in 1996 (Malaysia 2006).

Further analyses show that the gender distribution in public HEIs is almost balanced, with slightly more females (51.0 %) than males (49.0 %). However, the scenario is different in private HEI with males (61.3 %) outnumbering females (38.7 %). This may be associated with favourable employment terms for women in the public sector in Malaysia. For example, a public sector female employee is entitled for 90 days of paid leave compared to only 30 days in the private sector. Another possible reason is the commercial nature of private HEIs which may discourage women to be part of it as well as the general tendency for women to bear a greater brunt of family responsibilities.

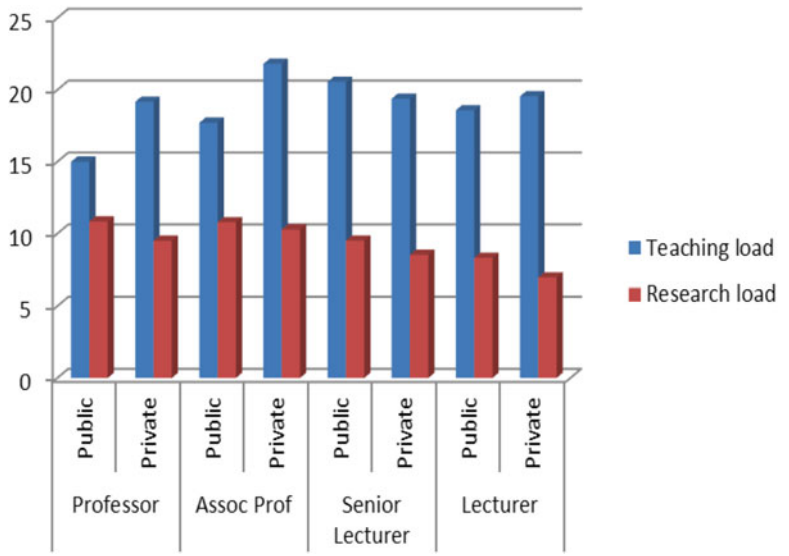

Fig. 4.2 Teaching and research load of Malaysian academics (Source: CAP Survey 2007/2008)

4.5 Teaching and Research

Two major traditional functions of an academic are teaching and research. Figure 4.2 shows the mean hours spent by academics according to rank and type of institution. The table shows that the teaching workload is higher for senior lecturers (20.56 h for public HEIs, 19.39 h for private HEIs) and lecturers (18.58 h for public HEIs, 19.55 for private HEIs) comparatively. However, the research workload is higher among the professors (10.84 h for public HEIs, 9.50 for private HEIs) and associate professors (10.79 h for public HEIs, 10.29 h for private HEIs). When the load is compared between public and private HEIs, it is found that, with the exception of senior lecturers, the teaching workload is higher in private HEIs.

The academics were asked to state as to whether they prefer teaching, research, or both but leaning towards teaching, and in both but leaning towards research. Table 4.5 indicates that in general, the largest proportion of Malaysia academics prefer to do both but leaning towards teaching (45.7 %) and to do both but leaning towards research (42.6 %). Very small numbers of them prefer teaching *per se* (8.1 %) or research *per se* (3.5 %).

The type of institution plays an important part in the development of academic identity (Becher and Trowler 2001; Henkel 2000; Neumann 2001). The analysis of preference for either teaching or research in Table 4.5 shows the perceptions of academics surveyed based on types of institutions. There are differences in the perceptions of academics on their preference on teaching or research according to the type of institution. The proportion of academics who prefer teaching per se increases in the order of public university (6.5 %), private university (9.3 %),

Table 4.5 Type of institution and teaching or research preference of Malaysian academics

Preference	Public university	Private university	Public university college	Private university college	All	%
Primarily in teaching	49	15	10	16	90	8.1 %
	6.5 %	9.3 %	11.7 %	13.9 %		
Both, but leaning towards teaching	359	64	33	49	505	45.7 %
	48.2 %	39.7 %	38.8 %	42.6 %		
Both, but leaning towards research	313	73	39	46	471	42.6 %
	42.0 %	45.3 %	45.8 %	40.0 %		
Primarily in research	23	9	3	4	39	3.5 %
	3.0 %	5.5 %	3.5 %	3.4 %		
Total	744	161	85	115	1105	100 %
	100 %	100 %	100 %	100 %		

Source: CAP Survey 2007/2008

university college (11.7 %), and private university college (13.91). The proportion of respondents who prefer research per se is rather low across institution types at less than 6 %. An interesting observation is that although it was mentioned earlier in the chapter that private HEIs tend to focus on profit and place less emphasis on research, the percentages of academics who prefer research per se from private HEIs (5.5 %) and private university college (3.4 %) are higher than those of public HEIs.

Academic discipline is regarded as the central organizing vehicle within higher education. Belonging to a disciplinary community involves a sense of identity and personal commitment (Becher and Trowler 2001). The relationship between teaching and research within the discipline undoubtedly impacts on the nature of academic work. In some disciplines (for example, education), teaching is viewed as a generic activity or 'real' academic work (Neumann 2001) while research on the other hand, is seen as an engagement with an academic community. Thus, it is interesting to see the preferences and career trajectory of academics based on disciplines.

Table 4.6 shows the cross-tabulation of the discipline of current teaching against teaching or research preference of the academics. The results show that preference in both but leaning towards research are prevalent in the life sciences (65.6 %) and agriculture (66.7 %); whereas preference in both but leaning towards teaching is prevalent in teacher training and education sciences (47.3 %), humanities and arts (50.8 %), law (67.1 %), physical sciences, mathematics, and computer sciences (50.3 %), medical sciences, health related sciences, and social services (46.5 %). The preference towards research among academics from the life sciences and agriculture is to be expected given the nature of the fields which are researched-based. Conversely fields such as teacher training and education sciences, humanities and arts, law, mathematics and computer science provide comparatively less research opportunities and funding. In the case of medical sciences, the academics

Table 4.6 Teaching or research preference and discipline of teaching of Malaysian academics

Discipline	Primarily in teaching	Both, but leaning towards teaching	Both, but leaning towards research	Primarily in research
Teacher training and education science	10	35	27	2
	13.5 %	47.3 %	36.5 %	2.7 %
Humanities and arts	5	31	25	0
	8.2 %	50.8 %	41.0 %	.0 %
Social and behavioural sciences	1	26	25	2
	1.9 %	48.1 %	46.3 %	3.7 %
Business, administration and economics	18	44	33	4
	18.2 %	44.4 %	33.3 %	4.0
Law	3	12	5	1
	14.3 %	57.1 %	23.8 %	4.8 %
Life sciences	4	17	42	1
	6.3 %	26.6 %	65.6 %	1.6 %
Physical sciences, mathematics, computer sciences	9	73	60	3
	6.2 %	50.3 %	41.4 %	2.1 %
Engineering, manufacturing and construction, architecture	16	122	125	8
	5.9 %	45.0 %	46.1 %	3.0 %
Agriculture	0	3	10	2
	.0 %	20.0 %	66.7 %	13.3 %
Medical sciences, health related sciences, and social services	8	47	40	6
	7.9 %	46.5 %	39.6 %	5.9 %

Source: CAP Survey 2007/2008

have considerably heavy clinical duties and this responsibility may affect their motivation in conducting research.

The responses on work preference for teaching and research were also analyzed by academic rank and gender. Table 4.7 cross-tabulates the academic rank and the gender of the respondents with the preference of four groups of academics according to whether they prefer teaching or research, or combination of both. The table shows that generally a very large proportion of academics prefer to teach and research and only a very small minority of them prefer to be primarily doing teaching or research.

The comparison based on academic rank shows that the proportion of academics who prefer primarily teaching increases in the order of professor, associate professor, senior lecturer and lecturer. A similar trend is observed for those who prefer both teaching and research, but leaning towards teaching. On the other hand, the numbers of academics who prefer both but leaning towards research decreases with academic rank. These show the trajectory that as one grows in the profession, the interest shifts gradually from teaching to research.

Table 4.7 Malaysian academics' teaching and/or research preference by academic rank and gender

	Professor		Associate professor		Senior lecturer		Lecturer	
Preference	Males	Females	Males	Females	Males	Females	Males	Females
Primarily in teaching	1	0	5	5	6	8	26	39
	2.0 %	0.0 %	4.8 %	7.7 %	5.9 %	9.0 %	8.4 %	11.5 %
Both, but leaning towards teaching	17	6	49	26	43	46	135	180
	34.7 %	31.6 %	46.7 %	40.0 %	42.6 %	51.7 %	43.8 %	52.9 %
Both, but leaning towards research	31	12	48	32	49	32	141	112
	63.3 %	63.2 %	45.7 %	49.2 %	48.5 %	36.0 %	45.8 %	32.9 %
Primarily in research	0	1	3	2	3	3	6	9
	0.0 %	5.3 %	2.9 %	3.1 %	3.0 %	3.4 %	1.9 %	2.6 %
Total %	49	19	105	65	101	89	308	340
	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

Source: CAP Survey 2007/2008

When compared according to gender, Table 4.7 shows that the percentages of female associate professors (7.7 %), senior lecturers (9.0 %) and lecturers (11.5 %) who prefer teaching primarily are higher than those of the males (associate professor = 4.8 %, senior lecturer = 5.9 %, lecturer = 8.4 %). The proportion of female senior lecturers (9.0 %) and lecturers (11.5 %) who prefer both but leaning towards teaching is higher than those of their male counterparts. Conversely, the proportions of female senior lecturers (36.0 %) and lecturers (32.9 %) who prefer both but leaning towards research are lower. These trends show that at the higher ranks, there are more males who are more inclined towards research, and conversely at the lower ranks, there are more females who are inclined towards teaching.

4.6 Job Satisfaction

Figure 4.3 shows the dependence of job satisfaction on three personal factors: gender, familial status and language use in teaching. It shows that male academics are more satisfied (69.6 %, mean = 2.20) in their jobs compared to their female counterparts (59.7 %, 2.38). It also shows that married members of the professions (66.8 %, 2.24) are more satisfied than those in single (57.1 %, 2.45). However, those who are in 'other' category show high variability of satisfaction, with a big proportion in the high (71.4 %) as well as in the low satisfaction group (14.3 %). Academics who teach in a language which is different from their mother tongue (65.8 %, 2.28) tend to be more satisfied in the job than those who teach in their mother tongue (61.8 %, 2.29). It is possible that those who teach the disciplines in the English language may have more opportunities to be globally networked in turn providing more opportunities for publication and hence, promotion. With the recent emphasis on

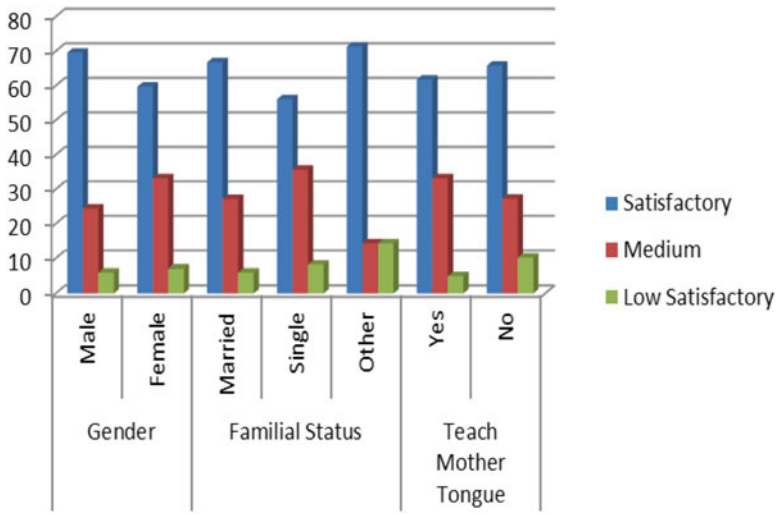

Fig. 4.3 Malaysian academics' job satisfaction based on personal factors (Source: CAP Survey 2007/2008)

key performance indicators in HEIs with regards to publication especially in cited journals it would be reasonable to assume that those who have cultural capital through teaching in English may likely enjoy more access to global circuits of publication and research opportunities which would assure better prospects of promotion (Koo and Pang 2011).

In order to compare the job satisfaction according to the field of teaching, the respondents were clustered into arts or sciences; and professional or non-professional fields. Figure 4.4 shows that academics in the sciences (68.5 %, mean = 2.24) are more satisfied than those from the arts (64.6 %, 2.28); and academics in non-professional fields are more satisfied (68.1 %, 2.23) than their colleagues in professional fields (65.8 %, 2.28). Academics who work at public HEI (65.6 %, 2.26) are more satisfied than their peers in private HEIs (64.1 %, 2.33).

Like most workers in comparable profession, academic perspectives on work roles change over their career trajectories (McInnis 2000; Winter and Sarros 2002). The work of the academic is predominantly framed and shaped by preference, commitments and performance in the three domains of teaching, research and service with primary emphasis placed on teaching and research. Figure 4.5 compares the job satisfaction of four groups of academics according to whether they prefer teaching or research, or combination of both in different degrees. It shows that job satisfaction is highest among those who prefer both teaching and research but leaning towards teaching (66.9 %, mean = 2.26) and those who prefer both but leaning towards research (64.7 %, 2.25). Those who prefer to primarily research have the lowest level of satisfaction (53.0 %, 2.85).

Table 4.8 shows the results of non-parametric tests of four international dimensions on job satisfaction as the dependent variable. The four independent variables

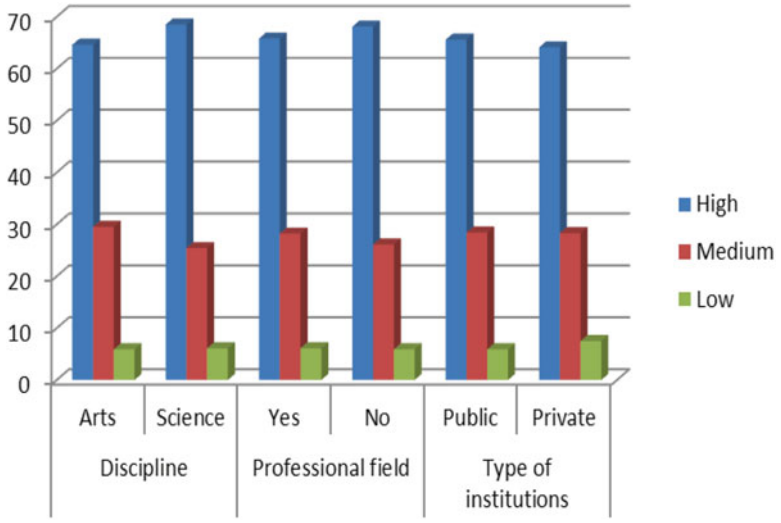

Fig. 4.4 Malaysian academics' job satisfaction based on work situation (Source: CAP Survey 2007/2008)

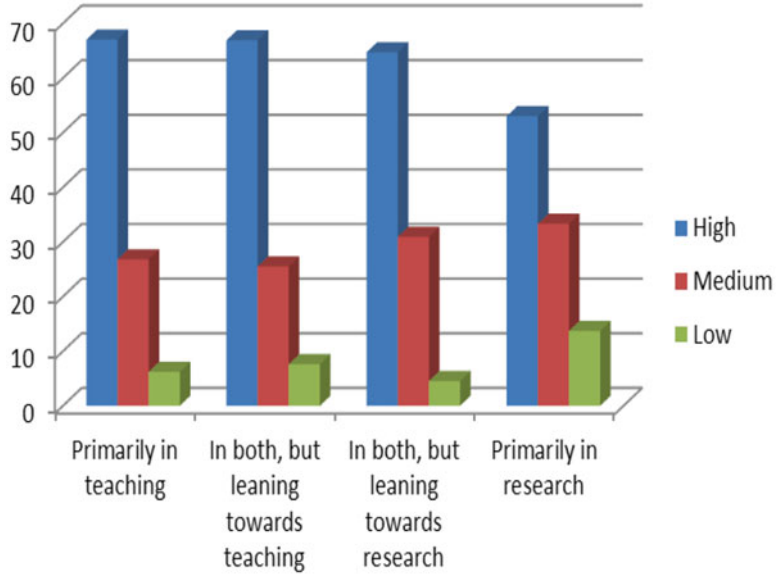

Fig. 4.5 Malaysian academics' teaching/research preference and job satisfaction (Source: CAP Survey 2007/2008)

Table 4.8 Malaysian academics' differences in job satisfaction by aspects of internationalisation

Independent variable	Dependent variable	Test	Sig.
Research collaboration with international colleagues	Overall satisfaction with current job	Independent-samples Mann-Whitney U Test	0.629
Research which is international in scope or orientation	Overall satisfaction with current job	Related-samples Wilcoxon Signed Rank Test	0.001
Publication co-authored with colleagues located in foreign countries	Overall satisfaction with current job	Related-samples Wilcoxon Signed Rank Test	0.001
Publications published in a foreign country	Overall satisfaction with current job	Related-samples Wilcoxon Signed Rank Test	0.001

Source: CAP Survey 2007/2008

are research collaboration with international colleagues, research which is international in scope or orientation, publication co-authored with colleagues located in foreign countries, and publications published in a foreign country. The test results show that there is no difference in job satisfaction between those whose research are international and their colleagues whose research are not international ($p=0.629$). However, job satisfaction is found to be higher among those whose research is international in scope or orientation than those whose research is local based ($p=0.001$). Academics who co-author with colleagues located in foreign countries have higher levels of satisfaction compared to those who only work with their local colleagues ($p=0.001$). Similarly those who publish in a foreign country are more satisfied than those who publish locally ($p=0.001$).

4.7 Discussion

The results of the demographic section provide a profile of the academic in Malaysian HEIs. Generally, Malaysian academics are permanently employed with almost an equal distribution of males and females. They are mostly early career academics as less than one tenth of them is at the professor rank. As with the actual profile of academic staff in Malaysia, the Malaysian CAP sample indicate a relatively bottom heavy structure in terms of academic rank. The results are similar to those in Germany, Finland, Netherlands, and Spain where the professoriate status is limited to 10 % or less of the total academic population and accordingly, where the professoriate can be expected to be more selective (Pedro 2009).

We found that the in total sample of the academics who participated in the CAP survey, a clear majority were fulltime academic staff of Malay ethnicity. The academic sample can be largely characterized as early career faculty members. The average age of the Malaysian academics is 40 years a relatively young group as compared to those from countries such as Japan, Russia and Israel. Only one third of the academics have a doctoral degree. Many of them earn their first degrees in

Malaysia but the majority of those with doctoral degree earned it from overseas institutions. Majority of the sampled academics use English as the language of instruction and language of research. It is estimated that in 5–10 years, given the bottom heavy structure of the profession and that the difference in the average age of professor and lecturer is 17 years, the Malaysian higher education system will begin to suffer the consequences of the academic generation gap.

Academics in public HEIs have a comparatively higher workload for research across all ranks as compared to private HEIs. This trend is not surprising in view of the major differences in the general roles of HEIs according to institutional type: public HEIs to serve the people and to contribute to national development and private HEIs to generate income for the main stakeholders (Wan 2007). However, it is interesting to note that more academics in private HEIs prefer to embark on research work on top of their teaching duties. Since 'preference' is in the state of mind and is not actual, it probably shows something positive, that reflects the mindset among the private HEI academics that they should have done more research but the circumstances do not allow them to do so. Further, employers in private HEIs would expect their staff to teach more in line with the demand from their students whereas their academic staff may for self-actualization purposes prefer to undertake research so as to keep actively engaged with the academic community in their disciplines of study.

Job satisfaction is found to be higher among academics who serve in public HEIs. This is may be related to job security and the perceived prestige accorded to those in the public service. Academics who are globally networked tend to be more satisfied due perhaps to intrinsic rewards such as social connections and extrinsic rewards such as promotion, visibility, and publication in line with the increasing emphasis on internationalisation. The dominant discourse of recognition including promotion systems in Malaysia as in other developed nations are moving rapidly towards the privileging of publications in high impact journals a pursuit which is closely linked to global centres of research and publications especially those located in developed HE systems which are principally Anglo-US centric. One may call into question the values of the HE systems including notions of what service to the local community means. Such contestations seems to be losing ground in the face of the chase 'to the top' in terms of the ranking game.

Data on the gender structure of the professoriate indicate that a small minority of women advanced to the highest rank. The rank distribution of women's position in Malaysian academia is remarkably similar to those in advanced HE systems where women are less likely to climb up the academic career ladder and hold a professorial position. Female academic staff here account for a much higher proportion than female staff in Germany, Netherlands, United Kingdom (Pedro 2009). Glass ceilings and male dominated cultures has indeed influenced and shaped women's careers in academia. The existence of a glass ceiling is reflected in the fact that only a small number of women reach the top of the academic hierarchy.

Why do women advance less than men? There are many possible explanations for the decreasing percentage of women at the higher ranks. The first and probably the most influential is age since the massive entrance of women into ranks of

academic staff has been a relatively recent phenomenon – in the last 10 years. Consequently, the average age of female academic staff is considered lower than that of the men. Secondly, women tend to publish less than men although research has found that the probability of attaining rank is influenced more strongly by gender than by publications (Toren and Moore 1998; De Weert 2000; Winslow 2010). In other words, even if women would publish as much as men, their probability of advancement would have been lower than men's. Thirdly, the self-selection of women avoiding the most competitive world at the top of the academic career is also a likely reason. Whatever the reasons are, it is quite clear that greater efforts must be made to encourage the recruitment and retention of women in higher ranks so as not to waste talents and more importantly, to ensure representation and diversity of Malaysia's communities.

Nevertheless, although women are underrepresented in the higher ranks, the situation is changing fast as their share is steadily increasing following the pattern in post-secondary education where they are now the majority (Zalizan et al. 2013). The overall gender distribution is getting closer to that of the student population. Since there are presently more females than male students in Malaysian universities, the fairer representation of women among the academic staff is likely in the near future. This is certainly a consequence of the dramatic increase in the participation of women in the Malaysian labor force as young women find it possible to combine a career and motherhood. The provision of more favourable employment terms and conditions for women by the government, including the increase in the length of maternity leave from 42 to 90 days, will further accelerate this positive trend.

The national CAP study found that the faculty members throughout the Malaysian public HEIs are still largely Malays. The lack of ethnic diversity and representation among faculty in Malaysia should be a serious cause of concern. Diverse ethnic representations is as important as the representation of gender, age, disability, belief, nationality, and so on. Indeed, an equitable HE system would ensure that academics assume significant roles in representing cultural diversity of the country. This issue may be resolved if the government walks the talk to effect the national reconciliation exercise formulated as an aftermath of the thirteenth general elections in 2013. In fact, ascertaining cultural diversity will help enhance social cohesion which is increasingly seen to be a major challenge for Malaysia. Social cohesion is often viewed 'an attribute of societies' which implies equality of opportunity so that people can exercise their fundamental rights and ensure their welfare, without discrimination of any kind and in response to diversity (FIIAPP 2011, p. 8).

Another fundamental challenge facing Malaysian universities relates to the recruitment, promotion and retention of talented individuals from diverse cultural backgrounds as faculty members. Rapidly changing academic and labor force scenarios make it difficult to attract the best and the brightest to academic careers. In addition, identifying factors that matter most in the selection and promotion of faculty has also become more challenging (Azman 2012). The problem of recruiting talented staff is more acute in the new universities located in the sub regions, provinces or states that are not within the big cities such as Kuala Lumpur, Penang and Johor Baru.

4.8 Concluding Remarks

The development and success of higher education in Malaysia depends on the effective implementation of the Higher Education Strategic Plan 2020 and Beyond (MOHE 2007) and the shorter term action plans (MOHE 2011b, c). More recently, the Malaysia Education Blueprint 2013–2025 *(Pelan Pembangunan Pendidikan Malaysia)* (PPPM) (MOE 2012) has been launched by the minister of the newly merged Ministry of Education (MOE) (which covers higher education and school sectors) who is also the Deputy Prime Minister. To ensure the success of these important plans, the academics who are one of the main actors of the HE system need to be empowered. Issues raised and challenges discussed in the previous section need to be confronted.

The Malaysian CAP 2007 team has been expanded to include a bigger and more representative team and has conducted the Malaysian Academic Profession Study in 2011 (MAP 2011) to capture the nature and extend of change during the 2007–2011 period. The MAP 2011 study involves a wider scope of study and a larger number of samples. Findings and recommendations have been formulated and presented to the policy makers. It is hoped that the discussions in this chapter, together with the recommendations of MAP 2011 will translate into firm actions to enhance the attractiveness of the academic profession which doubtless will strengthen Malaysia's HE system.

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Chapter 5
The Mexican Academic Profession Between Centuries: Who are the Actors?

Manuel Gil-Antón, Laura E. Padilla-González, and Jesús F. Galaz-Fontes

5.1 Introduction

There is no doubt that our culture continues to be marked by the old dichotomy already pointed out in early Greek philosophy: the tension between change and permanence. Heraclitus contended that change was the axis in the possibility of the being, while Parmenides placed the emphasis on stability, on permanence, the root where the perfection of being and the horizon of its knowledge can be relied on.

It is true that no one throws himself twice into the same river, as the waters have varied and, in addition, neither he who jumps is identical to the one who previously jumped; but right is he, who in face of this dilemma, notices that, nevertheless, the watercourse remains and despite acknowledging that he is different when immersing, remembers to continue being, and is, somehow, the same person who did it before: he recognizes himself. Therefore, that which varies and remains becomes tied, intertwined. If this were not the case, it would be impossible to account for transformations.

The reshaping of the academic profession in Mexico -after the intricate process of its genesis, followed by several periods in its evolution until reaching its current situation- is visible insofar as the previous 'figure' has varied, but, at the same time,

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because features of the previous form are maintained. Moreover, these aspects would not be fully understood without being aware of the social and institutional contexts in which they have occurred.

Perhaps an image can synthesize the above: a man, or a woman takes in his/her hands the portrait that was made of him/her a couple of decades ago. Starting today, already in the second decade of the twenty-first century, he/she sees, observes, pays attention to the figure captured at the beginning of the 1990s of the past century. He/she knows it is he/she, but that he/she has changed. Facing the mirror, he/she notices the change: there are clear signs of the impact of time that never comes on its own, but accompanied by new circumstances. He/she is not radically another person, for he/she would not be able to recognize himself/herself. What remains is the foundation on which the capacity to notice change rests.

There are changes that correspond to the expected evolution; others stand out, as they are the imprint of undergone accidents, and other features ensue the inevitable impact of changes in the context of a life lived. The face is different, but not completely. It has been transformed without stop whilst being named as before.

The profession, the academic function, has changed and, somehow, the modifications impact on, and happen because of the personal characteristics of those who compose it and who fulfill the tasks of the profession. A small but important set of such personal characteristics constitute the subject matter of this chapter.

Making an effort to keep some distance from our own experience in the processes will be describing, we will guide our exploration of the selected personal characteristics of Mexican academics by contrasting two portraits, two images. On the one hand a picture that was sketched at the beginning of the last decade of the past century and, on the other, the features that are currently observed in the group of those who belong to the 'profession of professions,' as Clark (1987) adequately refers to it.

After this brief introduction, in the second section of the chapter we contrast four core personal characteristics based on two professoriate's photographs (1992 and 2007). The selected aspects to analyze are central to the vitality and dynamics related to the academic work. The first two are female participation rate in the academic body, and age. The third aspect to consider is the acute modification in the levels of study that has happened between centuries. Finally, the fourth aspect is parents' educational attainment of Mexican academics, a dimension that there are reasons to assume can have a significant impact on several important dimensions of the profession (highest degree, discipline, etc.). All four aspects will be treated, at this moment, from a general perspective, although some remarks will be made in relation to how these characteristics are related to discipline and the type of institution in which academics work.

Having presented two pictures of Mexican academics in which change and permanence can be detected in their personal characteristics, the question of why such is the case presents itself. In an effort to answer such question we describe in section three the periods along which recent Mexican higher education can be studied, and that underlie the way we look into the academic profession. Afterwards, in sections four and five we describe gender and age in the context of such periods. Then, in

section six highest degree is discussed in terms of the periods already used and, in the case of this variable, in terms of gender as well. In section seven the educational background of academics' parents is discussed, again, in terms of the periods in which the recent developments of Mexican higher education can be organized. Finally, the chapter ends with a concluding remarks section in which we summarize what we know thus far in relation to the academics' traits described in this chapter.

It is important to be aware that all of the data and analysis presented will be carried out only considering those academics who hold full-time positions. This condition, in Mexico, is met by just one third of the total academic body, which added up, by 2007, to around 93,000 individuals.

5.2 Different Times and Diverse Contexts

Using the analogy of a big theatre, there are many actors on the stage of the academic life; each time more. Which basic features characterize them as a whole or distinguish them? Who are they now as compared to those portrayed at the beginning of the last decade of the past century, knowing that many of the current ones were in the previous photo, but that there are also new faces now?[1]

Table 5.1, as an initial portrait, enables us to distinguish four important features of the personal characteristics of full-time Mexican academics, in the two points in time that can be compared (1992 and 2007): the composition by gender, the average age, how they are distributed according to the highest academic degree achieved up to that moment, and parents' educational attainment.

Although not spectacular in the comparisons that Table 5.1 allows, changes have been noteworthy. On the recent photograph there are more women than before, although the main presence of men is maintained: in 1992 women were almost one third (30.9 %), and in 2007 they are slightly more than a third (35.7 %). On the other hand, and in contrast with the previous 1992 portrait, by 2007 a larger number of people comb gray hair and show certain fatigue on the shoulders, notwithstanding that they are accompanied by new male and female colleagues. The average age increases from 40.1 years in 1992, placing itself at almost 50 years old in 2007. The fact that there is an increase of almost 10 years in an interval of 15 years, points out to an academic staff that, to a significant degree, continues working: many are in both photos. These figures speak of a replacement of academics pace that, in turn, is making the ageing of the academic profession in Mexico a most relevant issue.

The feature that stands out and denotes a profound change is the one that refers to the highest degree that had been obtained in 1992 and the one that is reported in

[1] The possibility of carrying out this comparison derives from three studies about academics done in México. With information of samples obtained in 1992, one of them was funded by the Universidad Autónoma Metropolitana, Unidad Azcapotzalco (Gil-Antón et al. 1994) and the other one by the Carnegie Foundation for the Advancement of Teaching (Altbach 1996). The third study was that of The Changing Academic Profession (CAP), carried out in 2007 (Galaz-Fontes et al. 2012).

Table 5.1 Gender, age, highest degree and parents' educational attainment of Mexican full-time academics in 1992 (Carnegie $N_T = 609$, and Traits of Diversity $N_T = 547$) and 2007 (CAP $N_T = 1775$)

	1992			2007		
Gender	*n*		*%*	*n*		*%*
Female	187		30.9	625		35.7
Male	418		69.1	1126		64.3
Total	605		100.0	1751		100.0
	n	*Mean*	*s*	*n*	*Mean*	*s*
Age	599	40.1	7.9	1740	49.9	9.4
Highest degree	*n*		*%*	*n*		*%*
Licensure (up to)	305		50.4	439		24.8
Masters	228		37.7	738		41.7
Doctorate	72		11.9	592		33.5
Total	605		100.0	1769		100.0
Parents' educational attainment[a]	*n*		*%*	*n*		*%*
Both low	213		40.3	634		38.1
Medium (one or both)	148		28.0	536		32.2
High (one or both)	168		31.7	495		29.7
Total	529		100.0	1665		100.0

Sources: for 1992 Carnegie Survey (Gil-Antón 1996), and Traits Survey (Gil-Antón et al. 1994); for 2007 CAP Survey 2007/2008

[a]Educational attainment: Low = no schooling up to elementary school; Medium = secondary, high and normal school, technician; high = higher education, including graduate studies

2007: from being a group of academics comprised by half of them without graduate studies (50.4 % in 1992), in the recent picture three-fourths already have such level of studies (75.2 % in 2007). In just 15 years, male and female colleagues with a doctorate were multiplied by 3 percentage wise (from 11.9 % in 1992 to 33.5 % in 2007). Does this change in the morphology of the profession, which actually represents a late adaptation of an international trend, derives exclusively from the entrance of new members with more female participation holding at the same time, more graduate degrees? Or, is it a combination, regarding the formative profile, of the above and the concomitant process of the attainment, by those academics already hired, of a graduate degree while they carried out their work or through special licenses to do advanced studies? In other words, how do two convergent processes (the fostering of advanced education of the old academics who entered in large amount carrying under the arm only the licensure degree or not even that, and the increase in the educational attainment of new academics as they obtain their first full-time position) interact in order to produce this sensible change in academics' highest degree?

The changes related to parents' educational attainment are not big, and this is most possibly associated with demographics trends in overall Mexican population, as well as to the main traits of our educational system. Altogether, nearly one third of Mexican academics proceed from a family in which both their parents have had

access to higher education (31.7 % in 1992; 29.7 % in 2007), a proportion that is very similar to the enrolment rate in postsecondary education in the country. This fact has, most probably, a significant influence in the faculty ethos, as for example in the perceived value of higher education as well as in the way academic work is performed.

As mentioned previously, the changes described arise from the comparison of two moments (1992 vs. 2007) and, as such, the compared figures might mask underlying dynamics functioning along the 15 year period considered. To account for some of the issues raised above, it is then convenient to analyze the variation (and non-variation) in the full-time academics' profile considered here (gender, age, level of studies with which those members obtained their first full-time appointment, and the educational attainment of academics' parents), distinguishing what happens in different periods of the context provided by the Mexican higher education system. That is, it is necessary to come closer to a diachronic consideration that would make it possible, at least, to observe with finer detail the dynamics of change (or no-change) and, to that extent, would allow us to propose some conjectures that would make the described transformations more comprehensible.

5.3 A Brief Note on the Periods of Recent Higher Education in México

We will use four time-cuts for the analysis of recent change in Mexican higher education over time. They are not equivalent in amount of years since the periodization is an analytic distinction, that is, it tries to define the conditions of the context of each one of them, without which the evolution of the national academic profession cannot be understood.[2]

The first one, which goes up to 1982, covers the phases of moderated expansion (the sixties) and the accelerated expansion (the 1970s and beginning of the 1980s) of higher education, as indexed by an unprecedented growth of higher education institutions, student enrollment and the multiplication of positions for academic work in Mexico. In this period, the extent of faculty positions available to assist the growth of new student groups, which reflected the passing from an 'elite' to a 'massified' higher education system, was larger than the amount of people willing to fulfill those positions and who already had higher education studies, or who had even concluded them, at the undergraduate level. It was urgent to attend a growing student demand, unprecedented in the history of the country and, since the expansion was reactive -without profound academic planning (Metzger 1987) and oriented instead by political intentions aimed at renewing the pact with the middle classes (Fuentes-Molinar 1989)- the hiring process of new professors as part of the academic body in the country was carried out among a large group of young people

[2] For a more detailed description of the periods mentioned here consult Gil-Antón 2012.

who had not been aware of the academic profession as a previous job expectation: for the vast majority of those who became professors in those years, becoming an academic was an 'unexpected opportunity' (Pérez-Franco 1992).

The second period, which comprises from 1983 to 1990, is characterized by a slowdown in the speed of enrollment growth, with the consequent decrease in the demand for new academics. This period derived from a very severe economic crisis that struck Mexico. Since 1982, and until the end of the decade, as an example of such crisis, the purchasing power of academic salaries dropped on average 60 %, and the distance between the different categories and levels of the hierarchical structure, regarding its payments, compressed. Before the crisis, the difference in income between the highest category (full professor, level C) and the lowest and usually the initial one (assistant professor, level A), was three times higher; at the end of the decade, it had fallen to less than double, a situation worsened by a big damage in the purchasing power of the Mexican peso (Ibarra-Colado and Rondero-López 2005). In that period, the key question and challenge was how to retain academics with such low salaries, without having the necessary financial resources or the political will -due to the changes in the notion of the State's tasks in those years- to work towards a generalized salary recovery.

The third period, which goes from 1991 to 1998, is characterized by the gradual, but unceasing, start of an academic salary recovery policy through 'conditioned monetary transfers' (Villatoro 2005),[3] that is, providing additional income to those academics who agreed to be evaluated in order to validate that they comply with the conditions stipulated by a diversity of programs. This peculiar form of merit-pay, was a way out of the crisis of the previous period and sought to take care of two issues at once: on the one hand, income recovery for a reduced number of full-time academics through a non-salary channel and, on the other hand, the assignment of additional resources based on the presence of certain characteristics such as graduate education, productivity, and the development of academic functions, research and management, that were no longer those that corresponded to attending student demand through teaching as its axis (Galaz-Fontes and Gil-Antón 2013).

The fourth period, which goes from 1999 to 2007 and continues up to this date, emphasizes the previous strategy and strengthens it. At a national level, a single model of full-time academic was established as the one all higher education institutions should adopt. Compliance with such a model pretended to be the solution to the already mentioned drop in income, by those days already stabilized, but turned out to generate a very severe academic stratification between those having the credentials and conditions to fulfill the established requirements, and those who did not.

[3] The first program of 'conditioned monetary transfers' carried out in Mexico for a small sector of the academic body was, in 1984, the National Researchers' System (SNI by its initials in Spanish), which was conceived to provide additional income, non salary-based, to the subgroup of researchers who were positively evaluated by commissions established for such purpose. Other programs gave continuity, along the same logic, to the general perspective embedded in the SNI program, including research exigencies, performing other academic tasks than teaching and institutional participation, in addition to holding a graduate academic degree (Urbano-Vidales et al. 2006).

The reshaping of the academic profession can be associated, of course, to the normal evolution of a profession that is centered on knowledge transmission and generation (Clark 1987), but also, and not in a lesser extent as we shall try to show here, to the fact that the changes in the depicted periods are intense, with diverse reactions to the public policies targeted at the regulation of the academic profession, including the characteristics that are imposed as the adequate ones to be part of this professional group. We will use these four time-cuts to analyze change among Mexican academics in relation to their first full-time appointment. Let us look now more closely, in the context of the described periods, to the dimensions paid attention to in the first part: feminization, age, highest degree, and parents' educational attainment. Given space limitations, however, we will no be able to pay a great deal of attention to variations, important as they are, along discipline and institutional lines.

5.4 Gender: A Glass Ceiling for Women or the Return of Men?

The participation of women in the group of people who work full-time in higher education in Mexico increased, as we already saw, going from 30.9 % in 1992 to 35.7 % in 2007.

The change is not very large: to be exact, 4.8 additional points are those that female academics increase after three lustrums. A solid gender approach cannot end in the modification of the percentages between two points in time, neither it is sufficient to make a pronunciation regarding the speed and degree of feminization of the Mexican academic body, as an indicator of the reduction in the inequality of opportunities in the access to positions. A stronger analysis requires information regarding the gender of the group of applicants in any given interval, as that information would allow us to observe if there is, or is not, a systematic bias in favor of males in some or more of the periods we are reporting on. We do not have that information, but the analysis of those academics that were hired as full-time academics in each of our established periods, enables us to propose a series of conjectures regarding the evolution of the gender composition of Mexican academics, as such an strategy enables us, with limitations, to study change along a temporal dimension.

Figure 5.1 shows an interesting behavior of female participation as academics in Mexico. Both between the first (up to 1982) and the second period (1983–1990), as well as between the second and the third one (1991–1998), the percentage of females among those academics obtaining their first full-time appointment was increasing and very systematically: it gained, in relation to the previous one, 8.3 points in the second, and 7.4 in the third period. If a similar trend had continued (let us assume an additional 8 percentual points), half of the new full-time academics in the fourth period (1999–2007) would had be women. However, as we can see, the percentage stagnates and even decreases a little to 40.7 %. What happened? How can the stagnation of female participation in the hiring of new full-time academics during the 1999–2007 period be explained?

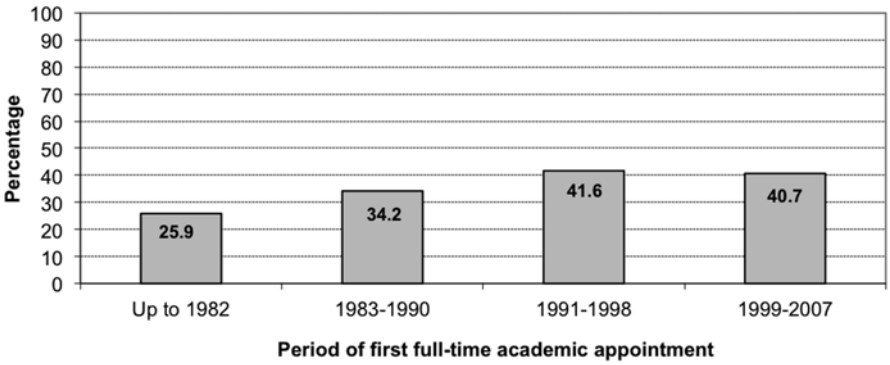

Fig. 5.1 Percentage of females among Mexican academics by period of first full-time academic appointment (Source: CAP Survey 2007/2008)

Certainly, the plateau created between the third and the fourth periods impacts on the gender composition of the 2007 sample; if the previous trend had continued, the entire national full-time academic body in 2007 would comprise, at the least, 42 % of women and not the 35.7 % registered. Has a 'crystal ceiling' (a limit in the participation of women) been reached? If such is the case, what are the factors most strongly associated with such a dynamic. Several explanations are possible.

One first possibility is that the limit in the participation of women derives from some restrictions related to different rhythms of growth in the disciplines or as a consequence of limitations associated with type of institution. As it would be natural to expect, women participation rate varied by disciplinary field and type of institution. For instance, in social and behavioral sciences, as well as in business and administration, academic women represented about 43.0 %, as compared to 35.7 % in the whole 2007 sample. In addition, female representation in first full-time appointments during the last period in these academic fields was close to 47 %, as compared to 40.7 % in the 2007 sample. On the contrary, academic women in engineering, manufacturing and construction represented only 20.3 % of total academics in this field, even though the percentage in first full-time appointments during the last period was 28.0 %. The lowest percentage of female faculty (29.1 %) was observed in public research centers, while the highest percentages were identified in federal public institutions (38.7 %) as well as in private institutions (39.7 %). It should be noted that the percentage of women faculty in first full-time appointments diminished in research centers and federal public institutions from the third (1991–1998) to the fourth period (1999–2007), passing from 30.0 % to 25.9 %, and from 47.6 to 45.2 %, respectively, whereas this percentage rose in private institutions, from 41.1 to 47.8 %. The above facts concerning women representation in STEM disciplines as well as in research institutions, which appear to be an important factor in explaining the leveling of female participation among first-time full-time academics, constitute an unresolved dilemma in the context of higher education worldwide (Xu 2008).

A second possibility for explaining the 'crystal ceiling' effect is that the stagnation in the entrance of women to the academic profession (attainment of first full-time appointment) is due to the return of men, once the academic job market has recovered the income and prestige it provides or, more over, now that external working positions are scarce and employment in the academic field becomes, once again, an option for men, thus bringing back the impact of 'gender privilege' on the hiring process, something that would be noticeable during the entrance, for the first time, into full-time positions. This potential explanation would lead us to conclude that there is a very strong gender inequality: it would mean that the growth of female participation in the profession (being hired for the first time as a full-time academic) could somehow be explained by the relative abandonment by men of this job market, as they lowered their successful participation in the entrance processes for a first-time academic position (from 74.1 % up to 1982, to 65.8 % in the period 1983–1990, and to 58.4 % in 1991–1998). On the other hand, its most recent leveling, that of female participation, would be due to the fact that men have turned their attention back to the academic job market (59.3 % of all first-hired full-time academics in 1999–2007 were men). To what extent, then, is faculty feminization an opportunity that opens when men withdraw during some years from this job market, and then stagnates or decreases when it becomes attractive to them again? Presented in this way, the possible explanation is radical, and although certainly more factors intervene in this process, it is not totally mistaken to include, as part of our explanation of the 'crystal ceiling' in the feminization of the Mexican academic body, this variation of the participation of men according to the attractiveness of the positions in the academic profession.

A third potential explanation has to do with some research that suggests that women, once they have earned a master's or a doctoral degree, do not pursue an academic career, but rather choose a different professional path. It seems that either some of these women do not perceive an academic career as attractive as other job options, which is a matter of personal choice, or there are barriers difficult to overcome for them in entering into the academic profession, which might be related to cultural aspects (Metcalfe and Padilla-Gonzalez 2013). For instance, this decision may be influenced by traditional roles that women play in relation to marriage, motherhood and family duties, such as caring for children and ageing family members (Wolf-Wendel and Ward 2006). In order to balance family and career, these highly trained women will prefer part-time or non-tenure track faculty appointments, which are the least secure, although lower paid (Sax et al. 2002; Schoening 2009).

Furthermore, since now a doctorate degree is the minimum certificate for entering into an academic career, this fact can influence the changes observed, considering that women do not have it or do not enroll at this level to the same extent as men. Official sources, such as ANUIES yearbooks (2010) show that women are a majority in relation to master degree students, but not so at the doctorate level, even though the percentage of women at this level was 42.0, which is higher than the percentage of full-time female faculty in the country. In addition, it is important to take into account that in order to obtain an academic position during the last period (1999–2007), in many cases a master's degree was required, while the doctorate

degree was just recommended. A similar situation has been found in countries such as Canada and the USA (Metcalfe and Padilla-Gonzalez 2013).

More thorough studies, with other type of data and data collection techniques could solve several unknowns about the weight of some aspects that might contribute to the phenomenon under consideration. Additionally, the variability by type of institution, discipline, and predominant academic function to be performed should be considered in more detail. Studies along these lines are pending, but the stagnation of the proportional presence of women in the academic profession is clear… and worrisome.

5.5 An Aging Academic Profession

In section one of the this chapter we pointed out that Mexican academics were on average 10 years older in 2007 than 15 years earlier; average age rose from about 40 to almost 50 years. In explaining this general issue, demographics factors should be taken into account, such as those associated to retirement patterns. In addition to the previous factors, it is essential to consider the availability of new faculty positions and the requirements that academics have to fulfill in order to occupy them (most prominently academic degrees), the average age of doctorate earners, and faculty attrition rates, among others.

In order to have a more detailed image of the way in which the age of Mexican academics has evolved during the last five decades, Fig. 5.2 presents the gradual increase on academics' average age at the moment of obtaining their first full-time appointment, according to the established periods of recent Mexican higher education development.

As when comparing academics in 1992 and 2007, in Fig. 5.2 we can also appreciate a 10 years difference between those faculty first hired as full-time academics in the period of up-to-1982 (27.5 years), and those hired during the 1999–2007 period (37.0 years). The corresponding figures were 29.7 years in the second period and 33.8 years in the third period. While the delay in retirement, few academic positions and an increasing demand of graduate studies all tend to increase the age at which academics are first hired in full-time positions, the systematically increasing trend in age that we see in Fig. 5.2 is very likely associated with the change in the hiring requirements brought about by the implementation of public policies aimed at increasing the academic credentials of full-time academics working in public institutions (Urbano-Vidales et al. 2006), as it happens in countries with developed higher education systems.

The evolution of this trait, however, is not general to all academics. As it would be expected, academics in different disciplines present different career trajectories in reaching the doctorate or the highest degree offered in its discipline. So, during the fourth period (1999–2008) the lowest average age at the first full-time position was observed in life and physical sciences (34.7 years) as well as in research centers (33.9) and private institutions (32.0 years), whereas academics in the business and

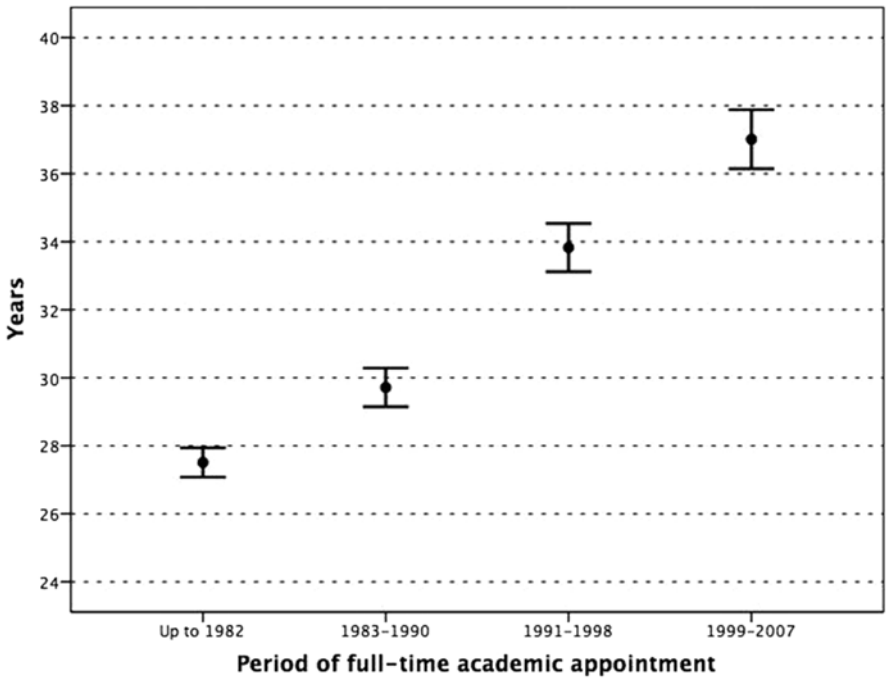

Fig. 5.2 Average age (and corresponding 95 % CI) in first full-time appointment among Mexican academics (Source: CAP Survey 2007/2008)

administration fields presented one of the highest average age (41.7 years) when they were first hired in a full-time position. If one considers that many of these academics might be coming from working professionally outside academic institutions, these figures seem quite reasonable.

The pace of the above ageing process for Mexican faculty is expected to continue in much the same way in the near future, as older academics may delay their retirement due, on the first place, to institutional and economic conditions involved in this decision and, secondly, to a low availability of new full-time positions. More research is needed in order to fully understand this phenomenon and to generate strategies to deal with it, such as maintaining the vitality of older academics who wish or need to remain working, among others.

5.6 The Variation of Educational Levels: Re-engineering or Renovation?

Table 5.1 allows us to compare data from 1992 and 2007 in relation to the highest academic degrees hold by full-time academics. As it can be observed, at the beginning of the decade of the 1990s 50.4 % of them only held a licensure degree, while 15 years

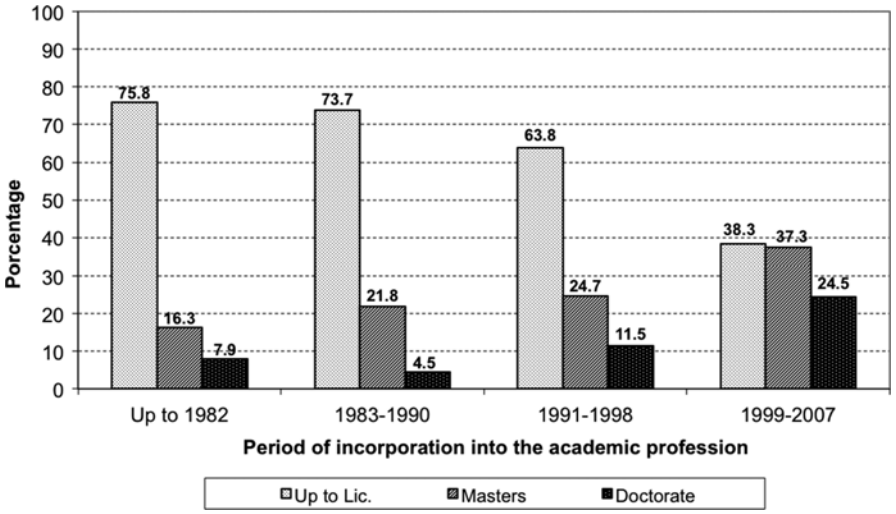

Fig. 5.3 Highest degree of Mexican academics in first full-time appointment (Source: CAP Survey 2007/2008)

later this percentage had been reduced to a half (24.8 %). It is also something to observe that of the 38 out of each hundred that held a master's degree in 1992, the number goes up to 42 out of each hundred in 2007. However, the most significant change occurred in relation to those academics who held a doctorate degree: they went from being 11.9 % of all academics surveyed, to 33.5 %. The 1992 percentage almost multiplies itself by three by 2007.

The contrast is clear: the possession of a licensure degree as the highest degree plummets; colleagues with a master's degree increase, but almost all the weight that the undergraduate level loses is gained by the doctorate level. Although the average age of the faculty in 2007 indicates broadly that the recruitment of young people has not been the only source of new doctorates (because in their case the average age would be lesser) in the new configuration of the academic body in the country, it is necessary to elucidate if the intense modification in the current degrees corresponds mainly to the impact of new entrants to the profession with doctoral studies already finished, or at least with graduate ones, or to the 're-engineering' process by which the attainment of graduate degrees for a large part of the former in-service academic body, was promoted. To do this, a look at the levels of education of those who entered into the academic profession by period enables us to open lines of analysis on this variation (see Fig. 5.3).

As it can be observed in Fig. 5.3, during the first two periods, that is, before 1991, when still no federal policies emphasizing graduate education among academics were in place, the proportions of new faculty with different highest degrees are very similar, and it stands out that three out of each four positions (85.8 % for up-to-1982, and 73.7 % for 1983–1990) continued to be granted to academics having obtained only a licensure degree. The influence of the policies established during

the following periods are clearly visualized, since the faculty members who entered the profession just with a licensure degree decreased almost by half in the last period (38.3 % in 1999–2007, coming from 63.8 % in 1991–1998), while those who entered already holding a doctorate degree multiplied by five (from 4.5 % in 1983–1990 to 11.5 % in 1991–1998, and finally to 24.5 % in 1999–2007).

As we approach current times, the proportion of those who were granted a full-time academic position for the first time with only a licensure degree decreases, in a more pronounced way between the third and the fourth time-cut, although it does not disappear as would be expected according to the hiring policies (still 38.3 % in 1999–2007). People holding master's degrees become systematically larger in number: there is growth among all periods, but the increase has a greater slope between the third and the fourth (a difference of 12.6 percentual points). There is, then, an inverse movement: the percentage that began their academic career with the minimum degree decreases, while the ones with a master's degree increases. The fall of the first and the rise of the second one are emphasized between the decades that signal the end of the twentieth century and the beginning of the twenty-first century. In the case of the doctorate degree we observe a different movement: first it decreases (from 7.9 % in up-to-1982 to 4.5 % in 1983–1990) but, considering the third and later periods, it can be observed that it is radically modified upwards, as it increases a little more than its multiplication by five (to 11.5 % in 1991–1998, and then to 24.5 % in 1999–2007).

There are, then, reasons to claim that a part of the increase of the doctorate as the highest degree in the current full-time academics group in the country is due to the gradual entrance of more academics with a doctoral degree as an initial feature in their career. However, for it to be the sole factor and even the most relevant in the explanation of the change between 1992 and 2007, the moment in which 75 % of the academic body had earned a graduate degree, it would have been necessary that almost all of the new members in the last periods held that degree. However, in each interval considered there were new academics with still only a licensure degree. So, although the increase of doctorates as recent hires is most relevant, during the first years of the twenty-first century more than one third of them – almost four out of each 10 – had joined the guild having only a licensure degree, and another similar proportion a master's degree.

Therefore, the distribution by academic degree that is observed in 2007 is a combination of both modifications in the degrees through time of the personnel who started their careers (obtained their first full-time academic appointment) without having obtained their doctorate, and the entrance of people who initiate their career already with that certificate. There has been a considerable amount of 're-engineering' in order to change academics' level of studies along the way.

These outstanding modifications in the composition of the academic body could not be understood without considering a public policy, a particular program, with two components: on the one hand, starting on 1989 education authorities at the national level decided to support the attainment of graduate degrees in the in-service academic body at that time. This policy gained more strength in 1996 with the creation of the Program for the Improvement of the Professoriate (PROMEP) whose

main objective was aimed at achieving a situation where most of the academic personnel would fulfill two characteristics: a full-time contract and a doctoral degree (or at least a master's degree) in a term of 10 years.[4] On the other hand, besides the financial aid to support paid leave of absence of faculty members in pursuing their graduate studies, the program placed a very strong incentive for its achievement: the doctoral degree became the key for academics to be able to obtain more resources -monthly incomes through scholarships or diverse ways of merit-pay, as noted above- as well as for receiving grants to carry out research. The 're-engineering' procedure was opened with 'generosity' and was implemented not only in disciplines that had, as part of their ethos, the way to ascend in the academic ladder through classic graduate degrees, but it also included professional fields that in the past were considered prestigious due to their professional work outside universities, as in the case of engineering, architecture, or law (Galaz-Fontes and Gil-Antón 2013; Urbano-Vidales et al. 2006).

The data by academic field makes it possible to observe both the strength of the policy that promoted the doctoral degree for all academics, but also the relevance of the disciplines in which academics work. It is argued in this chapter that academics from life and physical sciences, mathematics, social sciences, and humanities already had a tendency to obtain classic graduate degrees. In the 2007 sample we observe how the program fostering the doctorate degree has contributed to the growth of a trend that was already clear: for life and physical sciences, the change regarding the doctoral degree rose from 23.5 % (the highest in 1992) to 62.4 %; in social sciences, from 13.4 to 42.5 %, and in humanities from 13.2 to 30.8 %. On the contrary, in agricultural sciences and related disciplines there was no doctorate in 1992, but in 2007 the percentage was 34.3 %. This is a very big leap. The same happened in engineering (from 4.4 % in 1992 to 27.4 % in 2007) and in administrative sciences, where the biggest leap can be observed at the master's degree level (from 32.1 % in 1992 to 62.9 % in 2007).

As it can be observed, even in the last period (1999–2007) there were contracts granted with only a licensure degree; moreover, just 24.5 % of first full-time appointments were granted to Ph.D. holders. This percentage presented significant variation across type of institutions. For instance, it rose to 84.6 in public research centers, while it decreased to 17.9 % in public state institutions, and to 9.1 % in public technological institutions. These figures speak, in addition to the discipline factor, to the relevance of the type of institution in which academics work.

It cannot be firmly sustained based on the most recent sample, but it is not mistaken to mention, as a conjecture, that since in Mexico the larger enrollment is located in medicine, administration, and law, such programs require the hiring of professionals with broad experience in the application of knowledge on job markets external to academe, where professional practice allows, with only a licensure degree, the acquisition of expertise on the application of the know-how in those areas.

[4] By no means in 2006 all academics held a full-time appointment. It is not until recently that around one third of all academics hold such type of position. On the other hand, currently a large proportion of all full-time academics hold now a graduate degree, but mostly not a doctorate (Gil-Antón 2000).

For higher education institutions devoted largely to teaching it is therefore unavoidable to hire as academics such type of practitioners, as their economic income, and working conditions in the external job market have no comparison (upward) and do not legally require a doctorate to do their job. Somehow, it is likely that a large amount of them are the ones hired with only a licensure degree, since their job at the university does not require higher credentials, particularly if what it is expected of them is to be largely involved in teaching. In other countries such is not the case, as even in such professional fields as law, psychology and education professionals have to have a doctorate or a terminal degree in order to be involved in a professional practice outside the university context.

5.6.1 Academic Degrees and Gender

We have already observed the changes in the highest academic degree reached in the 15 years that separate the 1992 and 2007 portraits of Mexican academics. However, it is important to explore if the distribution of the various certificates is different when controlling by gender.

Let us remember: in 2007 about one quarter of all academics, both male and female, reported that they held a licensure as their highest degree: 42 % reported a master's degree, and 33 % a doctorate. We can observe in Table 5.2 the distribution of this same indicator by gender, with the advantage of being able to compare, even if briefly, these figures against the previous situation.

In 2007 the distribution of highest degree among men is more alike to that of the total -there is a composition effect, that is, their number partly explains the similarity to the values of the whole- (26.1, 38.1, and 35.8 % respectively) but it is interesting that when they are separated from the total (there are 4 % points less in the master, and 3 additional points in the doctorate) there is a convergence in the opposite direction to the distribution of female academics (22, 49, and 29 %). That is, women in the academic profession are concentrated more in the master's degree (7 percentual points more than the total and 11 in comparison to men), and they are less in the doctorate: 4 point less than the total, and 7 in relation to male academics, although in licensure the proportion of men is greater than the total and that of their female colleagues, 3 and 4 percentage points respectively.

A look at the situation in 1992 shows that the distances just described have widened, in such a way that again questions arise regarding the dynamics associated to gender. The clearest of all is the distance between the percentages of female doctorates. Before, in 1992, about a point and a half less than men (10.8 % vs. 12.2 %). Today, it is almost five times greater than before (6.9 percentual points). The increase in the proportion of female academics with a master's degree, on the other hand, is no less considerable, although smaller (from 40 to 49 %): is the 'preference' for a master's degree related to the survival of traditional roles, for example, maternity or caring for children or elderly people at home, which lead to less prolonged studies? Is this degree, the master's degree, more associated with teaching functions than with those of research; is it meaningful in terms of the 'logic' established as natural,

Table 5.2 Gender by highest degree of Mexican full-time faculty in 1992 ($N_T = 609$) and 2007 ($N_T = 1775$)

	1992		2007	
Females	*n*	*%*	*n*	*%*
Licensure (up to)	91	49.2	138	22.1
Masters	74	40.0	305	49.0
Doctorate	20	10.8	180	28.9
Total	185	100.0	623	100.0
Males	*n*	*%*	*n*	*%*
Licensure (up to)	212	51.0	293	26.1
Masters	153	36.8	428	38.1
Doctorate	51	12.2	402	35.8
Total	416	100.0	1123	100.0
Total	*n*	*%*	*n*	*%*
Licensure (up to)	303	50.4	431	24.7
Masters	227	37.8	733	42.0
Doctorate (up to)	71	11.8	582	33.3
Total	601	100.0	1746	100.0

Sources: For 1992 Carnegie Survey (Gil-Antón 1996); for 2007 CAP Survey 2007/2008

being deeply cultural, of teaching being more typical of women, and of research being more natural of men?

As we have mentioned in other cases, it is necessary to do more research on these crucial topics, but there is a clear tendency: the urge for degrees is general, yet the attainment of the doctoral degree -and its benefits derived from the 'conditioned monetary transfers' already summarized- is much greater in the case of men. Between the two photographs, female doctorates go from 11 to 29 %: 18 points more; men with that degree, from 12 to 36 %: 24 percentual points more.

In addition, if we consider all men and women with graduate degrees, a larger proportion of women, compared to men, hold a graduate degree: 78 % versus 74 %. Does this have to do with the predominance of men in the professional areas outside higher education, where it is even more frequent to find licensures? What is being addressed is not trivial. The questions, based on these data, are more precise and point to important inquiry works, since they enlighten our understanding of the reshaping of the profession, but they also speak about the need to compare these cultural changes considering spaces located beyond the academic spheres.

5.7 Pioneers or Heirs? A Contrast Between Two Photographs

Due to the speed of the hiring of new faculty members at the beginning of the expansion period, as well as due to the relative absence of people with higher education in Mexican society back then, it was possible in 1992 to realize that the immense

majority of academics (68.3 %) fit in the classification category of 'pioneers,' in the sense of being part of a family whose parents have no higher education background (see Table 5.1). These persons reached higher education in a double leap: as students and then as part of the academic personnel. By 2007, pioneers represented 70.3 % of all full-time academics.

Because parents' level of education tends to be a constant, finding little variation in the proportions of pioneers can be an indicator, either of a high permanence of the academics in this period, or that the hirings in the most recent periods were also mostly pioneers. So, the small change in the percentages along this dimension in the 2007 data comes mainly from the new hirings.

As with the previous variables discussed in this chapter, it is possible to look at the variation of academics' parents educational attainment across the periods of their first full-time appointment.[5] In this exploration we will consider pioneers and heirs. Pioneers, as it has been stated previously, are those academics who come from parents in which none of them had contact with higher education. The second group includes academics with at least one parent with experience in higher education, and in such case they are named partial heirs. Lastly, those academics who come from couples where both had access to higher education will be labeled as heirs.

In a departure from previous analysis, those academics who obtained their first full-time appointment up to 1970 are differentiated from those who did so between 1971 and 1982. This additional periodization will make it clear that before the accelerated expansion, academics were 'more selected' in terms of their parents' level of education, a tendency that was broken due to the speed of the expansion in the 1970s until the beginning of the 1980s. With these clarifications we can observe Table 5.3.

As it can be observed in Table 5.3, of those academics who entered the profession in the 1999–2007 period, 37.3 % have higher education antecedents on at lease one of his parents' side, and 14 % are heirs, that is, both of their parents had some higher education experience. In the previous periods of incorporation into the academic profession the percentage of academic heirs change, systematically, downwards, except for colleagues who still belong to the current academic body and who entered in the earliest phase considered (up to 1970), previous to the accelerated expansion, in which case, 1 out of 10 was heir considering both parents, and another 40 % was a partial heir (mainly on the father's side).

With that initial look, it is possible to hold the conjecture of a growth of academic heirs and the subsequent reduction of pioneers, systematic through time, except in the case of academics hired up to 1970. It is a fact that nowadays there are considerable more people in higher education in the country in comparison to the decades of the 1970s or 1980s of the twentieth century, but at the same time the amount of new full-time positions available are scarce; so much that -perhaps- the fact of being heir becomes again a characteristic that offers an advantage in a moment in which the market is both shrinking and more competitive, while in periods of vertiginous expansion of positions that situation did not play a role as a relevant variable.

[5] This exercise has been done in a more detailed way by Gil-Antón (2014).

Table 5.3 Parents' education attainment of full-time faculty in 2007 by period of first full-time appointment

Period of first full-time appointment	Pioneers[a]		Partial heirs (a)		Heirs (b)		With higher education antecedents (a + b)		Total	
	n	%	n	%	n	%	n	%*	n	%
Up to 1970	15	37.5	16	40.0	4	10.0	20	50.0	40	2.3
1971–1982	156	39.5	77	19.5	26	6.6	103	26.1	395	22.4
1983–1990	200	45.9	70	16.1	33	7.6	103	23.6	436	24.7
1991–1998	138	32.7	84	19.9	48	11.4	132	31.3	422	23.9
1999–2007	152	32.2	108	22.9	68	14.4	176	37.3	472	26.7
Total	661	37.5	355	20.1	179	10.1	534	30.3	1765	100.0

Source: CAP Survey 2007/2008
Source: Gil-Antón (2014)
[a]Pioneers = Both parents with basic education or less; Partial heirs = At least one parent with access to higher education; Heirs = Both parents with higher education
*The percentage of the total is by column. Horizontal percentages do not add up 100 % since only some of the possible combinations were chosen, the most significant to the analysis of intergenerational variation

If we consider juts the most recent period of entrance in the academic career (1999–2007), it is possible to identify significant differences across academic fields and type of institutions. On one hand, social and health sciences presented the highest percentages of heirs and partial heirs (51.2 % and 38.5 % respectively), while life and physical sciences as well as administrations and business presented the lowest (25.4 % and 23.7 %, respectively). On the other hand, private institutions (56.3 %) and research centers (50.0 %), followed by federal public institutions (43.2 %) comprised the most significant amount of heirs and partial heirs, while public technological institutions (12.1) presented the lowest percentage of them.

There is much more to explore about this, but the seed is promising. This analysis illustrates what we think is needed, in order to know in more detail the 'new academics' that constitute the academic profession in Mexico.

5.8 Concluding Comments: Change and Permanence

What can we say at the end of this chapter in relation to the demographics of Mexican academics? When observing in detail two important features, the feminization rate and the highest degree attained, placing the periods as a general context and, certainly, the change in the age of the academic body, the use of the word 'reconfiguration' -having another figure, another shape- is adequate. In 15 years, female participation as well as educational attainment of faculty members has generated a different structure: more female academics reflected in almost a 5 %

increment, and many more members of the profession with higher academic degrees (from 49.6 % in 1992 to 75.2 % of full-time academics holding a graduate degree in 2007).

However, this reconfiguration does not occur in the void, but it is oriented by changes in the conditions of the context and encouraged by public policies with powerful incentives. In the case of the feminization rate, the slope changes to transform itself into a plateau. Beyond the conjectures proposed, the findings in this transformation open the door to a motivation to carry out specific research in order to answer questions that until now, the aggregated data and the way it has been collected, do not allow.

The increase in the education levels seems the most comprehensible: the number of faculty members with graduate education significantly increased in the country after the period of expansion of higher education, but it leveled off during the eighties, and regained impulse in the two decades that border the new century. It is asserted that such a dynamic took place because an incentive so powerful as money was used to promote the attainment of degrees higher than licensure, to which recognition and prestige are added. Also, generous opportunities were offered for achieving higher degrees while professors were in service. A result of this combination of factors, plus the impact of other financing schemes directed at public institutions, have made that new academics are being required to a greater extent to hold a doctorate degree as a starting condition for a full-time position in almost all areas academic fields. There are more doctorates in disciplinary areas where this was not frequent or even nonexistent, it is true, but higher education institutions continue to hire in many fields professors who hold just a licensure or master degree.

However, there is no public policy, even if commanded by money, able to twist completely the trends already pointed out by the sociology of the universities regarding the ethos in prestige and socialization processes of the tribes within the academic profession (Becher 1989). There is an impact, yes, but resistance leaves a print and it has not been proven, through research, that these features have changed the quality of the practice of the substantive academic functions: teaching and research.

Change, permanence, policy impact, and control; persistence of habits and traditions, crystal ceiling or very hard cement ones, cracks through which paths are being open. Contrary to a structural perspective in which social actors have no margin of action, without stopping to consider the economic, working, and political management of the system environments, this comparative perspective facilitates observing that there is diligence, that there is a margin of action of the subjects and of certain groups: they are not necessarily puppets, although they might be conceived that way. They are actors, and on the stage of the academic profession the roles are conditioned, but not defined. Social life is like that and the academic profession is part of it. It could not be otherwise.

We conclude with a reflection about features that change and others that remain. We began this article by stressing the constant tension that takes place during the evolution of small tribes in the broad territory of the academic profession. Certainly the actors, without fully being ‘others,’ since the permanence rate in the

activity is significant, have changed, and the new members, although relatively few, impact with their distinctive features. At the same time, strengths that oppose the public policy pressures and its incentives are acknowledged.

To sum it all up, change and permanence are generated in that, human beings, far from being epiphenomena of structural and political conditions, or a forever non-modifiable creation, are, in effect, actors: they are active agents, they move, reinterpret policies and adapt them to their institutional and disciplinary conditions. Has the academic profession been reshaped, reconfigured? Up to a certain level, it is unquestionable; in another sense, more research would have to be done to separate the real impact in comparison to the expected indicators and thus come closer to the magnitude of the change. What is evident is that, without being completely so, we are not the same who stepped into the river years ago -although we know where we come from-, neither is the river – the country's circumstances and the development conditions of Mexican academics. Adjustment, adaptation, change, and permanence: human life in a society. It could not be otherwise.

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Chapter 6
The South African Academic Profession: Personal Characteristics, Career Trajectories, Identities and Sense of Commitment

Charl C. Wolhuter, Philip Higgs, and Leonie G. Higgs

6.1 Introduction

The scientific study of higher education is a recent phenomenon (*cf.* Altbach 1985; Bitzer and Wilkinson 2012). The field became visible only well into the second half of the twentieth century (*cf.* Brennan and Teichler 2008). Research on the academic profession is an even a more recent activity. Even around 1990, the academic profession was not a prevalent theme in higher education research (*cf.* Wolhuter 1997, p. 38). It rose to prominence with the Carnegie international survey of the academic profession during the early 1990s (*cf.* Altbach 1996).

South Africa is no exception to the worldwide pattern (*cf.* Wolhuter 1997). Whatever attention has been paid initially to the academic profession as a focus of research, revolved around the profession's research and teaching activities, and relations with institutional governance. Aspects of their lives such as their personal and social characteristics, their career trajectories, identities and sense of commitment – all impacting significantly on their functioning as teachers and as researchers – have been ignored. The aim of this paper is to fill that hiatus.

The paper commences with a depiction of the contextual background in which the South African academic profession functions. That is followed by an explanation of the methodology: The Changing Academic Profession (CAP) project and its collection of data. The South African academic profession's personal characteristics, career trajectories, identity, and commitment, as emanating from the CAP exercise are then presented. In conclusion, these are then related to their context, and the implications for the fulfillment of their role as academics are spelled out.

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6.2 Contextual Background

6.2.1 International Level

The South African academic profession finds itself at the receiving end of a flood of changes at international, national and institutional levels, and with respect to the changing structure of knowledge. Two solvent forces, international in scope, are affecting the South African academic profession (as they affect their counterparts in other countries too). Firstly the technological, electronic and communications revolution greatly facilitates the internationalization of universities and of the academic profession, as this revolution makes easier travel, mobility, interaction and collaboration (*cf.* Altbach et al. 2009).

Secondly the neo-liberal economic revolution has made its impact felt on higher education too. The principles of the neo-liberal economy (the profit-motive, efficiency, performativity, reducing the human to a production and consumption unit) were carried into the institutions of higher education. The state, as main supplier of finance for higher education institutions, demands accountability from such institutions and proclaims an ever bigger say in the activities of such institutions. An entire range of quality assurance mechanisms has been put in place.

In South Africa, these changes made their impact felt as well. With respect to the second – the corporatization of the university culture – the difference between South Africa and the rest of the world is that South Africa was shielded from them as one (unintended) result of the international academic boycott waged against the country till 1990 (*cf.* Harricombe and Lancaster 1995); after 1990 the changes came down much more rapidly and forcefully in South Africa than in the rest of the world, where they had started to build up much earlier, and happened more gradually over a longer period of time (*cf.* Jansen 2004; Bundy 2005).

6.2.2 National Level

Upon assuming power in 1994, with the dawn of a new socio-political dispensation, the ruling party (ANC – African National Congress), embarked on an ambitious societal reconstruction project, of which education was not only part, but in which education was also assigned a pivotal role to bring about the desired societal transformation. In the first years after 1994, the ANC formulated a new education policy, based upon the following principles: equalization of educational opportunities, desegregation, multiculturalism and democratization (Wolhuter 1999). As these principles in many respects represent the polar opposites of the bequeathed (pre-1994) education system, they prescribed a radical change for education in South Africa. The policy of equal educational opportunity meant that universities had to gear themselves for a surge in Black student enrolment after 1994. Till 1994

Blacks were disproportionately underrepresented at universities. A problem was that Black primary and secondary schools in the pre-1994 era offered the worst quality education in South Africa (*cf.* Reschovsky 2006). The new policy therefore meant a surge of Black students from schools which ill-prepared them for university study (*cf.* Odendaal and Deacon 2009).

The 'Higher Education Act' ('Act 101 of 1997') gave the Minister of Education sweeping powers over institutions of higher education, including universities; and represents a radical break with the past, when universities were largely in charge of their own affairs.

6.2.3 Institutional Level

Under the influence of the global and national changes outlined above, changes occur within universities, which resulted in academics experiencing that their autonomy and prestige are fizzling out from three increasingly demanding sources: the student body, university governance and national governance.

Equalization of education opportunities meant an influx of students, many of which are, as explained above, very poorly prepared for university study, due to poor quality primary and secondary education. Secondly, in the spirit of democratization, students are gaining even more say in the running of universities, including the appointment of academic staff.

Running universities according to business principles, institutional governance is getting more and more prescriptive, and academics are operating in an environment of increasing managerialism.

The traditional power-base and historically almost untouchable power base of academics is being further eroded from a third source, namely national government. Government, as the largest funder of higher education, demands more accountability from universities (cf. Van der Walt et al. 2010). Since 1994 a statutory body, the Higher Education Quality Committee was set up to carry out on-site quality assurance audits of programs offered at universities. These audits involve laborious preparation of documentation by academics. The National Qualifications Framework, which was set up after 1994, too requires a lengthy and time-consuming documentation.

6.2.4 Changes in the Structure of Knowledge

South African universities were traditionally very much 'ivory tower' institutions. The various disciplines were studied in departments, which were the basic units of the academic enterprise. Academics were encapsulated in these departments, very much isolated from academics in other departments and from the realities of the outside world.

The introduction of a National Qualifications Framework represents one post-1994 force forcing academics to restructure and to rebuild their programmes oriented to (predominantly practical outcomes, rather than by using the traditional disciplines as building blocks). The total change of the education system from content-based education to outcomes-based education constitutes a second strong force in the same direction. Training in most professions, such as law, the ministry, architecture and the teaching profession, has changed from a bachelors degree in the basic faculties (humanities or natural sciences) followed by a few years' study in professional faculties (law, medicine, theology, education, etc.) to the entire programme being appropriated by the professional faculties. This means that courses in basic disciplines (sociology, history, psychology, etc.) are excluded from the training for the professions – now built around professional skills.

All these developments are in line with a global shift in the production and organization of knowledge. Gibbons (2003) named this a shift from Mode 1 (traditional, discipline-bound) to Mode 2 knowledge, i.e. knowledge are now provided and organized on utilitarian and practical grounds.

6.3 Research Method

The academic profession of South Africa was surveyed as part of the international CAP (The Changing Academic Profession) project. Academics in almost 20 countries were surveyed by means of a by and large uniform questionnaire. The questionnaire addressed the following aspects of the academic profession: biographic particulars, teaching activities, research activities, international profile, their relations with institutional governance, and their relations with society.

Participating in the CAP project, the authors surveyed a representative sample of the South African academic profession. Eight hundred South African academics completed the questionnaire. The South African researchers who took part in the CAP project (i.e. the authors of this chapter) solicit permission from all 24 universities and one national institution of research to approach their academic personnel with the request to complete the survey. All but two of these institutions gave permission. Subsequently the authors asked a colleague at each institution to serve as contact person. Each of these contact persons contracted a student assistant who went from door to door to the academic staff of the institutions. The academics were given a copy of the questionnaire as well as a letter explaining the purpose of the research and were asked to complete the questionnaire. After a week the assistant went back to the academics and collected completed questionnaires. They handed over the completed questionnaires to the contact person on the campus, who mailed it back to the CAP research team.

The CAP survey is but the second international survey of the academic profession. The first survey was the Carnegie Investigation in the early 1990s (see Altbach 1996). As South Africa was at that stage still subjected to the international academic boycott, South Africa did not participate in that survey. In 2002/3, however, two

South African academics, with the approval and encouragement of the principals of the Carnegie investigation, applied the questionnaire to a sample of the South African academic profession (*cf.* Wolhuter et al. 2006). This provides the opportunity to detect shifts in the South African academic profession up to 4 years later, when the CAP survey was undertaken.

6.4 Findings

6.4.1 Personal Characteristics

Fifty three percent of respondents were male and 47 % female. This comes close to national aggregate figures (52 % male, 48 % female) and shows that the sample could be regarded as representative. The South African academic profession is highly feminized. It is difficult to decide whether this is a visible outcome of vigorous policies of equality and affirmative action prescribed by government and followed by universities and an indication of an adrogenous society taking shape, or an indication of how the academic profession has lost its attractiveness, and that the high percentage female academics is a sign that the academic profession is no longer very prestigious and sought.

To put matters into perspective three publications need to be cited. Analysing the results of the 2002/3 survey following the Carnegie model, Higgs et al. (2004) found little difference between male and female South African academics, on a wide front, i.e. teaching activities, research activities, teaching-research preferences, community service, relations with institutional management, relations with national government, education-society relations and job satisfaction. The only significant differences were with regard to experience and academic rank. Female academics tended to be concentrated in the lower academic ranks, and had, on average, less years of experience in higher education than their male counterparts.

Secondly, two recent publications (Van der Walt et al. 2009, and Wolhuter et al. 2010) concluded that the academic profession is, compared to other professions in South Africa, no longer a very attractive career option. On the contrary, many academics seem to lead relatively unfulfilled professional lives.

According to the CAP survey, the average respondent in South Africa was 47 years of age. About one third were up to 40 years old, more than half were in their 40s and 50s, while few were elder than 60 years (see Table 6.1).

According to the CAP survey, the South African academic profession is not a young profession. The Survey applied 5 years earlier found the average age to be 43 years (43.6 years for male and 43.2 years for female academics) (Wolhuter and Higgs 2006). Thus, the average age seems to have increased 4 years in 5 years. This confirms the allegation frequently made that the South African academic profession is a rapidly ageing profession. As the compulsory retirement age of faculty is 60 or 65, the profession in South Africa is heading for serious trouble in the next 10–15 years when the majority of faculty (most of them senior, experience faculty, and

Table 6.1 Age composition of South African academics (percentages)

Age group	Responses
Under 30 years	11
31–35 years	10
36–40 years	13
41–45 years	14
46–50 years	18
51–55 years	15
56–60 years	11
61–65 years	7
Older than 65 years	1

Source: CAP Survey 2007/2008

Table 6.2 Conjugal status of South African academics (percentages)

Category	Responses
Married/partner	75
Single	22
Other	3

Source: CAP Survey 2007/2008

Table 6.3 Employment status of spouses of South African academics (percentage of respondents being married/having a partner)

Answer	Responses
Yes, full time	72
Yes, part time	1
No	28

Source: CAP Survey 2007/2008

productive researchers) will exit from the profession. Employment after 65, although not unheard of, only takes place in terms of part-time or fixed term unemployment and only in cases where university policy makes provision for such appointments. Even where possible in terms of university policy, deans and middle level management widely frown upon and eschew such appointments, and they always take place at remuneration levels substantially lower than that of full time employed faculty.

The conjugal statuses of respondents are presented in Table 6.2. These figures show that the majority of academics are part of a family structure.

Respondents were also asked if their spouses/partners are employed. The fact shown in Table 6.3 that the majority of academics have spouses also standing in full time suggests that most academics do have roles within families and responsibilities towards other family members and that these need to be taken into account when interpreting the results of the CAP survey.

Respondents were asked as to the education level of their parents and the parents of their spouses/partners (see Table 6.4). The high level of education of parents and spouses, in a country with low tertiary enrolment ratios, points to a fairly rigid and -impenetrable socio-economic stratification system leaving little opportunity for education to serve as a vehicle for upward social mobility.

Table 6.4 Highest education level of parents and spouse/partner of South Africa academics (percentages)

Highest education level	Father	Mother	Spouse/partner
Entered and competed tertiary education	45	35	85
Entered and/or completed secondary education	31	42	11
Entered and/or completed primary education	14	13	1
No formal education	6	8	1
Not applicable	4	3	1

Source: CAP Survey 2007/2008

This is confirmed by the fact that 33 % of the academics with a spouse/partner report that the partner is an academic. This a further indication for the closed nature of South African society and its relatively strongly fossilized socio-economic borderlines that are difficult to cross.

The majority of respondents have children living with them: 20 % one child, 24 % two children and 15 % three children. Fourteen percent of respondents indicated that they have at one stage interrupted employment to provide child or elder care at home. Of those who did so, they have done so far an average of 14.4 years. The typical academic then, as could be expected from someone 47 years old, is married, with his/her children having already left home. The majority still have children living with them in house, once again reinforcing the conclusion reached above as to the average South African academic finding him/herself in a situation of a family, with its attending roles and responsibilities.

Ninety one percent respondents were born in South Africa, and 93 % received their first degree in South Africa. These figures point to a low level of internationalization as far as faculty composition is concerned, and point to the high levels of pernicious in-breeding – a malady of South African academe. For some of the senior part of the profession (those who got their PhDs before 1994) this still reflects the effect of the international academic boycott. Other than that, the peripheral location of the country, far from the centre of the international academic world, Western-Europe and North-America, can also partly explain the low levels of internationalization.

Sixty two of respondents reported their first language as Afrikaans and 16 % English – i.e. a stunning 78 % reported Afrikaans or English as their first languages. Nationally Afrikaans and English are the home language of respectively 13.3 % and 8.2 % of the population. These statistics point to the continuing dominance of White South Africans in the academic profession, despite two decades of vigorous affirmative action policies, with respect to the appointment and promotion of academic staff. In the White community the Afrikaans speaking section has historically dominated the education and civil service sectors, and the English speaking sector business and industry. Most of the historically Black universities came into being in the 1960s, 1970s and 1980s. Because Black South Africans with tertiary education qualifications, especially with Doctorates and Masters degrees, were very rare at that stage, even at the historically Black universities (*cf.* Behr 1988; Christie 1991).

Table 6.5 South African academics' full-time and part-time employment since the first degree in the various sectors of the economy (mean years)

Employer	Responses	
	Full time	Part time
Higher education institutions	12.8	4.1
Government/public sector institutions	3.2	1.1
Industry/private sector institutions	0.9	0.6
Self-employed	0.4	0.5

Source: CAP Survey 2007/2008

6.4.2 Career Trajectories

Respondents were asked about their employment history since their first degrees. As Table 6.5 shows, they reported altogether 17.3 years of full-time employment and 6.3 years of part-time employment. Thereby, they were employed on average more than two-third of that time at higher education institutions as well as quite some in government or public sector institutions, while industry or private sector institutions, and self-employment were less frequent.

On average, the South African academics had been employed at 2.1 higher education institutions. At their current rank, they had been employed at the time of the survey for about 6 years.

At the time of the survey, 91 % of respondents had full-time contracts, 5 % part-time, and 3 % were paid for part-time work according to work tasks. Eighty one percent were permanently employed (tenure), and 4 % were continuously employed with no guarantee of permanence. Eight percent reported that they were fixed-term employed with permanent/continuous employment, while 6 % stated that they were fixed-term employed without continuous employment prospects.

These figures strengthen the portrayal the South African academic profession as an in-bred self-contained community. Few have work experience outside academia. Many academics are appointed straight from their graduate studies. This might be related to the fact that universities cannot compete well with the public sector, let alone the private sector; so to attract experienced well qualified personnel from industry is difficult. In a country where people with PhDs are very scarce, universities cannot afford to go the contract or fixed-term appointment way, but have to give faculty tenure from day one.

Regarding their sources of income 79 % of respondents indicated that, in addition to their current employer, they do not have any additional employer, and do no additional remunerated work. Five percent of respondents indicated that they additionally work at another research institute or higher education institution, 4 % of respondents had additional work at a business organization outside of academe, 4 % at a non-profit organization or government entity outside of academe, and 10 % as self-employed.

Table 6.6 Teaching-research preferences of South African academics (percentages)

Category	Responses
Primarily in teaching	18
In both, but leaning towards teaching	35
In both, but leaning towards research	37
Primarily in research	9

Source: CAP Survey 2007/2008

6.4.3 Sense of Identity

In response to a question regarding their preferences of teaching and research, 18 % expressed a prime interest in teaching (see Table 6.6). Thirty five percent stated that that they were interested both in teaching and research but leaned towards teaching. Thirty seven percent also expressed an interest in both, but leaned towards research, while only 9 % expressed a clear preference for research. Thus, altogether, slightly more than half were more strongly interested in teaching and slightly less than half in research.

While the majority of academics in the majority of countries includes in the CAP survey emphasize research more strongly, the academics in South Africa gravitate slightly towards the teaching pole. This is probably a relic from the past. A typical developing country, higher education in South Africa has long been seen to have the prime mission to educate trained human resources for a developing economy (*cf.* Sutherland and Wolhuter 2002). Writing as early as 1956, Smith (1956), who is famous for his pioneering work on the coelacanth, states the following: "Research at universities in South Africa has occupied a subordinate, and in many ways an uneasy position. University staff are normally appointed and paid for teaching, [and] while research is officially encouraged, anyone who devotes more than normal time to such work runs the risk of being regarded as not giving proper attention to the teaching for which he is being paid". Faculty at South Africa carries excessive teaching commitments, which leave them little time for research and publishing (Sutherland and Wolhuter 2002: 79). Moreover, many students come to higher education from economically and educationally deprived backgrounds; teaching such students is demanding, time-consuming and pedagogically challenging when compared to teaching in higher education in developed countries (*Ibid.*). However institutional managers began to take research more seriously in recent decades. In 1984 the university subsidy formulae changed. The new subsidy links the amount of subsidy which government pays to a university to the university's research output. Faculty has come under increasing pressure to publish. More so after South Africa re-joined the international academic community, and in times of globalization and the competition it has spawned, and the ideal of every university to become a world-class university (with research output an important factor in any university ranking system).

Table 6.7 South African academics' service and community involvement in current year (percentages; multiple reply possible)

Activity	Responses
Served as a member of national/international scientific bodies	24
Served as a peer reviewer	46
Served as editor of journal/book series	13
Served as electoral officer or leader in professional academic associations/organizations	20
Served as an elected officer in leader of unions	4
Been substantially involved in local, national of international politics	4
Been a member of a community organization or participated in community-based projects	37
Worked with local, national or international social service agencies	13
Other	5
None of these activities at all	23

Source: CAP Survey 2007/2008

6.4.4 Service and Community Involvement

Academics have been asked in what service activities there were involved in the current year both inside and outside academia. As Table 6.7 shows, the proportion of those involved in internal services is substantially higher those involved in external services, It is clear that South African academics have an identity as 'ivory tower' academics, maintaining a very low or no profile as far as community service/involvement is concerned. South African higher education institutions were historically modeled on their parent institutions in Britain (the erstwhile motherland). They simulated the model of liberal-academic education bequeathed to them from metropolitan Britain (Wolhuter 2009, p. 361). That made for 'ivory tower' like institutions, cut off from their surrounding communities.

In their scientific fraternities they are rather inactive too. This might be related to their peripheral location with respect to the world-hub of the scientific network, also that South Africa covers a large tract of land, with the 24 higher education institutions rather thinly spread and mostly far from each other.

6.4.5 Sense of Commitment

Respondents sense of commitment were probed by a number of questions. They were asked about their overall levels of job satisfaction, if they have, in the 5 years up to the survey, considered changing jobs, the number of hours they spent per week on various job related activities (teaching, research, community service, and administrative duties) and the intensity of affiliation they feel to each of their disciplines/academic fields, departments and institutions. Fifty one percent of respondents

Table 6.8 South African academics' having considered changing their job and having taken concrete action (percentages; multiple reply possible)

Direction of possible job change	Respondents considering change	Respondents having taken concrete action
To a management position in your higher education institution	20	14
To an academic position in another higher education institution within South Africa	29	7
To an academic position in another country	21	6
To work outside higher education	32	12
No, I have not considered making any changes in my job	43	39

Source: CAP Survey 2007/2008

Table 6.9 Importance South African academics attach to affiliations (percentage stating a strong affiliation)

Category	Responses
Your own academic discipline/field	93
Your department at your institution	76
Your institution	60

Source: CAP Survey 2007/2008

reported their level of job satisfaction as high, 29 % as neutral and 20 % as low. Twenty three were of the opinion that, since they had started their academic careers, working conditions in higher education have improved, 33 % that it has remained the same, and 44 % that it has deteriorated.

Table 6.8 presents responses regarding whether respondents have considered changing jobs within the last 5 years and whether they have taken concrete action to change their job. As Table 6.8 shows, more than half have considered changes, among them most frequently to work outside higher education. Concrete steps, however, were most frequently taken towards taking over a management position in their current higher education institution.

The importance which respondents attach to their affiliations with their academic discipline/fields, department and institutions is presented in Table 6.9. As in other countries, almost South African academics stated that the affiliation to their discipline is important for them, but very high proportions of respondents underscored the affiliation to their department and their institution as well.

Table 6.10 shows the average number of weekly hours the academics in South Africa teaching, research and other activities. Altogether, South African academics work less than the usually required numbers of hours (45 h in South Africa). Table 6.10 present the number of hours both for the period when classes are in session and when classes are not in session. Across the whole years, academics in South Africa seem to spend only slightly more than half as much time on research as they spend on teaching.

Table 6.10 Time spent by South African academics in teaching, research and other work-related activities (mean weekly hours)

Activity	Mean weekly hours	
	When classes are in session	When classes are not in session
Teaching (includes preparing lectures, instruction, student consulting and assessing students' work)	20.6	11.5
Research	8.8	15.1
Services (paid and unpaid)	2.7	3.3
Administration	7.0	7.5
Other	2.7	3.3
Total	41.8	40.9

Source: CAP Survey 2007/2008

Table 6.11 Research productivity of South African academics during the last 3 years (mean number)

Type of publications and papers	Mean number
Scholarly books authored/co-authored	1.7
Scholarly books edited/co-edited	1.5
Journal articles/book chapters	4.1
Conference papers	4.3

Source: CAP Survey 2007/2008

The respondents' research productivity is presented in Table 6.11. Accordingly, South African academics write and publish a book every 2 years on average, publish slightly more than one article annually and also present slightly more than one paper annually on average at a conference.

Altogether, the hours per week which academics spend on academic activities are low. Their research output is low too. Finally, their job satisfaction is not overly high, considering that not long ago the academic profession was one of the most prestigious in the country.

6.5 Conclusions

While the South African academic profession is highly feminized, it is a relatively old and aging profession. The last send up a red flag, in view of the practice of mandatory retirement at age 60 or 65, the fact that the most active researchers will retire in the next coming years, and that universities will lose institutional memory and their best researchers.

Most academics are married, with their spouses also working full-time (a third have spouses in the academic profession too). The mean academic still has two children staying with the family in the house. This means that the average South

African academic find him/herself in a situation as a member of a family, with roles and responsibilities towards other family members. Most South African academics therefore have family commitments and roles.

Most academics' spouses and parents are fairly well-educated. The White population and, within the White sector, the Afrikaner component continues to dominate the academic profession. The typical South African academic has entered the academic profession in his/her early thirties, and is on a permanent (tenured) full-time contract, the university being their sole source of income. The high percentage of academics being married to academics, the high correspondence between academics' level of education and that of their parents, and the dominance of the South African academic by White Afrikaans speaking South Africans, are indicative of the fossilized socio-economic stratification of South African society and its relative isolation from international, global influences. This trait of the profession stands in contrast with the policy of education and higher education serving as a vehicle of social mobility.

The profession straddles the teaching-research continuum, leaning slightly towards the teaching side. The social involvement of the South African worker, and their research productivity, likewise, is unimpressive. The profession seems to remain a self-contained community, living academically a strong 'ivory tower' like existence, relatively cut off from the This existence is at odds with the exigencies of post-1994 higher education policy and society. Their commitment to their profession does not seem high, neither is their job satisfaction. It seems as if the global and national trends of the higher education environment and their own expectations (which are steeped in the past) are moving into two opposite directions. For the well-being of South African higher education and society, this polarisation needs to be addressed.

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Part II
Mature Higher Education Systems

Chapter 7
The Changing Academic Profession in Canada: Personal Characteristics, Career Trajectories, Sense of Identity/Commitment and Job Satisfaction

Amy Scott Metcalfe, Donald Fisher, Glen Jones, Yves Gingras, Kjell Rubenson, and Iain Snee

7.1 Background: Canadian Higher Education[1]

Canada is a federation, and the Canadian Constitution delegates responsibility for education to the Canadian provinces. While the federal government plays a major role in a number of policy areas that have a significant impact on universities, such as research and student financial assistance (Fisher et al. 2007), the ten provinces have legislative and regulatory authority over higher education, and there are substantial differences in system arrangements, funding mechanisms, and governance structures by province (Fisher et al. 2009; Shanahan and Jones 2007). In Canada, there are three main types of higher education institutions: institutes, colleges, and universities. Most universities in Canada are public and the few private institutions are primarily not-for-profit. The university sector has been categorized into three types: Medical/Doctoral, Comprehensive, and Primarily Undergraduate. While there have been a variety of instructional and research positions in the history of Canadian higher education, the focal positions for this study are the tenure-track

[1] This section adapted from Metcalfe et al. (2011).

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and tenured ranks of assistant professor, associate professor and professor (also known as full professor). Faculty in these positions are responsible for both teaching and research, and are characteristically full-time appointments.

7.2 The Changing Academic Profession Survey in Canada

The CAP project aimed to revisit some of the themes explored by the First International Survey of the Academic Profession, conducted in 1992 by the Carnegie Foundation for the Advancement of Teaching, which involved 14 countries (see Altbach 1996). Canada was not represented in the 1992 Carnegie study, making the 2007 CAP study the first time that many of the questions used in the international project had been asked of Canadian faculty. Thus, although the Canadian CAP project has not resulted in a dataset that can be compared with the 1992 Carnegie survey, it has provided an opportunity to assess the academic profession in Canada.

A two-stage cluster sample was created (see Tables 7.1a and 7.1b) at the level of institutions and the level of individuals. At the institutional level, the target population of universities was sorted by type of institution. From this list, a random sample of institutions was created. The institutional sample consisted of 18 institutions: 4 Medical/Doctoral, 6 Comprehensive, and 8 Primarily Undergraduate. Each of Canada's 10 provinces was represented by at least one institution.

Table 7.1a Canadian CAP Survey sampling framework

	Gross sample		Net sample		Returned sample	
University type	Institutions	Faculty	Institutions	Faculty	Institutions	Faculty
Medical doctoral	15	18,840	4	2245	4	442
Comprehensive	11	7806	6	3109	6	501
Primarily undergraduate	21	4908	8	1339	8	209
Total	47	31,554	18	6693	18	1152

Table 7.1b Demographics of full-time university faculty in Canada

Characteristics	Faculty in Canada 2005/2006[a]	CDN CAP sample[b]
Assistant professor	28.0 %	28.6 %
Associate professor	32.0 %	35.3 %
Full professor	34.0 %	36.0 %
Other	6.0 %	0.0 %
Total N	38,298	1152

[a]Source: CAUT Almanac, 2008
[b]Source: CAP Survey 2007/2008

For each of the 18 universities in the sample, full-time faculty with the titles of professor, associate professor and assistant professor were included in the individual-level cluster sample. Other academic staff with titles such as instructor, lecturer, research associate, as well as clinical faculty, were not included in the Canadian CAP Gross sample. Administrative faculty such as deans and vice-presidents were not included. Only full-time faculty university faculty were surveyed.

The survey was closed in mid-December, 2007. Another phase of the survey was initiated in April 2008 to capture more responses, and the survey was finally closed in May 2008, having obtained 1152 valid returns for a response rate of 17.21 %. This returned sample closely mirrors the demographic characteristics of full-time university faculty in Canada (CAUT 2008). These characteristics are described in detail in the next section, using data from the survey.

7.3 Personal Characteristics

As in many countries, there are more male faculty than female faculty in Canada, with the mean age of 47 and the top-heaviness of the ranks serving as partial explanations for the higher numbers of men, given the later entry of many women into the academy (Table 7.2).

While the faculty in the Canadian CAP survey are largely Canadian citizens (89.5 %), the country's professoriate has an international character with just 68 % having been Canadian citizens at birth (Table 7.2). The leading nationalitiesat birth other than Canadian were American (8.3 %) and British (6.1 %), with representation from other countries accounting for the remaining 17.5 % (Table 7.3). The majority of Canadian faculty in the survey self-identified as White, with 15 % indicating that they are Visible minorities/non-white.[2]

Table 7.2 Demographics of full-time university faculty in Canada

Characteristics	Faculty in Canada 2005/2006[a]	CDN CAP sample[b]			
Male	67.3 %	59.1 %			
Female	32.7 %	40.9 %			
White	84.2 %		85.0 %		
Visible minority/non-white	15.8 %		15.0 %		
Canadian-born/citizen at birth	59.0 %			68.1 %	
Canadian citizen (currently)	86.8 %				89.5 %
Total N	38,298	982	1008	955	797

[a]Source: CAUT Almanac, 2008
[b]Source: CAP Survey 2007/2008

[2]The Canadian CAP survey included a supplemental question about race/ethnicity, following categories used by Statistics Canada.

Table 7.3 Demographic context of full-time faculty in Canada

Age (mean)	47.3
Nationality at birth	
Canada	68.1 %
USA	8.3 %
UK	6.1 %
France	3.5 %
Germany	1.4 %
China	1.0 %
India	1.0 %
Other	10.6 %

Source: CAP Survey 2007/2008

In terms of family characteristics (Table 7.4), a high percentage of respondents indicated that their fathers had entered or completed tertiary education (49 %) and that their mothers more often had only secondary education, but a good number of them had completed a higher degree (38 %).

Most faculty in the Canadian sample are in a committed romantic relationship (81.2 %), and their partners[3] are mostly working full-time (61.4 %). The partners of the survey respondents have overwhelmingly entered or completed higher education (89.9 %). Interestingly, 38.2 % indicated that their partner was also an academic, indicating that the dual career issues that have been discussed in the primarily American literature on academic work-life balance (Wolf-Wendel et al. 2004) may also be present in the Canadian academic context. Just under half of the academics in the sample are not currently living with children at home (48.9 %), but more than half (51.1 %) have at least one child living at home (a quarter of them have two children living with them and 8.8 % have three or more at home). The impact of being in domestic partnerships and having children at home has been explored in the North American CAP data by Metcalfe and Padilla González (2013), who found that female faculty in the Canadian, American, and Mexican CAP surveys are less likely to be married, less likely to have children, and are slightly younger on average than their male colleagues in their respective countries. In addition, the CAP data show that more North American female faculty than male faculty have interrupted their academic career in order to take care of children or the elderly (Metcalfe and Padilla-González 2013).

From the perspective of language (Table 7.5), the first language of the respondents is English (44.5 %), French (28.7 %), or Other (26.7 %). These percentages are indicative of both Canadian bilingualism as English and French are both official languages, and Canadian multiculturalism. In the context of teaching, most of the

[3] The CAP survey did not define 'partnership' by marriage alone, using the terms 'spouse/partner' or 'marriage/partnership.' In Canada same-sex marriage is legal, and therefore we are confident that the wording of the questions captured a broad spectrum of committed domestic relationships found in this country.

Table 7.4 Family variables of full-time faculty in Canada

Educational background of parents (entered or completed)	Father	Mother
Tertiary education	48.9 %	38.2 %
Secondary education	30.0 %	41.9 %
Primary education	17.8 %	16.1 %
No formal education	2.7 %	3.5 %
Familial status		
Married/partner	81.2 %	
Single	15.7 %	
Other	3.1 %	
If married/partner, is she/he employed?		
Yes, full-time	61.4 %	
Yes, part-time	15.9 %	
No	20.1 %	
If married/partner, what is their highest education level? (entered or completed)		
Tertiary education	89.9 %	
Secondary education	6.0 %	
Primary education	0.5 %	
Not applicable	3.5 %	
Is your spouse/partner also an academic?		
Yes	38.2 %	
Are there children living with the respondent?		
Yes, one child	18.1 %	
Yes, two children	24.1 %	
Yes, three or more children	8.9 %	
No	48.9 %	

Source: CAP Survey 2007/2008

Table 7.5 Language variables of full-time faculty in Canada

First language	
English	44.5 %
French	28.7 %
Other	26.7 %
Teaching language	
First language	82.0 %
If not, then which language?	
English	67.2 %
French	31.1 %
Other	1.7 %
Research language	
First language	70.0 %
If not, then which language?	
English	90.1 %
French	7.8 %
Other	2.1 %

Source: CAP Survey 2007/2008

Table 7.6 Work experience in academic profession of full-time faculty in Canada

Year of first appointment (beyond research and teaching assistant)	Mean	Std. deviation
First full-time appointment	1992	10.47
Appointment to current institution	1995	9.78
Appointment/promotion to current rank	2001	6.90
Number of higher education institutions or research institutes…		
Worked in since first degree	3.04	3.49
Worked in since highest degree	2.45	3.95
Years worked in other institutions (including self-employment)…		
…since first degree	2.85	4.56
…since highest degree	1.31	2.77
Since highest degree		
Medical/doctoral university	1.57	3.62
Comprehensive university	1.18	2.16
Primarily undergraduate university	1.07	1.94

Source: CAP Survey 2007/2008

faculty in the sample teach in their first language, and if not, then in English. In their research, most are conducting research in their first language, and again if not, usually in English.

7.4 Career Trajectories

On average, the faculty in the Canadian sample first entered the academic profession 17 years ago with the mean year of entry being 1992 (Table 7.6), and began working at their current institutions 14 years ago (with the mean start in 1995). The average of time in present rank was 6 years at the time of the survey (i.e., mean year of appointment or promotion in 2001). The respondents indicated that they had, on average, worked at just two higher education institutions and only a little over a year spent in outside employment since the time of earning their highest degree. The number of years working outside of academe varied little by institutional type.

7.5 Sense of Identity/Commitment

7.5.1 Identity

In general, faculty in the Canadian sample responded that their interests lie primarily in both teaching and research, with more than half indicating that they lean toward research (Table 7.7). Overall, very few respondents indicated that their

Table 7.7 Academic preferences of full-time faculty in Canada

Do your interests lie primarily in teaching or research?	All	Male	Female	
Primarily in teaching	6.0 %	6.4 %	5.0 %	
In both, but leaning towards teaching	26.4 %	24.7 %	30.2 %	
In both, but leaning towards research	53.9 %	55.6 %	50.9 %	
Primarily in research	13.8 %	13.3 %	13.9 %	
Do your interests lie primarily in teaching or research?	All	Assistant professor	Associate professor	Professor
Primarily in teaching	6.0 %	3.5 %	7.8 %	6.1 %
In both, but leaning towards teaching	26.4 %	29.9 %	28.3 %	21.9 %
In both, but leaning towards research	53.9 %	53.4 %	50.4 %	57.5 %
Primarily in research	13.8 %	13.2 %	13.5 %	14.5 %
Do your interests lie primarily in teaching or research?	All	Medical/doctoral university	Comprehensive university	Primarily undergraduate university
Primarily in teaching	6.0 %	5.31 %	6.4 %	6.2 %
In both, but leaning towards teaching	26.4 %	22.46 %	26.0 %	35.9 %
In both, but leaning towards research	53.9 %	55.31 %	54.9 %	48.2 %
Primarily in research	13.8 %	16.91 %	12.7 %	9.7 %

Source: CAP Survey 2007/2008

interests lie primarily in teaching (just 6 %). The preferences were not that different between men and women, or by academic rank. As might be expected, a higher percentage of those employed in the Primarily Undergraduate (PU) universities showed preference for teaching than faculty at other universities, with 42.1 % at the PU institutions indicating that their interests lie primarily in teaching or in both but leaning towards teaching, 27.8 % at the Medical/Doctoral institutions and 32.4 % at the Comprehensive. Faculty at all institutional types indicated preference primarily in research or in both but leaning toward research: 72.2 % at the Medical Doctoral, 67.6 % at the Comprehensive, and 57.9 % at the Primarily Undergraduate institutions.

Yet, when asked about the relationship between teaching and research (Table 7.8), 61.9 % of the respondents disagreed or strongly disagreed with the statement that 'Teaching and Research are hardly compatible with each other.' Similarly, a massive 83.1 % of our respondents agreed or strongly agreed with the statement 'Your research activities reinforce your teaching.' The responses to both statements

Table 7.8 Views on teaching and research of full-time faculty in Canada

Question	Strongly disagree				Strongly agree
Teaching/research not compatible	36.3 %	25.6 %	18.2 %	13.1 %	6.8 %
Research reinforces teaching	1.6 %	5.4 %	9.9 %	29.6 %	53.5 %
Teaching/research not compatible					
Male	39.2 %	25.9 %	16.9 %	12.4 %	5.5 %
Female	32.5 %	24.5 %	20.3 %	15.3 %	7.5 %
Teaching/research not compatible					
Assistant Professor	28.0 %	27.0 %	20.9 %	15.1 %	9.0 %
Associate Professor	32.8 %	26.3 %	21.4 %	13.6 %	6.0 %
Professor	46.2 %	23.9 %	12.9 %	11.2 %	5.8 %
Teaching/research not compatible					
Medical/doctoral	40.2 %	26.8 %	15.9 %	13.2 %	3.9 %
Comprehensive	34.1 %	25.5 %	19.9 %	11.6 %	9.0 %
Primarily undergraduate	33.5 %	23.4 %	18.8 %	16.8 %	7.6 %
Research reinforces teaching					
Male	1.2 %	4.9 %	9.8 %	31.1 %	53.0 %
Female	2.6 %	5.9 %	10.0 %	27.4 %	54.2 %
Research reinforces teaching					
Assistant professor	2.3 %	6.3 %	14.7 %	30.3 %	46.3 %
Associate professor	2.0 %	5.6 %	9.8 %	30.4 %	52.4 %
Professor	0.8 %	4.5 %	6.1 %	28.4 %	60.2 %
Research reinforces teaching					
Medical/doctoral	2.3 %	5.9 %	8.7 %	29.6 %	53.6 %
Comprehensive	1.5 %	5.3 %	10.6 %	27.8 %	54.9 %
Primarily undergraduate	0.5 %	4.7 %	10.5 %	34.2 %	50.0 %

Source: CAP Survey 2007/2008

did not vary much by gender but did vary systematically by academic rank and university type on the first statement and by academic rank on the second statement. On the question of compatibility the percentage of respondents who disagreed or strongly disagreed rose from 55 % for assistant professors, to 58.3 % for associate professors to 70.1 % for professors. Similarly, the percentage rose from 56.9 % at Primarily Undergraduate, to 59.6 % at Comprehensive and to 67 % at Medical/Doctoral universities. On the question of research reinforcing teaching we found little variation by university type but a systematic trend by academic rank. The percentage of respondents who agreed or strongly agreed rose from 76.6 % for assistant professors, to 82.8 % for associate Professors, to 88.6 % for professors. The variation by rank is probably the result of the accumulated experience of being a teacher and a researcher in the academy, as well as the likelihood that junior faculty are teaching introductory courses and not upper division material. The variation by university type on the question of compatibility is likely a function of the higher amount of research conducted at Medical/Doctoral universities compared with other institutional types.

Table 7.9 Academic's conception of academic work of full-time faculty in Canada

Scholarship as…	Strongly disagree				Strongly agree
Research	1.6 %	6.4 %	16.0 %	31.1 %	45.0 %
Real-life application	3.1 %	7.9 %	21.2 %	34.1 %	33.7 %
Synthesis of findings in field	2.1 %	11.0 %	24.9 %	37.9 %	24.1 %
Obligation to apply knowledge	7.3 %	12.8 %	21.1 %	26.8 %	32.0 %
Scholarship as research					
Male	1.6 %	5.5 %	15.2 %	32.4 %	45.3 %
Female	1.8 %	7.3 %	17.6 %	28.9 %	44.5 %
Scholarship as real-life application					
Male	3.8 %	8.5 %	26.4 %	34.0 %	27.3 %
Female	2.3 %	7.3 %	15.6 %	34.9 %	39.9 %
Scholarship as synthesis of findings in field					
Male	2.1 %	12.2 %	26.9 %	38.4 %	20.3 %
Female	2.8 %	10.6 %	23.4 %	36.4 %	26.9 %
Faculty in my discipline have a professional obligation to apply their knowledge					
Male	6.9 %	14.4 %	22.1 %	28.0 %	28.7 %
Female	7.0 %	11.8 %	20.8 %	24.8 %	35.8 %
Scholarship as research					
Assistant professor	1.9 %	5.5 %	16.8 %	37.1 %	38.7 %
Associate professor	1.4 %	8.2 %	16.7 %	27.9 %	45.9 %
Professor	1.5 %	5.3 %	14.8 %	29.3 %	49.1 %
Scholarship as real-life application					
Assistant professor	1.6 %	7.4 %	20.9 %	37.9 %	32.2 %
Associate professor	4.1 %	9.8 %	21.2 %	31.8 %	33.2 %
Professor	3.3 %	6.6 %	21.4 %	33.2 %	35.5 %
Scholarship as synthesis of findings in field					
Assistant professor	1.0 %	10.3 %	26.8 %	44.5 %	17.4 %
Associate professor	3.8 %	10.6 %	25.5 %	33.9 %	26.3 %
Professor	1.5 %	12.0 %	22.9 %	36.4 %	27.2 %
Faculty in my discipline have a professional obligation to apply their knowledge					
Assistant professor	6.8 %	11.0 %	16.5 %	29.7 %	36.1 %
Associate professor	7.1 %	13.9 %	25.1 %	27.5 %	26.4 %
Professor	7.9 %	13.2 %	21.1 %	23.9 %	33.8 %
Faculty in my discipline have a professional obligation to apply their knowledge					
Medical/doctoral	8.5 %	12.9 %	17.8 %	24.6 %	36.1 %
Comprehensive	6.7 %	12.9 %	21.1 %	28.8 %	30.5 %
Primarily undergraduate	6.2 %	12.3 %	28.2 %	26.7 %	26.7 %

Source: CAP Survey 2007/2008

When asked about their conception of scholarship (Table 7.9), 76.1 % of the respondents indicated that they agreed or strongly agreed with the statement 'Scholarship is best defined as the preparation and presentation of findings on original research.' This response did not vary much by gender, but there was slightly more agreement from full professors than assistant or associate professors.

When asked if they agreed or disagreed with the statement 'Scholarship includes the application of academic knowledge in real-life settings' most faculty indicated that they agreed or strongly agreed (67.8 %). More women than men strongly agreed with this statement, which may reflect the stratified placement of women throughout the academy (Kulis et al. 2002). The responses were fairly even across the faculty ranks, with just a few percentage points higher among the full professors. Similarly, most faculty agreed or strongly agreed (58.8 %) with the statement that 'Faculty in my discipline have a professional obligation to apply their knowledge to problems in society.'

The responses were fairly even between men and women but did vary by academic rank and university type. Assistant professors were more likely to agree or strongly agree with this statement as were professors in Medical/Doctoral and Comprehensive universities.

In response to the statement 'Scholarship includes the preparation of reports that synthesize the major trends and findings of my field,' most faculty in the sample agreed or strongly agreed (62 %), but a quarter were neutral on this point. Women faculty were more likely to strongly agree with this statement, and again the full professors were more often to choose 'strongly agree.'

When asked about their affiliations (Table 7.10), most faculty in the Canadian sample indicated that their academic discipline/field is very important to them (68.8 %). This response did not vary much by gender. There were very minor differences in response by rank, with 71.3 % of full professors stating that this was very important to them. In terms of institutional type, 72.3 % of the faculty from Medical/Doctoral institutions indicated that their affiliation toward their academic discipline/field was very important, as compared with 65.8 % at the Comprehensive institutions and 68.7 % at the Primarily Undergraduate.

In terms of importance of departments, 68.1 % indicated that this affiliation was important or very important. This did not vary much by gender or institutional type, but assistant professors slightly more often noted that their department was important or very important (73.8 %), indicating perhaps that the location of this first appointment—where an individual must make strong connections in order to receive support for tenure—is a critical affiliation for early career faculty.

When considering their affiliation with their institution, a quarter of the respondents were neutral and almost 60 % indicated this was important or very important. Again, there was not much gender variation in the responses, and not much difference by rank or institutional type.

7.5.2 Commitment

When asked if within the last 5 years 'have you considered a major change in your job?' survey respondents indicated a strong interest in mobility, with only 43.6 % saying they had not considered moving positions (Table 7.11). Female faculty showed a slightly stronger disinterest in moving at 46.3 % compared to 42.6 % of

Table 7.10 Affiliation of full-time faculty in Canada

Importance of affiliations	Not at all important				Very important
Academic discipline/field	0.6 %	1.4 %	6.8 %	22.5 %	68.8 %
My department	3.0 %	9.6 %	19.3 %	35.0 %	33.1 %
My institution	4.1 %	11.4 %	25.4 %	34.3 %	24.8 %
Academic discipline/field					
Male	0.5 %	1.9 %	5.7 %	22.9 %	69.0 %
Female	0.2 %	0.7 %	7.2 %	20.9 %	70.8 %
Assistant professor	1.6 %	0.3 %	6.7 %	26.1 %	65.3 %
Associate professor	0.0 %	1.9 %	7.9 %	21.1 %	69.1 %
Professor	0.3 %	1.8 %	5.8 %	20.8 %	71.3 %
Medical/doctoral	0.5 %	0.5 %	6.1 %	20.7 %	72.3 %
Comprehensive	0.6 %	1.9 %	6.4 %	25.2 %	65.8 %
Primarily undergraduate	0.5 %	2.0 %	9.1 %	19.7 %	68.7 %
My department					
Male	2.6 %	9.7 %	19.7 %	35.1 %	32.9 %
Female	3.5 %	10.0 %	16.7 %	35.2 %	34.7 %
Assistant professor	2.2 %	7.0 %	16.9 %	42.0 %	31.8 %
Associate professor	4.1 %	10.9 %	21.2 %	32.1 %	31.8 %
Professor	2.5 %	10.4 %	19.6 %	32.1 %	35.4 %
Medical/doctoral	3.2 %	9.3 %	18.1 %	33.5 %	35.9 %
Comprehensive	3.4 %	12.2 %	19.4 %	35.9 %	29.1 %
Primarily undergraduate	1.5 %	4.0 %	21.7 %	35.9 %	36.9 %
My institution					
Male	3.8 %	12.5 %	26.3 %	32.9 %	24.6 %
Female	4.0 %	10.8 %	25.1 %	34.8 %	25.3 %
Assistant professor	3.5 %	9.9 %	27.1 %	36.9 %	22.6 %
Associate professor	6.0 %	12.3 %	24.0 %	33.5 %	24.3 %
Professor	2.8 %	11.7 %	25.5 %	32.9 %	27.0 %
Medical/doctoral	3.7 %	11.8 %	25.7 %	33.3 %	25.5 %
Comprehensive	3.9 %	12.2 %	23.6 %	35.5 %	24.8 %
Primarily undergraduate	5.6 %	8.6 %	29.3 %	33.3 %	23.2 %

Source: CAP Survey 2007/2008

the male faculty, as did full professors (48.9 %). The associate professors (38.1 %) and those at Primarily Undergraduate institutions (36.4 %) had the lowest percentages of responses indicating that they had not considered a major job change in this period.

For those who had considered a major job change, the percentage who said that they had considered moving to another academic institution within Canada (25.7 %) was higher than other choices. The percentage of assistant professors who had considered such a move (31.2 %) was higher than the other ranks, and those in Primarily Undergraduate institutions were more disposed to moving to another Canadian

Table 7.11 Major job change consideration/actions of full-time faculty in Canada

Within the last 5 years, have you considered a major change in your job?									
	Total	Male	Female	Asst	Assoc	Full	Med/D	Comp	PU
Not considered	43.6 %	42.6 %	46.3 %	43.6 %	38.1 %	48.9 %	43.9 %	46.3 %	36.4 %
Management at current institution	13.0 %	14.8 %	9.5 %	6.1 %	14.3 %	17.3 %	10.2 %	14.2 %	16.3 %
Academic, different institution, same country	25.7 %	26.9 %	26.1 %	31.2 %	28.7 %	18.3 %	22.4 %	26.5 %	30.6 %
Academic, different country	17.3 %	19.3 %	14.2 %	21.8 %	17.9 %	13.0 %	17.4 %	17.0 %	17.7 %
Outside higher education/research institutes	18.4 %	16.2 %	19.9 %	21.2 %	25.2 %	9.6 %	18.8 %	15.8 %	23.9 %
Within the last 5 years, did you take concrete action to make such a change?									
	Total	Male	Female	Asst	Assoc	Full	Med/D	Comp	PU
Management at current institution	11.4 %	14.3 %	8.5 %	3.3 %	12.3 %	16.9 %	12.2 %	10.4 %	12.0 %
Academic, different institution, same country	14.1 %	13.3 %	16.2 %	15.8 %	17.4 %	9.6 %	14.5 %	13.8 %	14.4 %
Academic, different country	7.8 %	9.3 %	6.5 %	9.7 %	7.9 %	6.3 %	10.6 %	6.8 %	5.3 %
Outside higher education/research institutes	4.6 %	3.4 %	5.7 %	5.8 %	4.9 %	3.4 %	5.0 %	4.4 %	4.3 %

Source: CAP Survey 2007/2008

institution than were those employed in the other institutional types. The second choice for those who had considered a major job change was to move outside of academe. This choice was slightly more popular with women than men, with associate professors, and by those currently working at Primarily Undergraduate institutions. Moving to an academic position in another country was also a possibility for about 17 % of those who indicated that they had considered a major job change. Male professors were slightly more inclined toward this option, as were assistant professors; institutional type was not a significant factor in this selection. Finally, a few respondents (13 %) indicated that they had considered a move to a management position at their current institution. Men were more likely to have selected this option, as were full professors and those at Primarily Undergraduate institutions.

When asked if they had taken a strong action to make such a change, most had moved to another academic institution within Canada, and the fewest had moved to a job outside of academe. These choices are both consistent with the composition of the survey sample, as those who had moved to an academic appointment in another country or outside of academe but had not returned to a Canadian university would have been outside of the sampling framework for this study.

While we can observe no clear trend among respondents when asked for their view on the statement 'This is a poor time for any young person to begin an academic career in my field,' a large majority (76.8 %) disagreed or strongly disagreed with the statement that 'If I had to do it over again, I would not become an academic' (Table 7.12).

Responses to this item were similar for men and women and showed little variation across university types. On the other hand, professors were far more likely to disagree or strongly disagree with this statement (85.3 %) than with assistant or associate professors. This is somewhat predictable as this group was the beneficiaries

Table 7.12 Views on career choice of full-time faculty in Canada

Question	Strongly disagree				Strongly agree
Not become an academic again?	58.3 %	18.5 %	11.7 %	6.2 %	5.3 %
By gender					
Male	61.3 %	17.4 %	10.9 %	6.0 %	4.3 %
Female	52.9 %	20.6 %	13.0 %	6.8 %	6.8 %
By Rank					
Assistant professor	48.9 %	23.2 %	14.5 %	7.4 %	6.1 %
Associate professor	53.8 %	18.1 %	14.3 %	7.6 %	6.2 %
Professor	70.2 %	15.1 %	6.9 %	4.1 %	3.8 %
By university type					
Medical/doctoral	58.8 %	17.2 %	14.2 %	4.7 %	5.2 %
Comprehensive	59.2 %	18.2 %	10.9 %	6.2 %	5.6 %
Primarily undergraduate	55.3 %	21.8 %	8.1 %	9.6 %	5.1 %

Source: CAP Survey 2007/2008

of the major expansion of higher education in the late 1960s and early 1970s and through the decades they have been part of a fairly stable system when compared to other nations.

7.5.3 Job Satisfaction

When we compare the views the Canadian professoriate hold with regard to their working conditions and their job satisfaction, we are confronted with some major contradictions (see Weinrib et al. 2013). When asked about overall working conditions in higher education since they started their career, a surprising 39.5 % indicated that conditions has deteriorated or very much deteriorated. A further 37.9 % were neutral on this question. Women were more likely than men to hold these views with 44.4 % on the side of deterioration and 40.3 % in the neutral category. The only variation by either university type or academic rank occurred for assistant professors but this is clearly due to their lack of time in the system.

On the other hand, when asked to rate their overall satisfaction with the current job, 73.8 % rated the level as high or very high. Less that 10 % rated the level of overall satisfaction in the low range. Consistent with the working conditions response pattern, we find that men are more likely than women to rate their overall satisfaction as high or very high. A higher percentage of professors (80.6 %) and those teaching at PU universities (78.1 %) fall into this category than those at a lower rank or those working in Medical/Doctoral or Comprehensive universities. However it is important to note that there were only modest differences in perceived job satisfaction by rank, and other analyses have concluded that there is surprisingly little difference in perceptions of academic work between junior faculty and their more senior peers (Jones et al. 2012) (Table 7.13).

7.6 Conclusions

In general, we find that the Canadian faculty who participated in our survery are international, from an educated family background, in long-term relationships, and often living with children at home. They have not worked in many institutions other than their current place of employment, and they have not worked many years outside of academe. Faculty in the Canadian study agree or strongly agree that scholarship ‘is best defined as the preparation and presentation of findings on original research’ and most indicate that their interests lie in both teaching and research, but with a leaning towards research. A majority see teaching and research as being compatible activities and a large majority regarded research as a form of reinforcement for their teaching. This latter response grew stronger as one moved up in academic rank and was consistently high across the three university types. A majority of faculty agreed that ‘scholarship’ includes the application of knowledge to real-life

Table 7.13 Job satisfaction of full-time faculty in Canada

	Very much deteriorated				Very much improved
Question					
Working conditions in higher ed.	13.7 %	25.8 %	37.9 %	18.2 %	4.3 %
By gender					
Male	13.3 %	23.9 %	36.9 %	21.6 %	4.4 %
Female	15.1 %	29.3 %	40.3 %	12.0 %	3.3 %
By Rank					
Assistant professor	9.1 %	19.5 %	55.4 %	11.7 %	4.4 %
Associate professor	14.7 %	30.2 %	34.1 %	17.2 %	3.9 %
Professor	16.4 %	26.7 %	28.2 %	24.1 %	4.6 %
By university type					
Medical/doctoral	14.3 %	24.8 %	38.4 %	17.3 %	5.3 %
Comprehensive	15.6 %	25.7 %	37.9 %	18.0 %	2.9 %
Primarily undergraduate	8.3 %	28.4 %	37.1 %	20.6 %	5.7 %
	Very low				Very high
Question					
Rate overall job satisfaction	3.3 %	5.8 %	17.1 %	47.9 %	25.9 %
By gender					
Male	3.8 %	5.0 %	14.7 %	45.5 %	31.0 %
Female	3.0 %	7.0 %	21.2 %	50.6 %	18.2 %
By rank					
Assistant professor	2.2 %	4.8 %	20.8 %	52.6 %	19.6 %
Associate professor	4.9 %	8.9 %	18.2 %	44.4 %	23.6 %
Professor	2.8 %	3.5 %	13.1 %	47.5 %	33.1 %
By university type					
Medical/doctoral	3.9 %	5.6 %	15.6 %	43.8 %	31.1 %
Comprehensive	3.4 %	6.8 %	18.3 %	48.6 %	22.8 %
Primarily undergraduate	2.0 %	3.6 %	17.3 %	54.8 %	22.3 %

Source: CAP Survey 2007/2008

settings and that professors have a professional obligation to apply their knowledge to problems in society. The survey respondents indicated a strong affiliation with their discipline or field, departments, and institutions. However, we also found that more than half of the faculty in the Canadian sample had considered major job changes within the 5 years leading up to the survey, most of those with a preference to leave, indicating that they had considered moving to another academic institution within Canada over other employment choices. A large majority of our respondents indicated that an academic career was worthwhile and would make the same choice if they were to start work again. This response grew stronger with increasing rank. Finally, while a minority of respondents (20–25 %) reported any improvement in their working conditions and a corresponding 40 % reported deterioration in working conditions, a large majority reported overall satisfaction with their job. Women

were more likely to report deterioration in working conditions and men more likely to report overall satisfaction. Full professors and those teaching in Primarily Undergraduate universities were more likely to rate the overall satisfaction with the job at a high level.

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Chapter 8
In and Out of the Laboratory: Herzberg, Job Satisfaction and the Attitudes of Finnish University Academics

Timo Aarrevaara and Ian R. Dobson

8.1 Introduction and Background

The aim of this chapter is to compare and contrast the job satisfaction enjoyed by university academic staff in Finland in laboratory and non-laboratory disciplines. The source of data for this study is the Changing Academic Profession (CAP) Survey, conducted in 2007/8 (International data set March 2010). Within the context of these data, laboratory disciplines include physical sciences, mathematics, computer sciences, engineering, manufacturing and construction, architecture, agriculture, medical science, health related sciences and life sciences. 'Social services' are also included in the laboratory-based group, because it is not possible to disentangle respondents in this sub-discipline, included with medical science in the international CAP. Non-laboratory disciplines include teacher training and education science, humanities and arts, social and behavioural sciences, business and administration, economics, and law.

One of the reasons for examining this bifurcation is that Finnish science and technology has been supported through a range of schemes aimed at bolstering Finnish innovation. Extensive government programmes have been carried out in several technology-oriented since the mid-1990s. For example, the Finnish Ministry of Education and Culture carried out an Information Industry Programme, investing around €174 m in the period 1998–2005. The aim of this programme was to enhance education leading to the awarding of university degrees in information technology, comprising a professional upgrading programme and expansions of undergraduate

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degree programmes (Kivistö and Aarrevaara 2005). There has also been an extensive virtual university programme (funded to approximately €23 m in the period 2001–2006 for universities to allocate according their own preferences). The government stressed the growth in the use of information and communication technology in teaching, and enhancement of expertise and its aim to strengthen the culture of development in the virtual university programme (Aarrevaara et al. 2007).

As with any form of taxonomy, imperfections accrue when cases from different groups are aggregated. For example, an academic teaching the history and philosophy of science might be a historian (i.e. with a non-laboratory background in the humanities), but could find themselves in a department in a faculty of science (i.e. in a laboratory-based department); and vice-versa. The CAP survey provided respondents with the option of defining their academic discipline according to their highest degree, their current academic unit and their current teaching. For this chapter, we opted for 'current academic unit' as the best indicator of the environment in which academics find themselves. In fact, in the Finnish sample, 23 university academics with their highest degree in non-laboratory disciplines were in a department within the laboratory-based disciplines and 21 Finnish university academics with their highest degree in a laboratory-based discipline were in a non-laboratory-based department. Terms such as 'laboratory-based disciplines' and 'laboratory-based departments' have been used interchangeably.

The rationale for undertaking analysis along discipline-based lines is that there is a history of emphasising science and technology in Finnish society. Most of the funding generated by special programmes in science and technology has been for work outside higher education, but there is considerable spin-off that has provided an indirect benefit to higher education. Apart from anything else, wide government support for technology means increased demand for those qualified in technology-based disciplines. The knock-on effect here is that universities will therefore need to maintain vibrant laboratory-based academic departments. 'The proposition, therefore, is that if Finnish scientists and technologists have been so well-supported by government-funded programmes, perhaps university academics involved in laboratory-based disciplines should be more motivated than their colleagues from other disciplines.'

Of all laboratory-based disciplines, it can be postulated that engineering has been 'the favoured son' (or daughter) in support and generosity from the education bureaucracy and Finnish research funding bodies. In 2010 the funding for Academy of Finland was €384.4 m and TEKES (the predominant Finnish funding authority for technology-based funding) for €610.8 m, which was about 40 % of all government funding for research and development. TEKES, which focuses its funding on the natural sciences and technology, networking with companies is emphasised. Funding for Strategic Centres for Science, Technology and Innovation (SHOK) have contributed to this development in recent years. In addition, the government has been particularly supportive of Finland's two major technology-based universities, particularly the recently established Aalto University. The new Universities Act (2009) (558/2009) moved universities from being a formal part of the state administration and bureaucracy, and strengthened their financial and administrative

autonomous status. As a part of university structure reforms universities became independent legal entities and ceased to be part of the state structures (Aarrevaara et al. 2009).

Finland has three 'universities of technology'. These are Aalto University, Tampere University of Technology (11,200 students and 1200 academic staff in 2009) and Lapeenranta University of Technology (5700 students and 580 academics), the latter two universities being located in regional cities. Aalto University in the capital (Helsinki) region was established via a merger between Finland's major technological university (the Helsinki University of Technology with about 14,400 students in 2009 and 2500 academic staff), with the Helsinki School of Economics (about 3500 students and 300 academic staff) and the University of Arts and Design (about 1900 students and 220 academic staff). The aim of this endeavour was to establish 'a world class university', which while a highly positive aspiration perhaps underplays the importance of the University of Helsinki, which is already shows up as a world class university in international league tables, especially among those from non-English language countries (The Times Higher Education 2008; Shanghai Jiao Tong 2008).

8.2 Enumeration: Characteristics of Finnish University Academics

Overall, there were 1452 responses from participants in the Finnish survey, and academics from both sides of Finland's binary higher education system were involved. In this chapter, we have considered responses from university academics only. The polytechnic sector is relatively new, having been established about 20 years ago, with a particular focus on technical higher education and regional development. The same extensive funding programmes have been targeted at both sides of Finland's binary system, but at this stage, comparing 'disciplines' in universities and 'study fields' in polytechnics is quite a challenge.

Of the 1452 valid questionnaires obtained from the Finnish CAP survey, the 1115 from university academics were analysed for this paper. Of these, 176, or 16.7 % did not identify their academic discipline. It is possible that some of the non-respondents to this question felt unable to identify with any of the disciplines listed.

Table 8.1 provides a summary of respondents according to seniority, gender and compares the CAP survey population with the national population of Finnish academics. In the Finnish survey, senior academics were defined as those occupying full professor and associate professor positions, or equivalent ranks. Senior academics represented 26.8 % of the Finnish sample in universities, and were represented slightly more in non-laboratory (28.2 %) than laboratory departments (25.8 %). This is an under-representation compared with the national population, in which 49.7 % of academics occupied senior posts.

Looking at senior academics in the CAP survey, 56.4 % were in laboratory-based departments, compared with 59.3 % of academics in junior ranks. The table also

Table 8.1 Finnish university academic staff in laboratory and non-laboratory departments by Gender: CAP Survey c.f. National Database

	Senior academics	Junior academics	Total	Percentage senior
National database (total)	3556	3593	7149	49.7
Women (n)	812	1931	2743	29.6
Women (%)	22.8	53.7	38.4	
CAP (total)	243	664	907	26.8
Women (n)	77	359	436	17.7
Women (%)	31.7	54.1	48.1	
CAP survey non-laboratory (total)	106	270	376	28.2
Women (n)	47	159	206	22.8
Women (%)	44.3	58.9	54.8	
CAP survey – laboratory (total)	137	394	531	25.8
Women (n)	30	200	230	13.0
Women (%)	21.9	50.8	43.3	
CAP survey – lab. % of total	56.4	59.3	58.5	
% women	39.0	55.7	52.8	

Source: CAP Survey 2007/2008
Question A10 'What is your academic rank?', and Question F1 'What is your gender?'

shows that 58.5 % of Finnish university respondents were in laboratory-based departments. This compares with the approximately 50 % of academics in such departments in all of Finland's universities (Ministry of Education and Culture 2010).

The table also divides the responding population by sex. Overall, just over 48 % were women, compared with 38.4 % in the overall academic population in Finnish universities. The laboratory-based disciplines had a lower proportion of men, where they represented 43.3 % of all laboratory-based academics. The equivalent figure among non-laboratory disciplines was 54.8 %.

On the matter of gender distributions, Fig. 8.1 compares the proportion of women that responded to the CAP survey questionnaire in laboratory and non-laboratory departments, compared with the total population from the national database. As can be seen, there is little disparity among junior academics when comparing the CAP survey with national figures, but there are differences among senior academics.

In the academic world, some academics have a leaning towards teaching and others a preference for research. The differences concerning whether academics' primary interest is one thing or another is presented in Table 8.2, and the distribution can be explained by reference to Finnish academic tradition. The academic profession in Finnish universities has research as its primary focus in the early stages of an academic career (Aarrevaara and Pekkola 2010). Applicants for academic posts at Finnish universities may have been appointed to them primarily according to their achievements in research, and research is of great importance when filling teaching posts. For example, at the University of Helsinki, a minimum requirement for someone holding a permanent teaching post is a PhD or an equivalent degree.

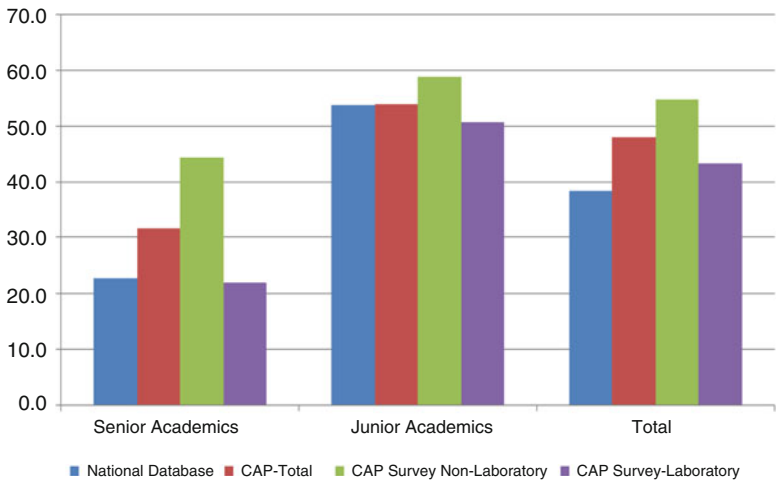

Fig. 8.1 Comparison of finish CAP data and National Database: percentage of women by academic rank and according to type of department (Source: CAP Survey 2007/2008)

Table 8.2 Preference for teaching over research of Finnish academics

Preference for teaching or research	Non-laboratory	Laboratory	Total	Non-laboratory (%)	Laboratory (%)	Total (%)
Primarily in teaching	35	20	55	9.0	3.7	5.9
In both – leaning towards teaching	61	76	137	15.7	14.0	14.7
In both – leaning towards research	185	235	420	47.7	43.2	45.1
Primarily in research	107	213	320	27.6	39.2	34.3
Total	388	544	932	100.0	100.0	100.0

Source: CAP Survey 2007/2008
Question B2 'Regarding your own preferences, do your interests lie *primarily* in teaching or in research?'

In Finnish universities, it is normal for an academic career in its early stages to be focussed on research, with the focus on teaching increasing with seniority. This also indicates that in the laboratory-based disciplines teaching work tasks are more regular in the early stages than in the non-laboratory areas. Finland therefore differs from the key reference countries of the CAP survey, because teaching is the focus of senior academic staff more often than in most countries.

Table 8.2 divides Finnish academics according to their leaning towards teaching or research. Overall, 740 academics out of 932 (79.4 %) responded that their preference was for research, or for teaching and research, but with a leaning towards research. Among laboratory-based academics, a higher proportion expressed a leaning towards research than their non-laboratory colleagues were: 82.4 % of laboratory-based academics (c.f. 75.3 % of academics from non-laboratory disciplines) responded.

Of the academics that expressed a preference for teaching, 63.6 % were in non-laboratory disciplines, compared with 36.4 % of academics in laboratory disciplines. At the other end of the spectrum, the figures are almost reversed, with 33.4 % of academics in non-laboratory disciplines claiming a preference 'primarily in research', compared with 66.6 % of academics in laboratory disciplines. Academics 'in the middle', that is, those identifying a preference in both teaching and learning were distributed approximately 45–55 % between non-laboratory and laboratory disciplines, respectively.

In seeking to establish the nature of differences between Finnish university academics in laboratory and non-laboratory departments, we examined the incomes and income streams reported by Finnish academics in their responses to the CAP survey. Obviously, income is highly correlated with seniority, but the difference in proportions of each in laboratory and non-laboratory disciplines was shown to be not great in Table 8.1. The salary system in Finland is highly regulated, but there is scope for differences between individuals, because the system is based on a mix of job demand levels and personal attributes (University of Helsinki n.d.). Salary differences between universities are not great. Before the Universities Act (2009) took effect from 1 January 2010, there was little scope for inter-institutional variations, and even if the new act had the potential to usher in a new era in competition between universities, the universities saw fit to establish a single body through which they would conduct negotiations with the various university labour unions (Kekäle 2008).

The top section of Table 8.3 and Fig. 8.2 provide a summary of average university salaries earned by laboratory and non-laboratory academics.

Table 8.3 Finnish university academic staff in laboratory and non-laboratory departments, by source of income and level of income (euros)

	Non-laboratory	Laboratory	Total	Non-laboratory (%)	Laboratory (%)	Total (%)
Income from 'your current university' (Euros)						
0–29,999	107	166	273	32.5	35.4	34.1
30,000–39,999	72	127	199	21.8	27.1	24.9
40,000–49,999	59	77	136	17.9	16.4	17.0
50,000–59,999	35	32	67	10.6	6.8	8.4
>59,999	57	67	124	17.3	14.3	15.5
Total	330	469	799	100.0	100.0	100.0
Income from 'other employers' (Euros)						
0	231	363	594	70.0	77.4	74.3
>0	99	106	205	30.0	22.6	25.7
Total	330	469	799	100.0	100.0	100.0
Income from 'self-employment' (Euros)						
0	270	400	670	81.8	85.3	83.9
>0	60	69	129	18.2	14.7	16.1
Total	330	469	799	100.0	100.0	100.0

Source: CAP Survey 2007/2008

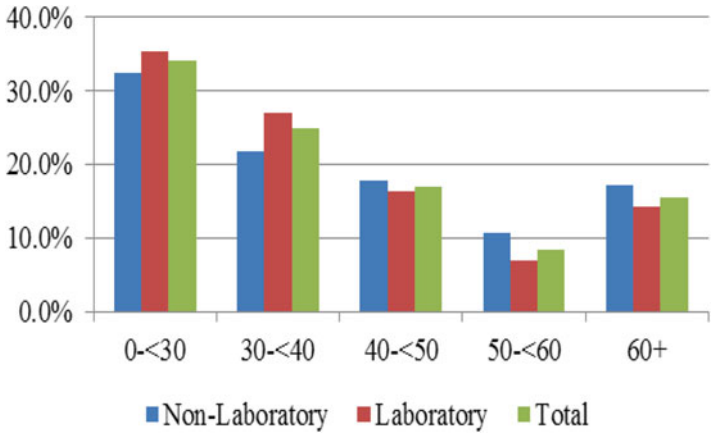

Fig. 8.2 Finnish university academic staff in laboratory and non-laboratory departments, by level of income from 'your current university' ('000 Euros) (Source: CAP Survey 2007/2008)

According to responses to the CAP survey, academics in laboratory-based departments earn higher salaries from their current university than their non-laboratory counterparts in lower to middle ranges do, but thereafter, it appears that non-laboratory academics earn more, on average. This observation parallels the distribution of staff between senior and junior academics. As could be seen in Table 8.1, 74.1 % of academic staffing in laboratory-based departments were junior academics, compare with 71.9 % of those in non-laboratory departments.

The relative number of senior scholars is higher in the other than laboratory disciplines. This is because the growth in laboratory disciplines has been stronger than other disciplines and they have employed new academic staff more often than the other disciplines. These new academics tend to be young, early career academics.

The other two sections of Table 8.2 show a minority of Finnish academics generate an income from outside their own university. However, 30.0 % of non-laboratory-based academics reported having an income from another employer (compared with 22.6 % for laboratory-based academics), and 18.2 % and 14.7 % of non-laboratory and laboratory academics reported an income from self-employment.

These figures suggest that the great majority Finnish academics are dependent on their own university for their income. An additional question from the CAP survey that asked a direct question about multiple income sources (Question A8) was not asked in the Finnish survey.

Table 8.4 provides further basis for seeking to find differences between academics in laboratory and non-laboratory departments. Looking first at teaching hours while classes are in session, the table shows that laboratory-based staff spend fewer hours in teaching. In fact, among those in laboratory-based departments, nearly 55 % spent fewer than 11 h per week on teaching and teaching-related activities, compared with about 43 % of academics in non-laboratory departments. However, about 23 % of academics in both laboratory and non-laboratory departments spent between

Table 8.4 Finnish university academic staff in laboratory and non-laboratory departments, by weekly hours spent on teaching (when classes are in session or not in session)

	Teaching hours: when classes are in session				Teaching hours: when classes are not in session			
	Non-laboratory (%)	Laboratory (%)	Total (%)	Total no.	Non-laboratory (%)	Laboratory (%)	Total (%)	Total no.
0 h	14.3	20.6	18.0	152	29.3	33.4	31.7	226
1–10 h	28.6	34.3	32.0	270	58.0	54.5	56.0	399
11–20 h	22.6	23.2	23.0	194	8.3	10.4	9.5	68
21–30 h	21.7	12.1	16.1	136	3.0	1.2	2.0	14
>30 h	12.9	9.7	11.0	93	1.3	0.5	0.8	6
Total	100.0	100.0	100.0	845	100.0	100.0	100.0	713

Source: CAP Survey 2007/2008

11 and 20 h on teaching and related activities during the time when classes are in session. It can also be seen that more non-laboratory-based academics spend more hours on teaching: about 44 % spent 21 or more hours on teaching, compared with about 35 % of academics from laboratory departments.

When classes are not in session, fewer hours are spent in classes (by definition), but those with a preference or leaning towards teaching will still spend more of their time on teaching-related duties than academics with a stronger research focus. The results reported in the previous paragraph indicated a stronger teaching focus among non-laboratory academics, but this leaning is less obvious when classes are not in session. About 87 % of laboratory-based academics and their non-laboratory-based colleagues spent fewer than 10 h per week on teaching-related duties when classes were not in session. Although most teaching academics do no teaching out of session, many continue to be involved in 'teaching preparation. However, in addition to this, some academic teachers do continuing teaching, to students enrolled in open university programmes, summer university programmes and classes in continuing education (in MBAs, for instance). The CAP data do not tell us explicity about these things.

Moving on to an examination of research, Table 8.5 examines research during and outside teaching periods. During teaching periods, more laboratory-based academics spend more hours on research than academics in non-laboratory departments. During classes, about 61 % of laboratory-based academics spent 21 or more hours engaged in research, compared with 57 % of academics from non-laboratory departments. During non-reaching periods, there is little difference between the activities on academics from laboratory and non-laboratory departments, because teaching hours are mainly preparing for teaching or separate classes such as summer schools. About 83 % of non-laboratory-based academics and 82 % of their laboratory-based counterparts spent in excess of 11 h a week involved on research and related activities when classes were not in session.

As a corollary to analysis about teaching and research, Table 8.6 summarises CAP data for Finnish university academics to confirm that academics that spend

Table 8.5 Finnish university academic staff in laboratory and non-laboratory departments, by weekly hours spent on research (when classes are in session or not in session)

	Research hours: when classes are in session				Research hours: when classes are not in session			
	Non-laboratory (%)	Laboratory (%)	Total (%)	Total no.	Non-laboratory (%)	Laboratory (%)	Total (%)	Total no.
0 h	7.4	6.3	6.7	57	4.0	4.4	4.2	30
1–10 h	35.4	33.1	34.1	288	12.7	13.8	13.3	95
11–20 h	23.4	18.2	20.4	172	17.3	20.8	19.4	138
21–30 h	11.7	15.4	13.8	117	28.7	19.6	23.4	167
>30 h	22.0	27.1	25.0	211	37.3	41.4	39.7	283
Total	100.0	100.0	100.0	845	100.0	100.0	100.0	713

Source: CAP Survey 2007/2008

Table 8.6 Finnish university academic staff in laboratory and non-laboratory departments, by preference for teaching or research, average hours taught and number of papers published

	Non-laboratory		Laboratory		
Preference for →	Teaching	Research	Teaching	Research	Total
Academic staff (n)	96	292	96	448	932
Teaching:					
Average hours when teaching is in session	26.0	12.1	22.8	10.3	15.4
Average hours when teaching not in session	6.6	3.9	6.0	3.0	4.3
Publishing papers:					
No papers (n)	15	34	19	75	143
No papers (%)	25.9	12.1	24.4	17.5	16.9
1–3 (n)	28	110	34	148	320
1–3 (%)	48.3	39.3	43.6	34.6	37.9
>3 (n)	15	136	25	205	381
>3 (%)	25.9	48.6	32.1	47.9	45.1
Published one or more papers (n)	43	246	59	353	701
Published one or more papers (%)	74.1	87.9	75.6	82.5	83.1
Total (n)	58	280	78	428	844
Total (%)	6.9	33.2	9.2	50.7	100.0

Source: CAP Survey 2007/2008

more time engaged on teaching and related duties publish less than their research-oriented colleagues**.**

Among academic staff from non-laboratory departments, on average those with a preference for teaching taught 26.0 h per week during teaching periods, and 6.6 h per week when teaching was in recess. Those from laboratory-based departments taught slightly fewer hours per week, being 22.8 and 6.0 h, respectively. Staff with

a preference for research in non-laboratory departments spent 12.1 and 3.9 h per week, in teaching periods, and outside them, respectively. The equivalent group from laboratory-based departments also taught fewer hours: 10.3 h and 3.0 h, respectively.

These distributions are partly replicated in terms of research outputs. Taking 'the number of articles published in an academic book or journal' as a proxy for research productivity, we find that among Finnish university academics in non-laboratory departments with a preference for teaching, 74.1 % had published a paper in the past 3 years, compared with 87.9 % with a preference for research. Among laboratory-based academics, 75.6 % with a preference for teaching had published a paper, about the same proportion as with non-laboratory academics, but 82.5 % of laboratory-based academics with a preference for research had published. This proportion is 5.4 % points less than for equivalently interested non-laboratory academics. Perhaps this is an unexpected result, but the higher proportion of junior research-preferring academics in laboratory departments can explain this result.

Looking at other information from Table 8.6 it can be seen that 25.9 % of non-laboratory academics with a preference for teaching reported publishing no papers over the past 3 years, compared with 24.4 % of the laboratory-based group. Only 12.1 % of research-preferring academics from non-laboratory universities failed to produce a paper, compared with 17.5 % of their laboratory-based colleagues. The reason here might be the same as the one suggested earlier: that there is a higher proportion of junior academics in this category in laboratory-based departments. However it should be recalled that we have used paper publication as a surrogate for research activity, and of course, academics might be publish books, reports or producing other forms of research output.

Similar patterns pertain for academics that did publish an article in the past 3 years. Among those preferring teaching, 48.3 % of non-laboratory academics published between one and three papers, and 25.9 % had published more than three. These figures compare with 43.6 % and 32.1 % of laboratory-based academics with a teaching bent. Meanwhile, 39.3 % and 34.6 % of non-laboratory and laboratory-based academics that preferred research had published one to three papers, and 48.6 % and 47.9 %, respectively, had published more than three papers in the past 3 years.

The data and commentary in this section were intended to examine differences between laboratory-based and non-laboratory-based departments. In summary, it can be demonstrated that a higher proportion all academics in non-laboratory-based departments were senior academics, and that a lower proportion of men featured in non-laboratory departments. Further, the preference for teaching was higher in non-laboratory departments, with a reciprocal lower proportion of academics in these departments expressing a preference for research. From earlier analyses of the CAP data set it is known that in Finland, there is a tendency for a higher proportion of senior academics to claim a preference for teaching over research than is typically the case in other countries (Aarrevaara et al. 2011). The reason for this is the academic 'apprenticeship' system that pertains in Finland. Finnish universities employ as junior academics many PhD students, who primarily undertake the research necessary to complete their doctoral dissertation. Their preference in early career

stages, therefore, is for research, but these junior academics also undertake some teaching and other duties (Aarrevaara et al. 2011).

Salary differentials were not great, but laboratory-based academics earned more on average from their current university than non-laboratory counterparts in lower to middle ranges did. At higher salary ranges, non-laboratory academics earned more, on average. Academics from non-laboratory-based departments seemed more likely to have second employers, or to be self-employed, in addition to their 'your current university'.

8.3 The Theoretical Perspective: How Should We Define Satisfaction?

There is a large body of literature on the topic of job satisfaction in general, and a considerable amount on academic job satisfaction in particular. It is not our aim to discuss the pros and cons of the theories that abound in this area. Instead, for this chapter, we have decided to provide a theoretical basis that has been adapted from the work of Frederick Herzberg. His studies on job satisfaction are among the most referred to in the scholarly literature. Herzberg's multidimensional Two-factor theory from the late 1960s evolved from earlier developments of motivation theory in the 1950s (Herzberg et al. 1959). These developments verified that job satisfaction is not uni-dimensional, but that work related variables contribute to job satisfaction are separate from those to contribute dissatisfaction (Lacy and Sheehan 1997, p. 306).

Descriptions and interpretations of Herzberg's theory have been written up many times in the past. In summary, Two-factor theory suggests that the elements of work that generate positive satisfaction-intrinsic factors as 'motivators', such as recognition and responsibility or satisfaction with work itself (Iiacqua et al. 1995; Smerek and Peterson 2007, 248) are different from those elements that cause dissatisfaction if they are not present ('hygiene factors'). Hygiene factors (status, security and salary, for example), however, do not necessarily provide positive job satisfaction. According to this theory, in the context of academic staff, university managers must both ensure that employee dissatisfaction is avoided by maintaining adequate salaries and working conditions, but they must also enable a situation that will allow academics to glean job satisfaction with their jobs through challenge and responsibility. In considering questions from the CAP survey, we defined motivators to be matters relating to teaching or research orientation, perceptions of the job as a source of personal strain, and considering a job change, including consideration of alternatives to an academic career. Hygiene factors, therefore, relate to facilities, resources, support personnel, and perceptions about academic work, management and working conditions. Results of a study by Marston and Brunetti (2009) showed "the importance of professional over practical motivators, and of teaching and scholarship over service" (p. 323). Earlier studies have offered evidence that both

sides are important for job satisfaction. Academics' job satisfaction is higher if they respect their co-workers, their career is in some ways secure and they are satisfied with management and public policy (Bozeman and Gaughan 2011).

Herzberg provides an excellent theoretical underpinning against which CAP Survey data can be analysed. The role of managers is to reduce dissatisfaction caused by the various hygiene factors, but these do not necessarily increase motivation. The nature of CAP is that the questionnaire is that its focus is on Herzberg's so-called 'hygiene' factors, something it has in common with most surveys of its type. It is possible to analyse how elements of the work environment are important for job satisfaction. The hygiene factors may cause dissatisfaction if they are not satisfactional in respondents' minds. However, CAP also contained questions that permit an analysis based around the motivators that his theory alleges are the causes of job satisfaction.

On the other hand, just because a university's senior management improves the hygiene factors this action will not necessarily lead to increased job satisfaction, even if it stems the growth of job dissatisfaction. For the academic profession, the work itself and the nature of that work may be key factors in motivation. Therefore, academic work can play a key role in the level of academic job satisfaction. From the point of view of this paper, hygiene factors include facilities, resources, support personnel, and perceptions of academic work, management and working conditions. Similarly, we interpret the motivational factors as teaching/research orientation, perceptions of the job as a source of personal strain, and considering a job change, including consideration of alternatives to an academic career.

8.4 Satisfaction and Dissatisfaction by the Numbers

In the CAP survey, the overall satisfaction described by respondents varies according to a range of other variables. For example, looking at all responses to the 2007/8 CAP survey, about 75 % of occupants of senior-level positions described their overall satisfaction as very high or high, but only 60 % of their colleagues at other levels. This trend was also seen in Finland's reference countries during the Carnegie Survey at the beginning of the 1990s, as two-thirds of the European professors expressed their satisfaction with their job situation as a whole, whereas others were less satisfied (Enders and Teichler 1997 p. 353). (Finland did not participate in the Carnegie study). Similarly, 68 % of male respondents reported very high or high overall job satisfaction, but only 60 % of female respondents did so. The worldwide response of academics from all 18 of the original participating nations according to whether they are in a laboratory-based or non-laboratory-based academic unit does not show this variability. Between 64 and 65 % of academics in both discipline areas described their overall job satisfaction as very high or high.

8.4.1 (Dis)Satisfaction with Facilities and Services

According to Herzbergian logic, one set of factors that keep job dissatisfaction at bay relates to having good support and infrastructure to work with Fig. 8.2 provides a summary of the findings relating to perceptions about a range of facilities and services. As can be seen, academics tended to rate the quality of classrooms, technology for teaching, computer facilities and libraries fairly highly, whether those academics were in departments from laboratory-based or non-laboratory disciplines. Fewer academics held the view that research equipment and research support staff were excellent or good, and academics from non-laboratory disciplines had a lower opinion that their colleagues from laboratory-based disciplines.

Figure 8.2 shows that laboratory and non-laboratory academics evaluated facilities and services fairly similarly. There is a considerable gap between the two groups of academics in their rating of laboratories but perhaps that is because about half of the non-laboratory academics rated them as neither good nor bad. Non-laboratory academics also evaluated research equipment and research support staff lower than their colleagues from laboratory-based departments. It is reasonable to surmise from these results that facilities are rated highly by Finnish academics, but the relative paucity of teaching and research support could have a negative impact. It is also possible to interpret these results as an indication that many teachers do not want 'support' for their instruction. In Finland, freedom of teaching in the classroom is guaranteed by legislation, and from this perspective, it is perceived as being at the core of academic freedom.

8.4.2 (Dis)Satisfaction with Governance and Management

Another aspect of job dissatisfaction for academic staff also accrues from their perception of how good management and communication are, and whether there is a feeling that those at the top are supportive. In order to examine the difference in perception between laboratory- and non-laboratory-based Finnish academics, we plotted academics' responses to a range of questions about perceptions of activities and management at their institutions. The results are shown in Fig. 8.3, which clearly demonstrates that there is little difference in the perception of academic staff on some issues, whether they are laboratory- or non-laboratory-based. Neither group agreed that administrative processes were efficient, with only about 10 % of each strongly agreeing or agreeing with the proposition. However, in the main, staff from laboratory-based departments presented a more positive attitude than their non-laboratory colleagues. In particular, the laboratory-based academics seemed to feel they were supported by administrators (see Legend items 1 and 4–7, for example). There is a 5–7 % points variation between the two groups of academics on these issues (Fig. 8.4).

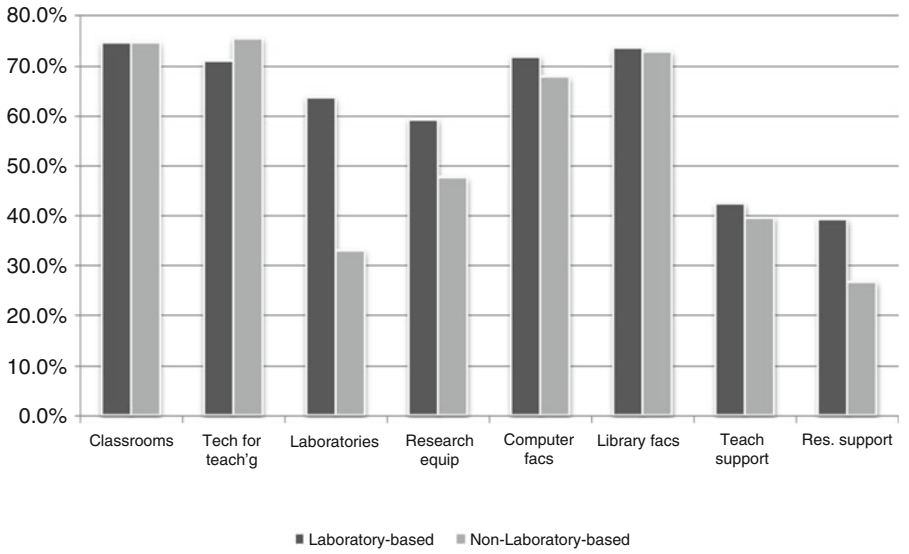

Fig. 8.3 Finnish university academic staff: perception of facilities and services (Source: CAP Survey 2007/2008; Question B3 (portions): At your institution, how would you evaluate each of the following facilities, resources, or personnel you need to support your work?)

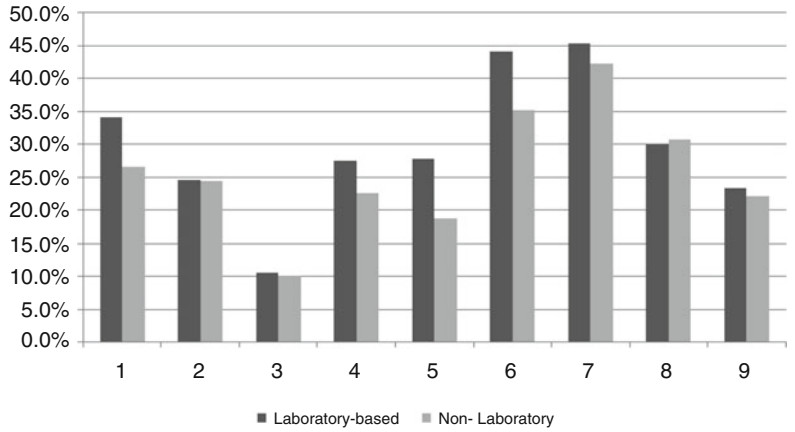

Fig. 8.4 Finnish university academic staff: perception of activities and management (Source: CAP Survey 2007/2008; Questions E4 and E5)
Lengend: For all collumns 'proportion of academics that strongly agreed or agreed that …'
1 there is good communication between management and academics (E4_2)
2 there is collegiality in decision making (E4_4)
3 administrative processes are efficient (Reverse coded) (E4_6)
4 administrative staff have a supportive attitude towards teaching (E4_7)
5 administrative staff have a supportive attitude towards research (E4_8)
6 top-level administrators provide competent leadership (E5_1)
7 I am kept informed about what is going on… (E5_2)
8 there is adequate academic staff involvement (Reverse coded) (E5_3)
9 the administration supports academic freedom (E5_5)

8.4.3 (Dis)Satisfaction with the Academic Profession

Tables 8.5 and 8.6 present two aspects of the attractiveness of the academic profession in Finland, a reflection on job satisfaction in Finnish universities. First, if a person is satisfied with their current position, they are less likely to seek employment elsewhere. This is an indication of positive motivation for academic work, and the tables permit a comparison between laboratory-based and other disciplines. In the context of Herzberg's Two-factor theory, these issues are at the centre of academic motivation and job satisfaction.

Table 8.2 summarises Finnish university academics propensity to 'look elsewhere'. The CAP survey inquired about whether academics had considered moving to management positions, other academic positions, domestic and international, or to positions outside academia. Few Finnish academics were attracted by management positions in their own institution: 9.5 % and 8.1 % for laboratory- and non-laboratory-based academics, respectively. Nearly 20 % of laboratory-based academics were attracted by academic positions at other domestic institutions, while 26.3 % looked abroad. Equivalent proportions of non-laboratory-based academics were 25.5 % and 22.5 % for domestic and overseas positions, respectively. Just over a half of laboratory-based and more than one-third of non-laboratory-based academics said that they'd considered moving to work outside higher education. It should not please senior university management to learn that over half of their scientific workforce had considered leaving the sector. It is perhaps an indication of the relatively low salaries paid to the highly qualified university workforce. One could also conjecture that the laboratory-based proportion is higher because academics in that section of the academic workforce have skills that are more easily transportable to non-academic work in all stages of academic career. Overall, 59.8 % of academics from non-laboratory departments and 68.4 % of their colleagues from laboratory-based departments had not considered making any major changes in their job (per responses to Question A14_5) (Table 8.7).

Table 8.6 further explores job satisfaction by asking academics whether they find that it is a poor time for young person to begin an academic career, or whether

Table 8.7 Finnish university academic staff in laboratory and non- laboratory disciplines. Number and proportion that had considered a major job change

	Non-laboratory	Laboratory	Total	Non-laboratory (%)	Laboratory (%)	Total (%)
To a managerial position	40	62	102	10.8	11.7	11.3
To an academic position- domestic	96	108	204	25.9	20.5	22.7
To an academic position- abroad	84	138	222	22.6	26.1	24.7
To work outside higher education	141	270	411	38.0	51.1	45.7

Source: CAP Survey 2007/2008
Question A14: 'Within the last 5 years, have you considered a major change in your job…'

they'd 'do it again', given the opportunity. It seems that 40.4 % of academics from laboratory-based and 58.1 % of academics from non-laboratory departments would 'not' recommend an academic career to the young. At the other end of the scale, 33.8 % of academics from laboratory-based disciplines disagreed or strongly disagreed with that statement, but only 18.1 % of those from non-laboratory departments. Around one-quarter of academics from all departments were neutral on the issue. Perhaps these revelations present another aspect of the opinions of the academic workforce that should be of concern to senior management.

Most academics, however, would become an academic, given their time over. This is the opinion of academics overall, it would seem. Only 18.2 % of laboratory-based and 17.4 % of non-laboratory based academics said they would not repeat their current career. Similarly, about 62 % of both laboratory and non-laboratory academics disagree with the statement and about one-fifth were neutral.

However, based on Finnish responses to the CAP survey, academic work presents its practitioners with considerable strain. Nearly half of both laboratory- and non-laboratory-based academics said that their job was a source of considerable personal strain, with a slightly higher proportion of non-laboratory staff expressing this opinion (Table 8.8).

Table 8.9 explores further the source of satisfaction/dissatisfaction by examining perceptions of influence. More laboratory-based academics, it would seem, feel that they have no influence at all at either the faculty or institutional levels. Similar proportions of academics lacked influence at the departmental level. At the other extreme, more non-laboratory academics than laboratory-based academics felt influential at the departmental level (46.9 % c.f. 41.3 %), and at the faculty level

Table 8.8 Finnish university academic staff in laboratory and non-laboratory disciplines. Responses to questions

	… this is a poor time for a young person to begin an academic career		… I would not become an academic again		… my job is source of considerable personal strain…	
	Non-laboratory	Laboratory	Non-laboratory	Laboratory	Non-laboratory	Laboratory
Agree/strongly agree	222	214	67	97	186	241
Neutral	91	137	80	104	109	167
Disagree/strongly disagree	69	179	239	332	91	125
Total	382	530	386	533	386	533
Agree/strongly agree	58.1 %	40.4 %	17.4 %	18.2 %	48.2 %	45.2 %
Neutral	23.8 %	25.8 %	20.7 %	19.5 %	28.2 %	31.3 %
Disagree/strongly disagree	18.1 %	33.8 %	61.9 %	62.3 %	23.6 %	23.5 %
Total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %

Source: CAP Survey 2007/2008
Question B5: 'Please indicate your views on the following….'

Table 8.9 Finnish university academic staff in laboratory and non-laboratory disciplines. Responses to Question E2: 'How influential are you, personally, in helping to shape key academic policies?'

	I am influential at the:					
	Departmental level		Faculty level		Institutional level	
	Non-laboratory	Laboratory	Non-laboratory	Laboratory	Non-laboratory	Laboratory
Influential or very influential	159	181	60	56	26	32
A little influential	135	200	86	116	75	80
Not influential	45	57	99	170	128	191
Total	339	438	245	342	229	303
Influential or very influential	46.9 %	41.3 %	24.5 %	16.4 %	11.4 %	10.6 %
A little influential	39.8 %	45.7 %	35.1 %	33.9 %	32.8 %	26.4 %
Not influential	13.3 %	13.0 %	40.4 %	49.7 %	55.9 %	63.0 %
Total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %

Source: CAP Survey 2007/2008

(24.5 % c.f. 16.4 %). However, similar proportions felt influential at the institutional level (11.4 % c.f. 10.6 %).

Looking at academic staff grouped in this way suggests that university management has a good grip on most of Herzberg's hygiene factors, but that perhaps things are a little shaky in terms of what motivates academics. Although there is overlap, it could be that even if hygiene-related job dissatisfaction is not too high, neither is motivational job satisfaction.

8.4.4 Overall Satisfaction, and Has It Got Better?

Irrespective of what academics have said about other aspects of their working life, the ultimate test of job satisfaction can be established by simply asking 'how would you rate your overall satisfaction with your current job? This is precisely what occurred in the 2007/8 CAP Survey. Over 70 % of non-laboratory academics rated their overall satisfaction as very high or high, compared with 66.8 % of laboratory-based academics. Fewer than 10 % of respondents rated their job satisfaction in negative terms. The closeness of the results on this matter suggest that in this regard at least, 'satisfaction' can be dealt with in a generic fashion, without the need to assume differences between laboratory and non-laboratory disciplines (Table 8.10).

However, the situation looks less positive when academics were asked to consider whether their profession had improved over time. The largest proportions of both laboratory-based and other academic staff believed there had been no change

Table 8.10 Finnish university academic staff in laboratory and non-laboratory departments: Overall job satisfaction

	Non-laboratory	Laboratory	Total	Non-laboratory (%)	Laboratory (%)	Total (%)
Very high	48	72	120	12.3	13.3	12.9
High	227	290	517	58.2	53.5	55.5
Neutral	83	128	211	21.3	23.6	22.6
Low	24	44	68	6.2	8.1	7.3
Very low	8	8	16	2.1	1.5	1.7
Total	390	542	932	100.0	100.0	100.0

Source: CAP Survey 2007/2008
Question B6: 'How would you rate your overall satisfaction with your current job?'

Table 8.11 Finnish university academic staff in laboratory and non-laboratory departments: have overall working conditions improved or declined?

	Non-laboratory	Laboratory	Total	Non-laboratory (%)	Laboratory (%)	Total (%)
Very much improved	22	30	52	5.7	5.6	5.7
Improved	67	122	189	17.5	23.0	20.7
Neutral	144	214	358	37.6	40.3	39.2
Deteriorated	101	123	224	26.4	23.2	24.5
Very much deteriorated	49	42	91	12.8	7.9	10.0
Total	383	531	914	100.0	100.0	100.0

Source: CAP Survey 2007/2008
Question B7

(40.3 and 37.6 %, respectively). However, more academics thought working conditions had deteriorated than thought they had improved. In the case of laboratory-based academics, 31.1 % thought things had deteriorated, but only 28.6 % thought conditions to be improved. For the non-laboratory group, the equivalent figures were 39.2 % and 23.2 %, respectively.

It is clear, therefore, that those in the laboratory disciplines see their lot as being better than academics in non-laboratory disciplines (Table 8.11).

8.5 Conclusions

In this chapter, we have discussed the factors affecting job satisfaction and dissatisfaction based on data from Finland's CAP Survey carried out in 2007/8. We examined the data through the framework of Herzberg's Two-factor theory. The Finnish CAP data show that academics in laboratory-based disciplines seem to perceive a

slightly better set of conditions than in academics from non-laboratory disciplines. Based on the variations between the two groups on issues associated with governance, such as leadership, atmosphere and communication, respondents from laboratory disciplines indicated a higher level of satisfaction with the corresponding respondents from non-laboratory disciplines. In terms of Herzberg, recognition, the work itself, responsibility, advancement, and growth are the factors which do not cause job dissatisfaction, even if academics find themselves in poorly managed areas.

Looking first at Herzberg's 'motivation' factors, the key motivation for job satisfaction is the work itself. If the work is not perceived as being at the appropriate level, we have assumed that the respondents will have considered major job changes within the last 5 years. The results also suggest that most university researchers and teachers are willing to consider alternative jobs. Respondents from laboratory disciplines seem to have more opportunities to leave their universities, and to work in other labour market sectors.

The positive attitude to change by academics from the laboratory disciplines is also reflected in the smaller proportions that had considered a change to another academic post in Finland (20.5 % compared with 25.9 % for academics from non-laboratory disciplines), an indication that these respondents are satisfied with their existing departments. However, more laboratory-based academics had considered a move abroad (26.1 %, compared with 22.6 % for non-laboratory academics), but that might indicate higher potential mobility for academics in science, medicine and engineering, compared with those in disciplines such as law, education, the humanities and the social sciences. Perhaps these 'chalk and talk' disciplines (when it comes to teaching) are less transportable. However, just over half of laboratory-based academics had considered a move out of academia, compared with 38.0 % for academics from non-laboratory disciplines. Of course, this might also indicate the higher transportability of technology-related academic work. Many laboratory-based academics could find work outside universities, such as in independent research institutes, or other private sector enterprises.

Still, 40 % of respondents in laboratory disciplines considered now to be a poor time to begin an academic career. The corresponding figure for non-laboratory disciplines was 58.1 %. However, there was relative agreement between laboratory and non-laboratory academics with respect to the suitability of an academic career. Similar proportions agreed that that they would not start an academic career, if they had their time over (18.2 % and 17.4 % for laboratory and non-laboratory academics, respectively), with 20 % of both responding neutrally, and just over 60 % of both groups disagreeing or strongly disagreeing. Respondents in laboratory-disciplines are also considering managerial posts or change to academic post in another country more often than in other disciplines.

Likewise, similar proportions of respondents found their work to be a source of considerable personal strain, but slightly fewer laboratory-based academics declaring this to be so (45.2 % c.f. 48.3 %). The evidence suggests two motivation-related reasons, which explain the results in this respect. Laboratory work disciplines employed in groups of more than others, and they focus on research (work as itself) more than the others. The higher number of junior academics partly explains these results.

In this chapter, we make conclusions relating to Herzberg's 'hygiene' factors and the CAP Survey responses by Finnish academics. As described earlier, a number of education and ICT investments have been carried out at Finnish universities. It is therefore not surprising that the respondents are very satisfied with the computer and library facilities as well as in teaching technology (ICT in educational use), and their classrooms. Respondents from laboratory-based departments are more satisfied than other respondents with the facilities and service conditions that have come about in the broad areas of national funding programmes. In the CAP questionnaire, these included laboratories, research equipment, computer facilities and research support staff. There were no significant differences regarding attitudes to classrooms or the library facilities, which fall under general service and infrastructure. These are part of universities' regular development policy. Still, general attitudes to improving of working conditions are slightly more positive from academics in laboratory-based disciplines (28.6 %) than those in other disciplines (23.2 %).

In addition, in the matters concerning management, the staff within laboratory-based departments indicated more positive attitudes than their counterparts in non-laboratory departments. These include management and communication between academics, support from non-academic staff on research and teaching, respect for top-level administrators' competent leadership, and the possibility of being informed what is going on in respondents' higher education institutions. There were no meaningful differences in attitudes concerning collegiality in decision making and the administration's support of academic freedom. These are matters of universities' autonomy and do not receive direct financial support from any national programme.

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Chapter 9
A Portrait of the Changing Academic Profession in the Netherlands

Harry van der Kaap and Egbert de Weert

9.1 The Dutch National Context

The Dutch higher education system can be classified as a binary system with a clear distinction between the (research) universities and the 'other institutions'. There are 13 universities, nine of which are covering a wide range of academic disciplines, three mainly in science and engineering, and another in agricultural science. In addition there is the Open University. Scientific research is a major task for universities alongside their teaching and most universities have organized these tasks in separate settings. In addition there are a number independent research institutes under the umbrella of the Dutch Royal Academy of Sciences (mainly in the field of life sciences, humanities and social sciences) and the Dutch Research Council.

Alongside the research universities the 'other institutions' or hogescholen (HBO) have been developed since the 1970s when colleges for higher professional training were upgraded. Each college had their own specialist field of study. Because of the sector's fragmented character, the government initiated in the 1980s major reforms resulting in the merging of more than 400 smaller colleges into large, multi-faceted institutions providing a wide range of professional courses in fields like engineering, health professions, social and cultural work, agriculture, teacher education, and the arts.

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All these courses have a standard period of study of 4 years leading to the bachelor degree. In addition, institutions offer short-cycle (2-year) degrees and increasingly master degrees in particular professional areas. In the international context these institutions adopted the name 'Universities of Applied Sciences' (hereafter UAS) which has been recognized by the Dutch Government.

Today there are 38 publicly funded UAS. The number of students increased in less than 20 years from 259,000 in 1992 to 420,000 in 2012. This is 65 % of the total student population against 35 % for universities. The end of this growth is not in sight and predictions are that the UAS will have some 20 % more first year students by 2020 (Committee Veerman 2010).

Although there are universities and UAS with a denominational foundation, they all fall under the public system and are publicly funded. In addition there are some private for-profit institutions that are active on the higher education market mainly in short-cycle course provision, but they play a minor role in the system.

The following main drivers are currently dominating the higher education policy climate.

First, the relationship between universities and the UAS which is not a static one but is continuously evolving. In most recent policy documents the distinctive tasks assigned to them have been stressed referring to the two basic orientations in the system: a focus on research and a focus on professions. The main task of the UAS is to provide theoretical and practical training with an explicit vocational orientation and to engage in close collaboration with the various employment fields. Since the last decade they also have been assigned a research task which is applied or practice-oriented with a focus on transferring and developing knowledge for business and for the advancement of professional practice. The Dutch government supports this development by augmenting the research capacity of these institutions mainly through earmarked funding. This has led to an extension of the working tasks of the faculty of these institutions. In view of this growing research task of UAS, new staff categories have been created at these institutions who have been assigned a research role with a special view to reinforce the contacts with the respective professional fields and companies. There is also much effort to upgrade the existing staff and equip them with a minimum of research training up to the PhD level. This profiling of UAS has an impact on the professional identities of the faculty in the different stages of their careers.

Second, the governance structure of universities and UAS has developed over the years towards a strengthening of managerial self-governance. There is much discretionary room regarding budgeting, appointment and management of academic staff, and the internal organizational structure. State regulation, however, has not vanished and through funding mechanisms the state maintains control over the system. This is most notable in the funding of research such as a shift of the proportion of basic funding towards the funding by the research council. This implies that research policy is increasingly focusing on targeted research and academics are required to demonstrate the economic impact of their research, thereby diminishing the autonomy to pursue their own research interests. Academic researchers are forced to acquire an increasing proportion of their research funding on a very competitive basis. For many this is a bureaucratic nightmare as the outcomes are uncertain even

for excellent proposals. The chances to be successful have decreased as the acceptance rate for innovative research proposals declined from 21 % in the period 2002–2006 to 17 % in 2010 (VSNU 2012).

Third, current government policies focus on the increase of R&D investment which compared to the OECD average is relatively low. The designation of high priority areas ('top-sectors') aim to create focus and mass in research and HE institutions are forced to collaborate with business and industry and to engage in public-private partnerships. This requirement of co-financing induces the influence of external actors on research. Consequently lower research budgets will be available for those scientific domains that fall outside these top-sectors and generally diminish the budget for fundamental research that is not co-financed (VSNU 2012: 78).

Fourth, accountability requirements have been strengthened in addition to the standard quality assessment procedures regarding research and teaching. This is occurring in a process of performance agreements between individual institutions and the government. These agreements include measurable outcomes regarding the educational process in particular on study progress and student success rates, social and economic relevance of research, and valorization of research outcomes. In order to bring about more differentiation in the system, the government applies an incentive form of steering on the basis of these agreements with institutions about their envisaged performances and chosen profiles.

These drivers constitute the context of the changing academic profession in both universities and Universities of Applied Sciences. This chapter first describes how the CAP survey was carried out in the Netherlands. Next the personal backgrounds, attitudes toward careers and career trajectories, the views on scholarship and job satisfaction will be discussed. In particular attention will be paid to the gender factor and whether differences regarding teaching and research may account for the relative low representation women especially in the higher academic ranks.

9.2 The Dutch CAP Survey

The survey concerns a representative sample of the staff in all academic ranks charged with teaching and/or research tasks at (research) universities and at UAS.

The university professoriate consists of three main ranks: professor, university main lecturer (*Universitair Hoofddocent-UHD*) and university lecturer (*Universitair Docent-UD*). These three ranks correspond to the international usage of full professor, associate professor and assistant professor. In addition there is the category 'other academic staff' which contains teaching-only or research-only positions (including post-doc fellows). Although in the Netherlands doctoral candidates have an employment contract with their university they were excluded from the Dutch survey as they are not included in the international survey.

For the UAS there are two main ranks: the senior lecturer/researcher (charged with teaching and research tasks) and lecturer (mainly teaching). On top the new rank of lector has been created who has been assigned a leading role in a research group.

Table 9.1 Distribution of ranks in the population of Dutch academics and CAP sample, universities and UAS

Universities*				Universities of applied sciences		
Rank	1993 (%)	2011 (%)	CAP sample (%)	Rank	2011 (%)	CAP sample (%)
Professor	14.3	16.6	19	Lector	3	2
University Main Lecturer (UHD)	14.3	14.0	16	Senior lecturer/ researcher	46	30
University Lecturer (UD)	36.3	30.2	38	Lecturer	51	68
Research associate	23.1	24.7	17	–	–	–
Teaching associate	12.0	14.5	10			
N	16699	15589	666		16152	539

Sources: compiled from VSNU (WOPI 1992/2011) and HBO Council; Geurts et al. (1996)
*Doctoral candidates excluded

During the field phase all 13 universities were asked to participate and 10 of them agreed on the condition that they would contact their staff directly. Based on the expected response rate and the expected design effect (Deff Coefficient 2.0), the university sample amounted to 2500 respondents distributed across the 10 universities according to their size. Each head of personnel was asked to compose a stratified sample based on their population of academic ranks and main fields (e.g. natural sciences, social sciences etc.). A letter of invitation accompanied the online questionnaire (both in English and Dutch). Respondents had also the possibility to download a printed version which they could complete and return by post mail. After a reminder the total response for university staff is 628 which is a response rate of 25 %.

For the UAS sector 14 institutions were selected on the basis of size, region and diversity of orientation. Of them 8 institutions agreed to participate. One institution provided the addresses so respondents could be contacted directly, all the others only agreed by placing a note on their general intranet services with an invitation to their faculty in general to participate in the survey with a link to the questionnaire or to download a printed version. As a reminder the invitation was brought a second time under the attention of the faculty. Because of this procedure, the response rate for the HBO sector cannot be determined.

Table 9.1 presents the distribution of the ranks in proportion of the total academic staff in the population of 1993 and 2011 and in the CAP sample.

For universities no major changes have taken place in the composition of the staff categories in the last two decades. Only the proportion of university lecturers decreased in favor of full professors and teaching associates. For the UAS no comparable statistics are available over the years since the functional structure has changed considerably. Moreover institutions tend to use their own ranking system including the rank of instructor at various levels.

For universities the sample distribution across these functional categories is representative for the whole group (Chi-square = 6.98, df = 3, p = 0.07). The UAS sample shows a slight deviation between the senior lecturer/researcher and the lecturer, but this is not considered problematic for interpretations (Chi-square = 59.06, df = 2, p < 001).

The Dutch survey contained some additional questions that are considered of specific interest for the national context. These concern questions on the changing career trajectories, in particular the introduction of the tenure track career system and especially for the UAS sector on the perception of UAS staff on the research function in their sector.

In the following analyses the full professor and university main lecturer (UHD or associate professor) in the university sector are considered as the 'higher' ranks and all the others as the 'lower' ones. For the UAS the 'higher' ranks are the lector and senior lecturer/researcher while the lecturers are considered as the 'lower' rank.

9.3 Characteristics of the Dutch Profession

There have been three key shifts in the personal characteristics over the past 15 years: the age distribution, the position of women, and the personal background.

9.3.1 The Age Structure

An ageing academic workforce is a problem faced by many countries. In the Netherlands this was the highest between 2000 and 2006 with percentages over 40 % of the staff aged 50 or over. One of the causes is that when in the 1970s the Dutch system evolved to mass higher education more staff had to be appointed. When this growth came to an end, the existing staff kept their tenured position and showed little willingness to seek employment outside academia. Along with shrinking budgets this has lead to blockages in the career progression of young academics. On the other hand an abrupt resignation of a substantial part of staff due to mandatory retirement was a major concern as it would mean a loss of much experience.

In order to achieve a more balanced age distribution, universities implemented several initiatives. Apart from creating new career trajectories for young academics (see next section), working hours of staff aged over 55 were reduced under attractive financial conditions. The hours available as a result of this have been used to recruit young academics to additional permanent posts. This 'double staffing' strategy aims at ensuring an adequate supply of suitable academics to replace those who are expected to retire soon, while keeping the knowledge and experience of older academics (De Weert 2001; OECD 2008).

Due to these changes the age distribution arrived in 2012 at a level similar to 1993. The average age of full professors is 52, of associate professors 49, and of assistant professors 43 years.

In the UAS sector the age distribution is more skewed with a strong peak of 40 % in the age category 50–60 years while 24 % is under 40 years of age. This is not surprising since work experience in industry is normally required as a qualification for a position at a UAS. More detailed information on the sector is not available on the national level.

9.3.2 The Position of Women

In international comparisons the Netherlands has a low proportion of women in academic positions, especially in the higher professorial ranks. Nevertheless, current figures show a clear upward trend. In 1998 less than 5 % of the full professors were women, a percentage that has increased since then to 10 % in 2007 and nearing 14 % in 2011. This development applies to almost all universities, regardless of their substantial differences. The percentage of female professors varies between the different academic fields. It is the lowest in science and engineering subjects as well as in economics. Despite this increase, the proportion of female professors remains far behind the European average of 20 % and the targets as set by the EU's Lisbon Agreement which states that 25 % of all professors should be female by 2010. The annual increase in the percentage of women professors is lower than the average of 3 % in Europe (De Beauvoir 2009).

Figure 9.1 shows the development of women in the different academic position in three time periods. Although there is an increase over the years, the proportions are noticeably shrinking at each successive step on the career ladder. The bottleneck is the step from assistant professor to associate professor. This is in contrast to the fact that women now outnumber men at both bachelor and master levels and for doctoral students the sex balance is likely to be even in the near future. There is presumably a leaky pipeline, which 'leaks' proportionally more female academics at every career step.

Several reasons have been suggested for this low proportion. Women would presumably have lower ambitions or not be strongly focused on science, the fact

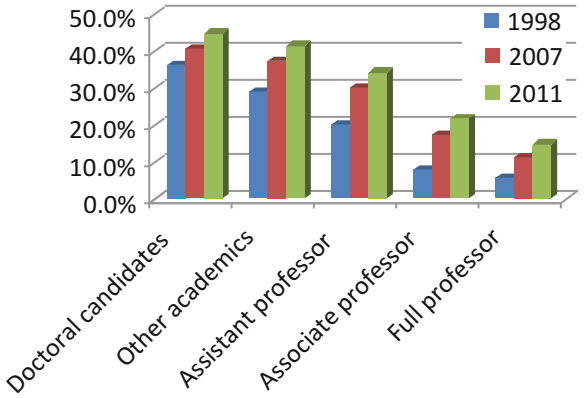

Fig. 9.1 Development of women in Dutch academic positions (universities) (Source: Based on VSNU (WOPI) and CAP Survey 2007/2008 data)

that there is nepotism and gender bias in peer review processes and a low representation of women in academic management and selection committees. In case of professorial vacancies, a rather closed procedure is often set up in the sense that potential candidates are offered the position via informal networks. Gender bias may likely occur when these networks are dominated by men (Van den Brink 2009).

From a policy perspective several affirmative action instruments have been developed to increase the number of female professors. For example, the Aspasia program that especially invites female researchers to submit proposals to the research council that, if approved, will result in an offer for a tenured position mostly at the level of associate professor.

Another policy instrument to achieve a higher level of diversity is that virtually all universities signed the 'Talent to the Top' Charter according to which the boards of governors of institutions have agreed to formulate quantitative targets and policies for the recruitment and promotion of female professors. These policies are in the sphere of improving scouting procedures via informal networks, revisiting transparent recruitment and promotion procedures and criteria, and mentoring of female scientists in their career. Premium schemes for departments for each female professor or associate professor that have been appointed are supporting these policies.

An important aspect of the gender differences concerns the occurrence of functional distinctions. It may well be that men and women perform the same functions – teaching, research, service and administration – so that in principle they should be eligible for the same career track. It is often assumed that women occupy the lower reaches of the academic pecking order because they carry a disproportionate share of teaching loads especially at undergraduate levels. Or they may be more committed to teaching than men, thereby reducing their chances for career advancement. This issue will be explored later in this chapter.

9.3.3 Other Characteristics

The parents' and partner's educational background of the faculty is presented in Fig. 9.2. More than 47 % of the fathers completed university education and 42 % a UAS degree. For the mothers the respective percentages are 27 % and 20 %. These figures show that there is some upward social mobility in higher education. Dutch faculty tend to seek a partner on a equal educational level: more than 86 % of the faculty has a partner who completed university education and 76 % UAS. This is not surprising since most students are studying at an age when it is most likely to find a partner in a similar environment. 'Down-dating' does not occur on a large scale.

Regarding the language that is primarily employed in teaching and research, Dutch university faculty indicates that 42 % of their teaching is in English and 75 % of their research. The remaining percentages are in the Dutch language. These percentages of employing a foreign language are the largest of virtually all CAP countries (with the exception of Hong Kong). This can be explained by the fact that several universities require their faculties to deliver their courses in English and students are

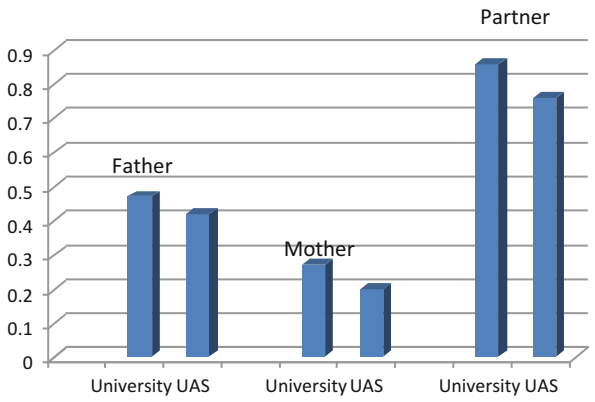

Fig. 9.2 Higher education completion by parents and partner* (percent) of Dutch academics (*Percent of respondents with a partner) (Source: CAP Survey 2007/2008)

increasingly forced to write their assignments in English. Moreover, the pressures to publish in international journals also stimulate the use of English. In debates on this issue much concern has been expressed about the loss of the Dutch language in the academic discourse.

For the UAS the usage of foreign language is lower than in universities, but as far as their teaching is concerned the highest proportion compared to the other HE institutions in the CAP survey (together with their Norwegian colleagues). On the other hand, their use of English in research is relatively low, probably because of the strong orientation of UAS research on local small and medium business in their region.

The strong orientation on foreign languages is related to the geographical position of the Netherlands. As a relatively small country Dutch higher education is increasingly subject to internationalization, with greater mobility of students and staff, its growth of transnational business and increasing international collaboration in teaching and research. English as the lingua franca in higher education is pushed by the government as this facilitates the integration of foreign students and staff and enhances the attractiveness for foreign academics to pursue an academic career in the Dutch system.

9.4 Professional Trajectory

9.4.1 Preparation for the Academic Profession

As in other countries the doctoral degree is increasingly regarded as the major entrance qualification into the profession. Although the traditional apprenticeship model in which candidates work individually on their project with their master still exists, most doctoral training has been institutionalized in graduate schools or research schools. The latter are constituted by two or more universities who are collaborating in a particular disciplinary field. In the Dutch system doctoral candidates

are regarded as junior or assistant researchers rather than as students. As such they are paid employees with a fixed-term employment contract during the full training period of 4 or 5 years. As this is a rather expensive system universities wish to introduce scholarships for doctoral students as well, especially in fields where the student demand is high, but so far legislation does not allow them to do so.

Although a PhD is a necessary condition, it is not sufficient to pursue an academic career.

With the development of graduate schools, the PhD is less conceived as an automatism for an academic career, but more as completing a fully-fledged university education. In this context many doctoral programs include in their training a broader scope of skills that increases their employability also outside academia. In some fields, however, starting a PhD continues to raise expectations to pursue an academic career, more in humanities and social sciences where PhD holders face limited possibilities to find employment outside academia (van Balen and van den Besselaar 2007).

In the UAS sector most staff have been appointed as teachers who have no or few research skills. Compared to the other CAP countries the UASs have the lowest proportion with doctoral degrees (11 %) and most countries have much larger percentages. A doctoral degree has never been a requirement to obtain a position in UAS, but this is gradually changing. Given the extended research task the sector has set targets regarding the share of staff with higher academic degrees by making a master degree the minimum for faculty positions. In addition PhD holders are increasingly desired and several institutions developed PhD trajectories for sitting and new faculty to pursue a doctoral degree in collaboration with universities. As more PhD-holders are desired this opens new opportunities of university faculty to pursue an academic career in the UAS sector.

Regarding the duration of the employment contract the Netherlands is among the countries with the highest proportion of faculty that is permanently employed. In universities this is 67 % while 21 % are on a fixed-term employment without permanent or continuous employment prospects. The latter are predominantly research functions and reflect the trend to increase the proportion of fixed-term contracts without a guarantee of permanence.

The UAS faculty have more favorable employment prospects: not only possess most of the higher ranks permanent positions (87 %), also in the lower ranks there are more faculty who have a permanent position (81 %). These percentages are by far the highest of all the other HE institutions in the CAP survey. Given these observations the attitudes towards career trajectories of Dutch faculty will be reviewed.

9.4.2 Attitudes Toward Careers

In the international literature there is much reference to the fact that the conditions of academics have deteriorated over the years. Responses to statements about the academic career support these findings with respondents from the UK more likely

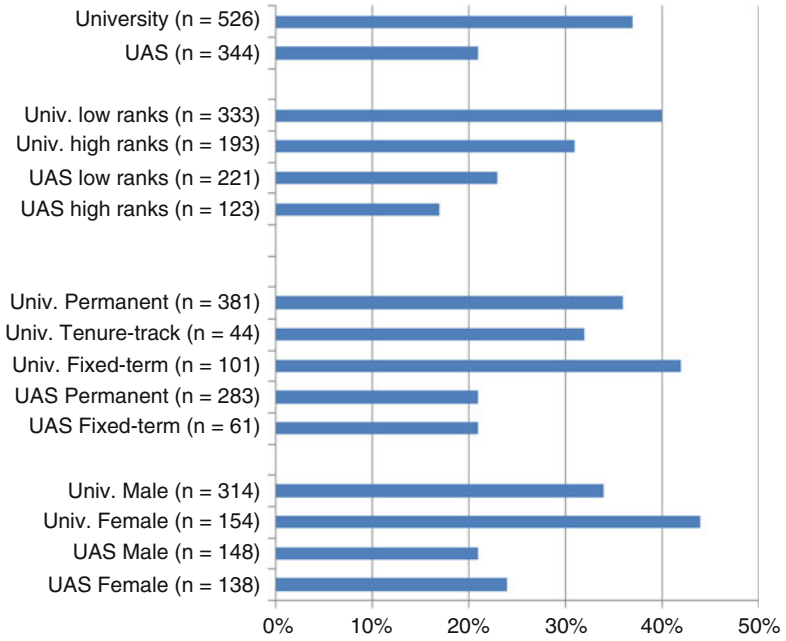

Fig. 9.3 Dutch academics' assessment of poor career prospects,* by type of institution, rank, gender and type of employment (%) (* Percentage of respondents who agree or strongly agree with the statement that it is a poor time for any young person to begin an academic career in their field, measured on a 5-points scale) (Source: CAP Survey 2007/2008)

than those from other countries to agree with assertions that 'this is a poor time for any young person to begin an academic career in my field', and 'my job is a source of considerable personal strain.'

Compared to other countries the Dutch respondents indicate a relatively optimistic view of the career opportunities. The statement about the poor time to begin an academic career was agreed by 36 % of the Dutch university staff and only Norway, Japan and USA show slightly lower percentages. Also on the assertion 'if I had to do it over again, I would not become an academic' the proportion of Dutch academics agreeing or strongly agreeing is among the lowest of all CAP countries.

The attitudes towards careers may vary according to type of institutions, rank, gender and type of employment. This is portrayed in Fig. 9.3 by taking the assertion on the poor time to begin an academic career as indicative for views on careers.

Overall the UAS staff members are more positive about their career prospects than their university counterparts. More than a third of the university faculty agrees that this is a poor time to begin an academic career against 21 % of the UAS staff. There are also clear differences between the higher and lower ranks within both types of institution. Not surprisingly, the higher university ranks are more positive about the current career prospects than those in the lower ranks: 40 % of those in the lower ranks consider this as a poor time against 31 % of the higher ranks. These

percentages are among the lowest in the international comparison, indicating a relatively optimistic view on their career prospects.

In the UAS sector the percentages for both the high and low ranks are lower (17 and 23 % respectively). That even the low ranks are more positive about their career prospects than those in universities can be explained mainly by the fact that permanent positions are in the UAS sector more common than in universities. Junior staff at UAS enter at an earlier stage in a permanent position which is focused on teaching while junior university staff more often have research tasks which involve more temporary contracts.

This is also apparent when comparing those on permanent and on fixed-term contracts. In the UAS sector those on fixed-term contract assess equally their career prospects than those on permanent positions as they generally expect to attain permanent employment over time. For the universities those on fixed-term contracts are more pessimistic about starting an academic career than those on permanent positions. Those with permanent employment prospects (tenure-track) have the lowest score to consider it a poor time to start an academic career, thereby expressing much confidence in their future career.

Finally, the gender factor makes a difference especially for universities. Male academics more often indicate that this is not a poor time to start an academic career than females who are less optimistic about their future career prospects. This outcome may well be related to the different tasks men and women are performing regarding teaching and research. This assumption will be explored later in this chapter.

These outcomes are not as negative as one would tend to believe in view of the current policy changes as described before and they stand out positively in the international comparison. This leads to a closer look at the career system as this is evolving in the Dutch university system.

9.4.3 Changes in the Academic Career Trajectory

The Dutch academic career traditionally consists of a relatively simple hop, step and jump movement: after obtaining the doctoral degree followed by a fixed-term post-doc position of some years, a candidate is eligible for a mostly tenured position of university docent (assistant professor), then may proceed to university main docent (associate professor) and finally full professor. This career system has been based on the formation principle: promotion occurs when a (higher) position becomes vacant. Especially the move from non-tenured to a tenured position is a crucial step in the career. According to current law temporary and fixed-term appointments can subsequently be renewed up to a maximum of 6 years. After that period, the institution has either to offer a permanent position or to dismiss the candidate. Given this regulation the pressure to obtain tenure is immense, especially when tenured positions are scarce and a reservoir of post-docs emerges.

This situation for post-docs who are accumulating fixed-term contracts after another can be critical, particularly when they receive a contract for the duration of a particular project. Although they occupy precarious positions enjoying little, if any, stability or security (Archer 2008), their situation is not necessarily dead-end. The President of Dutch Royal Academy of Science (R. Dijkgraaf) expresses this graphically: "a career is no fast train in which you get in, and is thundering on, but rather a slow one, stopping at all kinds of stations". However, it is important to know what train to take and how to know where to change. Why then tend young faculty to be more positive than generally expected?

Explanations are to be sought in the changing funding system for research in conjunction with the changing career system that is moving away the formation principle towards a more flexible system where permanent positions are becoming less common. Two components of this career system are central:

– special funding programs such as the Innovation Research Incentives Scheme for researchers in different career stages;
– introduction of the tenure-track system.

These components aim to enhance the career prospects of junior staff who are on temporary contracts and the attractiveness of young promising academics who otherwise would opt for a career elsewhere. Via the innovation research incentive (the *Veni*-, *Vidi*-, *Vici*-program) the Dutch research council awards in an open competition researchers at different stages of the research career, both young researchers, independent and established researchers. These research scholarships enable young researchers to develop themselves on the basis of their own research project. They can demonstrate their qualities according to their own views and research agenda. These premiums or 'career subsidies' which have in a short time become a major part of the portfolio of the research council, are seen as an important source for scientific innovation. Researcher can explore new research directions without being incorporated in existing research programs. However, these career subsidies are shifting the responsibility for academic careers away from universities towards a national interest and national research policy. The acquisition and selection of researchers are no longer solely a matter for university committees, but are externally determined. This external steering by the research council limits the responsibility and the autonomy of universities. In practice it appears difficult for universities to realize the implicit career promises that go along with these career subsidies (Bongers 2007; van Balen and van den Besselaar 2007).

This changing research funding may explain the highest level of agreement of the Dutch academics on the statement 'the pressure to raise external research funds has increased since my first appointment'. 86 % of university academics agree or strongly agree (responses 1 and 2) while all other CAP countries show much lower percentages.

The other component of the changing career system is the introduction of the tenure-track system. Preceding this the Royal Dutch Academy of Sciences initiated to finance postdocs a 3-year employment contract that after evaluation could be extended for another 2 years on the condition that the university guarantees a

permanent position thereafter. This initiative was trendsetting for a tenure-track career system as this has gradually been introduced at most universities since 2005. Dutch universities adopted this system as a way to attract and retain young promising academics and to enabling them to develop themselves towards a professorial position. The University of Tilburg for example formulated the goal as follows (Fruijtier and Brok 2007):

> The main goal of this system is to recruit and retain young, talented and internationally oriented researchers. These young researchers have been recently educated, are internationally oriented and therefore foster a good research climate in the department.

Most of the views on the tenure-track system have been viewed from the perspective of the university management to offer attractive career opportunities. Three context-factors stand out (Fruijtier and Brok 2007). First, it is considered an instrument to attract top talent for the academic labor market which is expected to shrink due to the ageing professoriate and the increasing demand for high skilled labor. Especially in the sciences and engineering subjects this scarcity will increase and in these subjects the tenure track has become very popular. Second, the globalization of the academic labor market. In a small country like the Netherlands a university cannot restrict its recruitment to the national labor market. Tenure tracks offer the possibility to attract academics from other European countries and outside Europa to the Netherlands for a longer period. Thirdly, in the need to excel as a university in competition with other universities tenure track is seen as a weapon in the 'war on talents'.

Contrary to the tenure-track which like in other countries often has the connotation as the 'road to permanency' in the realm of non-tenure appointments, the Dutch tenure-track model has been connected with the increasing flexibility of the employment relationship. Candidates have positive tenure prospects, but only on the basis of predetermined individual performance expectations and agreements, which if not met during the period of 5–6 years will mean outright discharge. The agreements include publications in authoritative journals, possessing teaching qualifications, and counseling doctoral students. They have to excel in their field by submitting successful research proposals and acquiring external research funding. The tenure-track instrument has become increasingly an integrated part of the recruitment career system.

The tenure-track career system has been criticized from various directions. First, for the university it would be too expensive since the number of permanent positions will likely increase in the future. Receiving tenure is more dependent on the proven qualities of staff members rather than the available positions in a department (i.e. the 'formation principle'). This may become expensive when the financial conditions get worse and faculties definitively would not appoint more staff in tenure-track than is financially feasible. Second, it would not suit the current academic culture as this is only available to a limited number of staff members. Especially the sitting faculty who entered the academic profession on the basis of other expectations and employment conditions would not favor this new element as they are forced to engage in such a rat race to the top academic positions. Finally, for the

Table 9.2 Dutch academics' views on tenure-tracks (percent; responses 1 and 2)

	Permanent staff (%)	Tenure-track staff (%)	Fixed – term staff (%)	Other staff (%)
Tenure-tracks are desirable in order to keep excellent scientists in the institution	45.3	58.9	53.9	48
Tenure-tracks are only attractive for a limited group of scientists	50.9	46.7	55.2	57.7
Tenure-tracks cause a serious disruption of the general career possibilities in academia	24.2	18.4	28.7	30.8
N	596	78	115	27

Source: CAP Survey 2007/2008
Question: What is your opinion about tenure-tracks, aimed to assure the career paths of promising academics? (Scale of answer from 1 = strongly agree to 5 = strongly disagree)

tenure trackers themselves this is a very demanding and stressful period. They have to prove themselves continuously by meeting the stringent requirements creating much uncertainty under the 'up or out' rule. The item from the CAP survey that 'my job is a job a source of considerable personal strain' would particularly apply to this group.

Against this background the Dutch survey included an additional question, asking the view on tenure-tracks in Dutch higher education on the basis of three propositions (Table 9.2).

The data show that more than half of the academic staff agrees with the general purposes of the tenure-track system and considers it a way to attract and retain young scientists. The majority also agrees with the view that a tenure-track system is only attractive for a selective group of scientists. Much less academics fear that this is a disruption of the general career possibilities in academia.

Not surprisingly, tenure-track staff are most positive about this system than the other staff categories. However, the differences are not significant. Contrary to what may be expected even 54 % of the fixed-term staff supports this system, while tenured staff score lower. Although the tenure-track may imply that many will be stuck in their career which may lead to discontent, but in the previous system consisting of a high proportion of academics on temporary positions the chances to encounter a disrupted career is similar or higher.

This changing career system implies that especially the early career researchers have to develop their own careers. The Dutch mathematician Jansen (2010) uses the term 'entrepreneurial researchers': as researchers in the past received research funding on appointment, increasingly researchers nowadays have to acquire their budget themselves for example by winning scholarships from the Dutch research council as well as other research agencies. Often this is a discouraging process since the success factor of some scholarships is very low, often a matter of contextual factors or just luck. For example, it is becoming increasingly important to participate in research groups which put much effort in the presentation and publishing of research results. Success in this activity works as a multiplicator in the visibility to receiving scholarships and tenure-track positions.

9.5 Notions of Scholarships and Satisfaction

9.5.1 Changing Views on Scholarship

As indicated in the introduction a larger part of the research funding has been shifted towards the research council which increasingly allocates the budget on the basis of targeted research and priorities established nationally. Academics are forced to demonstrate the economic impact of their research. Moreover the current science policy is focusing on the designation of top-sectors whereby institutions are enforced to engage in strategic alliances with industry and business, in an effort to generate private revenues and to foster entrepreneurial activities including the exploitation of new knowledge in external problem solving and valorization of research results. This has resulted in increasing pressures to raise external research funds.

These changes have led to much discontent among the Dutch academic profession. A much expressed fear is that academics will be pressured to be involved in research that is financed and determined by industry or focused on acquiring a profitable patent. Such an external interference would curtail the research autonomy and be a threat to fundamental research. This discussion relates to the notion of academic capitalism according to which the boundaries between universities, governments and market forces have disintegrated considerably (Slaughter and Leslie 1997). The question is to what extent this development has altered significant aspects of faculty commitment and identity. It is interesting to consider the views of Dutch university faculty on scholarship compared to their international counterparts:

- The Dutch academics have the highest score to agree or strongly agree with the statement that 'scholarship is best defined as the preparation and presentation of findings on original research'. Only Norway has a higher and Japan an equal score.
- The Netherlands has by far the lowest score of all CAP countries to (strongly) agree that 'scholarship includes the application of academic knowledge in real-life settings' (43 % against an overall CAP average of 65 %).
- The Netherlands also have by far the lowest score to (strongly) agree that 'Faculty in my discipline have a professional obligation to apply their knowledge to problems in society'. This is 46 % while most countries have a much higher degree of agreement with an average 66 %.

These extreme outcomes can be interpreted in the sense that Dutch university faculty display a strong orientation on fundamental research and very low on application.[1] For most other countries the differences between the levels of agreement with these statements are much smaller, whereas for the Dutch these are extremes. It may well be that the Dutch faculty indeed consider fundamental research and

[1] The Dutch UAS faculty does not deviate from the overall average of the other HE institutions in the CAP survey regarding the degree of agreement on these statements.

application as contradictory. The Netherlands is also among the countries with the highest score to characterize the research as basic or theoretical (with Norway, Japan and Korea on similar levels), while it scores by far the lowest on applied and commercially-oriented research.

A possible interpretation is that for the Dutch faculty the primacy of their drive lies on original research without necessarily excluding the practical consequences of their research. In that sense fundamental and applied research are not necessarily incompatible. Such a view can presumably be traced back to cultural characteristics, such as the conception of Dutch researchers that science is always practical in its consequences. In order to stress this style of scientific thought, Dutch scientists who in the past were propagating 'useful knowledge' used – as a reaction to the interference of government or industry with universities – consistently the term applied-oriented instead of 'applied' research (see for an historical analysis of this thought, Theunissen 2000; Harwood 1993). Such an orientation would not conflict with the traditional academic values as it is supplementing rather than replacing significant aspects of academic scholarship (Noorda 2010). As Henkel puts it, organizational identities are redefined in response to external changes but in a way that is compatible with existing values and histories (Henkel 2009).

This view is supported by the observation that the Dutch academics feel the highest pressure to raise external funds of all CAP countries (86 %), while on the other hand they consider the emphasis on commercially-oriented or applied research (and the influence emanating from this) lower than any other country. In other words, a relationship cannot be presumed between the perceived pressures to raise external funds and the emphasis on commercially-oriented research.

The current changes have not negatively affected the satisfaction level of the professoriate. On the contrary, the Dutch faculty shows the highest overall satisfaction rates with their current job compared to their European counterparts in the CAP survey. Also outside Europe the Netherlands belongs to the countries with the highest satisfaction levels together with Mexico, Canada and Korea. University and UAS sector hardly differ and although the higher ranks show a slightly higher satisfaction rate compared to the lower ranks (77 and 72 %), the difference in most other countries is much larger. This confirms the finding above that the lower ranks are not less optimistic about the present time to start an academic career.

9.5.2 Professional Orientation and Gender Differences

An important issue is whether satisfaction levels relate to the professional orientation of faculty, in particular teaching and research and to what extent the gender, age and rank are explanatory factors. It is frequently stated that women are less interested in research, have heavier teaching loads or work more part-time leaving less hours for research (De Beauvoir 2009). Ehrenberg for example, examining the under-representation of women in the academic profession at research universities in the US, suggests among the possible factors female PhD's preferences for

teaching over research and perceptions that research universities offer less friendly environments for them (including engaging in more gender discrimination). (Ehrenberg cited in OECD 2008). The age factor is also important as the increase of women in higher positions is of a relatively recent date. As age and career stage are often correlated, the lower average age of female academics compared to their male colleagues could partly account for the under-representation of women in high academic ranks (Ibid OECD 2008). In combination with this, the preponderance of women with high teaching loads would result in lower levels of job satisfaction compared to men.

It would be worthwhile to sort out these issues particularly for the Netherlands where according to international standards female representation in the higher professorial ranks is low. Looking first at the preferences for teaching or research, it appears that male and female academics hardly differ. If the preference for teaching and leaning towards teaching are taken together, men and women have equally a 22 % score. More men are leaning towards research (56 % against 47 % women), while on the other hand more women have their interests primarily in research (30 % against 21 % men). Taking the preference for research and leaning to research together, men and women are equally interested in research (78 %). For the UAS sector more female staff show more preference for teaching or leaning towards it and men for research or leaning to it, albeit with small differences and not at all significant.

Apart from the preferences, the actual teaching time is an important variable. It may well be assumed that, under the increased demands for publication and pressures to find the time to conduct research, job satisfaction will be higher among those at research universities who have lower teaching loads. Reversely those who spend more time on (undergraduate) teaching tend to have lower levels of job satisfaction. There is much support from previous studies that female faculty are less satisfied with their job (Blackburn and Lawrence 1995; Bozeman and Gaugham 2011). It can be hypothesized that this may be at variance with the time spending on teaching and that gender differences may account for different levels of job satisfaction (see e.g. Olsen et al. 1995).

We have explored this hypothesis further by focusing on university faculty only, excluding UAS faculty as this would have a distortive effect on the data. The Dutch CAP data reveal that men and women differ in the proportion of total working hours devoted to teaching with only 5 % points (43 % and 48 % respectively), while the proportion of research time per week is 33 and 31 %. These are very minor differences, assuming that the relative teaching time may be related to the degree of satisfaction of university staff and that gender to a lesser degree has an effect.

As in most countries a lower share of women than men is employed full-time (Goastellic and Pekari 2013), we have recalculated the respondents who are employed on a part-time basis into full-time employment. Thus if a respondent is employed on a part-time basis for 40 % and has indicated to teach for 15 h per week, this is converted to 15/0.4 = 37.5 working hours. We have divided the teaching time in five categories more or less equally distributed across all responses. The degree of satisfaction was rated as a single item on a five-points scale from very high to

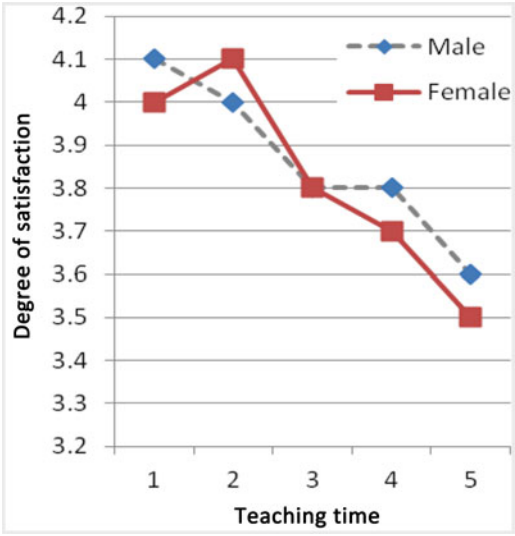

Fig. 9.4 Relationship among Dutch academics between teaching time and satisfaction by gender (Source: CAP Survey 2007/2008)

very low, and recoded such that the higher the number the higher the satisfaction level. Although in other studies a multidimensional approach to satisfaction is adopted, Bozeman and Gaugham (2011) found sufficient evidence to warrant the use of a global single item and to expect that the results will have reliability and validity.

A first general analysis provides a significant negative relationship between the degree of satisfaction and teaching time (Spearman's rho = −0.20; N = 447; $p < .01$). The satisfaction decreases when the time spent on teaching is increasing.

Next we include gender and academic rank in the analysis to consider their respective effects (Figs. 9.4 and 9.5).

Figure 9.4 shows the relationship between teaching time and degree of satisfaction by gender. For both men and women the degree of satisfaction decreases with the increase of time spent on teaching. However, men tend to be slightly more satisfied than women when their teaching time increases, except for the second category of the teaching time. The overall differences are minimal, however, and the gender factor does not really make a difference.

Figure 9.5 shows that the higher ranks have systematically higher satisfaction levels than the lower ranks. This indicates that rank does have some effect on the relationship between degree of satisfaction and time spent on teaching. The effect is relative, however as the evolving pattern when teaching time increase is the same for both groups and are nearing each other in the third and fourth categories of teaching time.

Finally we carried out an explorative analysis by combining academic rank and gender by splitting up higher and lower ranks by gender. It turns out that for the lower ranks there is no difference at all between men and women regarding their degree of satisfaction and teaching time. For the higher ranks women have a higher

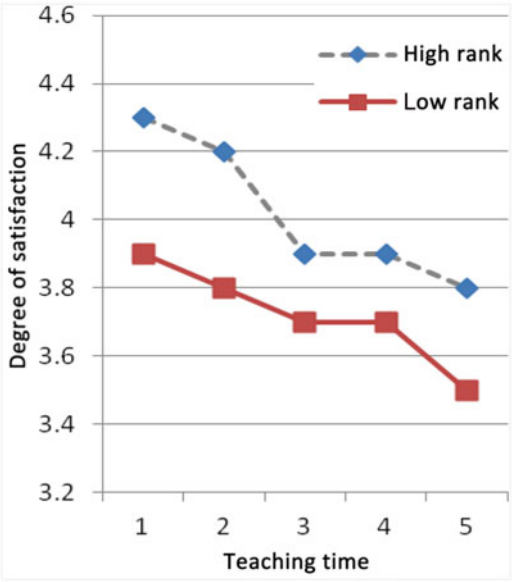

Fig. 9.5 Relationship between teaching time and satisfaction by rank for Dutch academics (Source: CAP Survey 2007/2008)

degree of satisfaction than men when they have a modest teaching load, but are less satisfied when teaching time increases. This is very indicative because of the small number of women in higher ranks.

What can be concluded from this? There is a significant relationship between the degree of satisfaction and teaching time. There is an interaction effect when gender and rank are combined, but the overall differences are not significant and the general pattern remains the same. Academic rank appears to have some effect: the higher the rank of the university academic, the more satisfied he or she is about the time spending on teaching and research. The findings suggest that gender differences in the time spent on teaching hardly have any effect, contrary to what previous research has suggested.

9.6 Conclusions

This chapter portrays the Dutch academic profession and the changing conditions under which they are performing their tasks. The proportion of female academics has increased and several of them are successfully pursuing an academic career, although the proportion is relatively low compared to the other CAP countries. Whatever the causes of the underrepresentation of women especially in the higher academic ranks, there is no evidence found that men and women differ regarding their preferences for teaching or research, nor that the amount of teaching time would account for these gender imbalances. Men and women are quite similar in these respects.

Increasingly academics from other countries may find their place easily in Dutch higher education. The international collaboration in teaching and research has strongly been facilitated by accepting English as the common language in academia, a development not favored by all, as particular subject fields are oriented to the national language and culture. But the open climate of Dutch society will stimulate the international mobility of academics further.

The UAS sector has developed strongly and due to the extended research function requires faculty with more diverse qualifications. For a career in this sector higher degrees up to the PhD level are increasingly required making the sector more comparable with university faculty. This facilitates the exchange of faculty between both sectors. This does not mean that faculty on both sides of the binary divide will become more homogenous. On the contrary, the university faculty adheres to a notion of scholarship that is focused on original and fundamental research while the UAS research is predominantly practice-oriented and requires faculty that is competent to develop professional identities that are aligning with this research profile.

The diversifying workforce within the university is expected to increase. This is enforced by the current policy to bring about more differentiation in the system whereby the government applies an incentive form of steering on the basis of agreements with individual institutions about their envisaged profiles and performances. While raising their profiles, institutions will develop a more active management of the human resource with the goal of aligning personal performance with institutional profiles and ambitions. The outcome of this process may result in a more diversified workforce. Contemporary academic institutions require various qualities of their staff: excellent researchers with top publications; ability to acquire research grants, resources and to seize entrepreneurial opportunities; being involved in large international networks and a well-known key note speaker; be an excellent and inspiring teacher; being able to incorporate academic leadership and management roles. Given these various qualities institutions are recognizing the need for more differentiated roles and expertise within the academic profession. Career trajectories will shift from clear structures towards career resilience which will induce more diversified career patterns.

Compared to their international colleagues Dutch academics are standing out on various aspects of the profession such as the strong notion of scholarship focused on original and basic research. Despite the current driving forces in the higher education system, Dutch academics show the highest satisfaction scores. Although changing ideas about knowledge production and its societal-economic relevance have been a key factor for major policy reforms, this does not mean that traditional tasks and academic values are vanishing. There seems to be more continuity regarding significant aspects of academic scholarship than one would tend to believe.

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Chapter 10
Academics' Professional Characteristics and Trajectories: The Portuguese Case

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10.1 Introduction

The purpose of this chapter is to present a descriptive and interpretative approach on the changing professional characteristics and trajectories of Portuguese academics. In Portugal in the last 10 years, the academic profession has been the object of several empirical analyses. The aim of these analyses is diverse including: the work conditions, gender composition and dynamics, academics' participation in institutional decision-making, their relation with knowledge production and academics' professional satisfaction (Amaral et al. 2003; Carvalho 2012; Carvalho and Santiago 2010a, b; Dias et al. 2013; Santiago and Carvalho 2004, 2008, 2012; Santiago et al. 2014). The main concerns of these studies were to understand the effects of higher education changes on academics and their perceptions. However, the more subjective,

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personal characteristics and trajectories of academics, as professionals, have largely not been included in research in this field. The approach of this research can be an important conceptual and empirical insight to improve the knowledge over the potential changes in the Portuguese academics' professional trajectories, as well as in their professional cultures and identities.

Actually, it seems that change is not new in Portuguese academics' professional group. Carvalho (2012), based on historical changes in academia, identifies three different moments that shaped the academic profession, namely: the pre-democratic era; the democratic transformations era and, more recently, the emergence of market and 'managerialism.' In the first moment – pre-democratic era – the academic profession was defined mainly by its elitist nature. Until the 1974 Portuguese democratic revolution, under the straight control of the 'political university' of the dictatorship regime (Torgal 2012), academics were a small elite mostly recruited from the dominant social classes (Carvalho 2012). Knowledge production was almost absent from universities as academics were viewed as the 'heirs' of the reminiscent symbolic capital (Bourdieu 1984) of medieval scholasticism. In the second moment, following the 1974 democratic revolution, deep political and social transformations in the country brought to academia the 'Humboldtian revolution', based on the academic knowledge logic as the main organising principle for structuring higher education institutions (Santiago et al. 2014). According to Carvalho (2012) the 'humboldtian revolution' emerged as an important step in the academics' professionalism and professionalisation process. A new academic generation had large control over higher education institutions' organisation and operations with collegiality being institutionalised as a supporting mechanism of representative democracy. At the same time, intents were proffered to make the academic profession more democratic. The third moment, starting at the end of the 1990s, represents the marketisation and managerialisation of Portuguese higher education. External control over academic work and the academics' professional behaviour, values and practices increased in a considerable way. Collegial power was limited, individual contracts became an instrumental tool to manage academics and the quality assessment, quality assurance and performance evaluation systems appear as the wires of a new mesh embedded within professional practices. Professional power was transferred to this external control forming a new 'grid' of professional visibility connected to the new 'dogmas' of accountability and 'consumers' sovereignty'. In addition, part-time casual and unsecure employment has also been increasingly introduced into the higher institution landscape which was previously unknown in the Portuguese system.

The macro-level contexts described above form the main framework to understand academics' professional characteristics, cultures, identities and career trajectories in the present moment. These characteristics will be described and analysed with the support of empirical data from the Portuguese version of the international Changing Academic Profession (CAP) survey. This survey was distributed to the population of all academics from public universities and polytechnics. The outline of the chapter is structured into three main sections. First, an overall synthesis of the 'state of the art' changes emerging in the Portuguese higher education system and

institutions will be addressed. This will shed light on how far the academics' professional conducts, values and practices have been touched by market and managerial changes. Second, the methodological strategies used to define the sample and to collect and analyse data will be summarised. Finally, the results of the descriptive and interpretative analysis from the survey data will be presented. The data analysis was intended to embrace some conceptual insights for further research on academics as a professional group.

10.2 Changes in Higher Education and the Academic Profession in Portugal

Before the 1974 Portuguese democratic revolution, some remnants of medieval scholasticism persisted in several practices within the Portuguese academy (Santiago et al. 2014). Teaching was at the core of academic activities. The focus on teaching served the purposes of both controlling the education of a small elite number of students within the dictatorship framework – students dissidence was severely repressed – and of the knowledge production (Carvalho 2012; Torgal 2012). For this period it can be argued that academics formed an elite profession, composed of a small number of elements, having a high social prestige and being over-controlled by the dictatorship regime (Carvalho 2012). It was a 'consenting elite' (Gramsci 2000) which supported a specific normative identity connected to the cultural and ideological hegemony of the dictatorship regime ('Estado Novo') (Carvalho 2012). 'The 'non-consenting elite', by contrast, rested on a minority of academics who sought to hold out against this hegemony' (Carvalho 2012, p. 324). The pool for academic recruitment at the four public universities existing at the time (the classical universities of Coimbra, Porto, Lisbon and the Technical University of Lisbon) was confined to a small social elite, and was mostly a 'consenting' one. For the 'non-consenters', it was very difficult to pass through the networks of the ideological selection and to enter and/or to progress in the academic career rank.

After the 1974 Democratic Revolution, these networks were largely dissolved. Deep higher education systemic and institutional transformations arose with a strong impact on academics' professional characteristics and careers trajectories. The first transformations were related with the emergence of institutional diversity and diversification. This was evident already at the end of the 1970s with the creation and/or consolidation of new universities and of a binary system with the emergence of the polytechnics subsystem. But, this was also reinforced in the 1980s with an extraordinary growth in the number of private institutions in the country. Other important transformations followed this with the implementation of curricular diversity including both 'professional drift' in universities and 'academic drift' in polytechnics. Finally the massification and democratisation of first level degrees was followed by the increasing offer in post-graduation degrees. This induced an exponential increase in the supply of academic positions; and subsequently a strong social recomposition of the academic professional group. In parallel, deep changes

also occurred in the mechanisms of social and institutional production and reproduction of this group. The social basis of the academic recruitment was expanded and the profession started its own democratisation process. Nevertheless, this democratisation process was followed by an increasing segmentation and fragmentation related not only with feminisation but also with the existence of distinct careers. Important differences were evidenced not only between public and private careers (which are not still legally regulated) but also within the public sector between universities and polytechnics (Carvalho 2012).

Along with these transformations, the humboldtian logic started to embed higher education institutions policies and organisations and, at the same time, emerged as the frame under which academic work started to be developed. This new institutional context was consolidated with the publication of the national legal statute for academic careers (Decree-Law 448/79). With it, substantial changes were introduced in the career structure with the responsibility to meet the three traditional missions of university: teaching, research and service to society being assigned to academics (Carvalho 2012). Subsequently, particular emphasis was given to the articulation between teaching and research (Santiago et al. 2014), at least concerning its recurrent reiteration in the universities and polytechnics missions statements (Santiago et al. 2008). This represented a major step towards the promotion of political, social and institutional conditions allowing academics to develop new strategies of professionalisation and the (re)construction of the academic professionalism ideology (Carvalho 2012). Acadmics' professional values were apparently free from the stigma of the 'political university' of the totalitarian dictatorship (Torgal 2012) and started to be more aligned with more democratic ones. With the democratic regime ruling higher education, the previous 'non-consenting elite', acting as a counter hegemonic group, was deeply involved in the (re)construction of a new professional normative identity (Carvalho 2012). The institutionalisation of collegiality at all levels of the university and polytechnic's organisational set, allowed the (re)construction of the academics' cultural symbols, beliefs and values (Carvalho 2012) embedded in a mixture of Humboldtian and welfare principles: democracy, equality, autonomy and merit. But if collegiality granted a high degree of autonomy to professionals, this was not complete since the decision-making remained under the control, at least informally, of the senior academics sustaining the prevailing chair-holder system.

It is important also to notice that since 1974 until the beginning of the 1990s, a S&T system started to emerge. Although its initial 'small size and loose articulation' (Heitor and Horta 2012, p. 180), inherited from the previous dictatorial regime, the Portuguese S&T system increased dramatically after being consolidated during the mid-1990s with the creation of a large number of research units and independent institutes, as well as and with their evaluation by international teams. Although these new research structures have been important to the 'modernisation' of the higher education system and to the improvement of the academics scientific 'productivity', they have also contributed to the fragmentation of the 'old' humboldtian institutional order. The 'research university' notion overlapped the 'teaching-research university' ones, at least in a symbolic way.

The end of the 1990s also brought deep changes in the institutional conditions surrounding the academics' working conditions, employment and recruitment. It was the time when neo-liberalism and New Public Management (NPM) started to permeate higher education policies and institutional structures and processes even if mostly at a rhetorical level. The injection of neo-liberal and NPM guidelines at the system and institutional levels were inspired in the same global assumptions and practices tested elsewhere (Deem et al. 2007): limiting the scope of the bureau/collegial-professional regime; decentralising (self-governance and 'management devolution'); empowering students and enterprises as higher education 'services consumers' ('consumers sovereignty'); injecting marketing coordination mechanisms (competition between public institutions, selected and individual incentives); introducing evaluation, quality assessment, accountability and audit systems (according to political, institutional and managerial objectives) and developing new ways to regulate and control professionals' work.

This global framework strongly inspired the Portuguese higher education legal framework approved in 2007 (Law 62/2007). This new law imposed a distinctive logic in higher education institutions' models of governance and even in its culture aligned with a corporate and entrepreneurial 'philosophy'. The new legal framework allowed higher education institutions to opt for a public institute or a public foundation regime (only 3 institutions among 15 opted for it). This foundation regime means that higher education institutions remained public but are governed by the private law rules. Both in public institutes and public foundation regimes, a General Council replaced the previous collegial bodies, namely the university Senate (the university governance body) and General Assembly (who elected the rector), as well the Polytechnics General Assembly (who elected the Polytechnic President). External co-opted members (individuals of merit representing external social, cultural, entrepreneurial or professional interests) have to comprise 30 % of this Council. It is mandatory to elect the council chairman among the ranks of these co-opted members. However, it is important to notice that elected academics are still the majority (55 %), and students (15 %) comprising the majority of the other elected members. Strategic power was concentrated in this new Council. Although emerging as a typical trace from the evaluative state (Neave 2012), which supposes decentralisation, the deployment of this governance and management model seems to be more focused in operational conducts than in the strategic and political 'power devolution' (Teichler 2003). It also represents a shift on the modern university paradigm towards an entrepreneurial (Clark 1998) and 'corporatised' university (Currie et al. 2003), which downgrades collegiality by power concentration at the top and line management, and restrains academic freedom, autonomy and self-regulation (Askling 2001; Fulton 2003).

In this context, academics have been increasingly perceived as 'intellectual workers', forced to be more accountable to their institutions (Harley et al. 2003; Meek 2003; Musselin 2013), rather than autonomous professionals. This re-specification of the academic profession brought about important changes to the academic working terms and conditions. New regimes of appointment, as the individual contracting, and of recruitment procedures (increasing invited lectures and

part-time employees) arose. Moreover, the assignment of full-time positions without a permanent employment perspective also became a current practice. Tenure is no more the norm and the academic workforce is increasingly becoming casual, part-time and flexible. Accordingly, Portuguese academics seem to be losing collective and individual power over the social division and conditions of academic work (Carvalho and Santiago 2010a, b; Santiago and Carvalho 2008, 2012; Soares 2001; Taylor et al. 2007). Using Freidson's (2001) terms, this can potentially translate into a weakening of professionalism's appeal in Portuguese academia.

10.3 Empirical Research Strategies

The administration of the CAP survey, from which data were extracted, took place in October to November of 2008. All academics (from assistants to full professors) from public higher education institutions were approached through an electronic on-line platform to complete the questionnaire. Academics, at the time of the survey, were 14,164 employed by universities and 10,116 by polytechnics. The responses rate to the on-line survey was 5.4 %. The reasons for this low number may be related to the on-line distribution of the questionnaire and with the circumstance of academics being approached to fill out different questionnaires with the increasing research interest in this professional group and changes in academia. Academic staff from private higher education institutions (both universities and polytechnics) and from public military and police higher education institutions was not included in the study.[1] The main reason for not including these academics has to do with the fact that most of them integrate the staff of more than one public institution. For the purposes of the Portuguese CAP survey (and also in this chapter), academic is the term used to classify the professors and researchers employed by public universities and polytechnics in Portugal (Santiago et al. 2014). From the 1320 academics who answered the questionnaire, 857 were from universities and 319 from polytechnics (144 missing values in this item).

It was expected that this strategy allowed for selecting a certain number of diversified statistical cases and, thus, making possible some generalisations at the national level. Despite the sampling limitations, the diversity obtained in respondents, associated with the possibility of establishing comparisons with some conclusions of previous studies in the field, seems to support solid results and some generalisation of interpretations.

It is also important to notice, in order to contextualise data analysis, that academic careers in public higher education have remained unchanged from the end of the 1970s to 2009. During this period, two careers pathways were maintained, according to the existence of a binary system – universities and polytechnics.

[1] Public higher education has 15 universities, 15 polytechnic institutes, 19 higher schools and five institutions of police and military education. Private and cooperative higher education system comprises eight universities and 59 other establishments (academies, institutes and higher schools).

The different national missions defined for each sub-system – more vocational-driven for the polytechnics; and more research and academic knowledge-driven for universities – demanded two distinct perspectives on the academic career with universities being more research focused while in polytechnics more teaching focused.

At the time of the survey, the first appointment in both careers was supported in the same academic degree (bachelor). The minimum degree required to enter tenure track was the only difference detectable in the two subsystems – the PhD to the auxiliary professor position in university and the masters to the adjunct professor in polytechnic. University and polytechnic careers are very segmented and pyramidal in the sense that in the top of the academic rank (full professor and associated professor or coordinator professor) vacant positions are very scarce. Finally, according to Carvalho (2012), gender issues have also been important traces marking the Portuguese academic career structure from the 1980s onwards. These two variables were included in the analysis. However they will be only mobilised when statistical differences are significant (Mann-Whitney and One Way Anova tests).

10.4 Professional and Personal Characteristics of Academics

10.4.1 Some Aspects of the Academics' Social and Educational Background

In describing the main personal characteristics of academics in the CAP survey is relevant to highlight that the majority of respondents were men (55 %). It seems that the gender distribution of the sample reflects the profile of academic staff in Portugal. In 2005, 43 % (10,217) of the academics working in Portuguese public universities and polytechnics were women and in 2013 this percentage slightly decreased with women being 42.5 % of academic staff in public institutions (10,453). Even if women's participation in an academic career in Portugal is higher than in the majority of European countries (EC 2012) this does not represent a 'gender revolution' questioning men's overrepresentation and dominance in academics' professional group. However, it is important to notice that before the democratic revolution, women were practically invisible in academic careers (Carvalho 2012) notwithstanding the fact that they were the majority of teachers at all other educational levels (Carvalho and Santiago 2008). The 1974 democratic revolution opened the road to the elimination of legal and formal barriers of women having access to an academic career. At the same time, the emergence of new universities and polytechnics allowed for the opening of new vacancies and enlarging the opportunities for women to enter into this career (Carvalho 2012). But, a leaking pipeline and a 'gendered invisible hand' remained imposing a persistent vertical and horizontal segregation (Carvalho and Santiago 2008).

Analysing the age distribution of the academics surveyed, one can find that younger academics are a minority (from 25 to 34 = 8.4 %) with almost the majority being between 35 and 49 (58.5 %) and a considerable percentage being more than

50 years old (33.1 %). One can make the hypothesis that this is a generation 'trapped' by the higher education NPM inspired policies meaning budget restrictions and the increase use of 'parallel/informal' recruitment mechanisms, outside the formal career track (Santiago and Carvalho 2008). After the accomplishment of their PhDs, numerous younger candidates wait for an opportunity to enter an academic career. The use of this 'reserved army' of available academic 'workforce', as part-time or casual 'service providers', is cheaper than the creation of new permanent positions. The introduction of numeric flexibility, translated in fixed-term, part-time or full-time individual contracts may translate into a negative impact on the academic demographic pyramid.

Almost all academics in public higher education institutions (92.5 %) are of Portuguese nationality. The majority of the academics surveyed (97.4 %) use Portuguese as the first language/mother tongue in teaching activities. Concerning research activities, Portuguese is also used by academics in research (41.8 %), but English (58.2 %) is the most common. These results suggest that internationalisation, especially at the teaching level, is not a specific trace of Portuguese academics' professional group. Portugal did not start yet to 'import' its academic workforce from abroad. Although globalisation and the institutional narratives on the need to hire the best skilled worldwide academics to teaching and/or research positions were acknowledged, this 'importation' is still weak. On the contrary, as other semi-peripheral or peripheral countries have been experiencing (Altbach 2004), a relevant number of (young) Portuguese academics flow to the countries of the centre, thus increasing the country brain drain.

Moreover, data analysis reveals the existence of a relative inter-generational vertical mobility in these academics. Vertical mobility describes the recruitment to higher education career of academics whose parents had no higher education degree.

This is an important element to improve the understanding of the influence of the social class or stratification (Baudelot and Establet 1972; Bourdieu and Passeron 1964, 1970) in the academic recruitment using a sociological approach (Santiago et al. 2012). Apparently, both slight social ascension movement and the consolidation of the cultural and scientific capital among the academics surveyed can be observed (Dias et al. 2013). Actually, the majority of the academics seem to have attained higher degrees of scholarly qualifications when compared with their parents (Table 10.1). Some of them were the first generation in their social group to attain higher education and complete a higher academic degree. This may be interpreted as a result of higher education massification. The number of students increased from 40,000 students in 1974 to 400,000 at the time of the survey. The democratisation of the system drew in more and different types of students, namely students from lower socioeconomic backgrounds, older students and those entering higher education not directly from secondary education (Fonseca 2012).

This set of results is not surprising, since the mechanisms of production and reproduction (Bourdieu 1984) of the academic professional group changed dramatically after the democratic revolution. The higher education system expanded and access turned more democratic (not only in higher education, but also in secondary school). Due to the increasing supply of academic positions both in universities

Table 10.1 Educational background of Portuguese academic respondents: father, mother and partner

	Father		Mother		Partner	
Educational background	N	%	N	%	N	%
Entered and/or completed tertiary education	293	34	235	27.3	624	92.3
Entered and/or completed secondary education	265	30.7	238	27.6	45	6.7
Entered and/or completed primary education	289	33.5	360	41.8	1	0.1
No formal education	11	1.3	26	3.0	2	0.3
Not applicable	4	0.5	3	0.3	4	0.6
Total	862	100	862	100	676	100

Source: CAP Survey 2007/2008

(especially the new ones), and polytechnics, the social basis of recruitment was enlarged. The academic profession democratised itself and a new academic generation emerged: more socially heterogeneous and much less anchored in the country's social elites or dominant classes (Carvalho 2012).

However significant differences (sig = 0.009) arose in the family educational background when academics from universities and polytechnics were compared (Dias et al. 2013). The family background of the former is based on a higher educational capital than the latter. Actually, in those who have a higher education level, the educational capital of the parents (fathers) (34.6 %) of university academics is slight higher than that of the parents (fathers) of academics from polytechnics (32.9 %). In this way, it is not a surprise that more academics from polytechnics (37 %) have their origins in families which have accumulated less cultural capital (36.2 % only entered and/or completed primary school) when compared with their colleagues from universities (29 % of their parents only entered and/or completed primary school). These differences can eventually be explained by the polytechnic subsystem's later institutionalisation and probably with less prevalence of inbreeding in these institutions. The polytechnic academic 'market' might be less exposed to a 'closure strategy' (Weber 1995) in the control over the access to the profession. Being more recent, the mechanisms of reproduction of a pre-existent academic order did not fully apply to polytechnics as much as to universities. This probably means that, in the former, the recruitment for the academic profession was (and may still be) more open to candidates from lower social classes and with less accumulated cultural capital if compared with the latter. In sum, the recruitment control and regulation, based on loyalty to internal groups and personal allegiance to traditional or charismatic leaders (Bourdieu 1984) seem to be less evident in the polytechnic subsystem.

Moving now to the academics partners' situation, what seem to be more relevant is the fact that a huge majority of the academics surveyed (92.3 %) reported that their partner had a higher education degree (Table 10.1). A significant proportion of these partners are also academics (31.5 %). This encompasses, in general terms, the existence of a strong intra-generational mechanism of social reproduction, based on the leveraging of the social, cultural and educational capital (Bourdieu 1984).

The highest proportion (65 %) of those surveyed have responsibilities for children (1 = 24 %; 2 = 32.1 %; 3 = 11 %), but the great majority declare not to have interrupted (84.5 %) their work in the institution to assure child care at home (Dias et al. 2013). However, women seem to be more likely to have interrupted their academic activities to assure their children's care work (W = 27.7 %; M = 5.4 %; sig = 0.000). The analysis concerning the nuclear family did not bring any surprise, demonstrating the expected gender imbalances in care for the young. This reflects the traditional division of work in care duties (Santiago et al. 2012) or as Bourdieu (1990) suggested a phenomenon of reproduction of the traditional family social roles intersecting professional roles. Some studies developed around this research topic have been demonstrating that the gender imbalance in care for young children can help to explain the lower participation of women in science (Corley and Gaughan 2005; Kyvik and Teigen 1996), also being an additional barrier that women have to overcome in access to higher levels of academic rank career (Carvalho and Santiago 2008).

10.4.2 Career Trajectory

From the 1979 Decree-Law (448/79) defining the academic career legal framework to the 2009 new Decree-Law (205/2009) (following the approval of the Higher Education legal framework 6/2/2007) the academic career enjoyed 20 years of stability. The more recent legal framework (Decree-Law 205/2009) did not substantially change the hierarchical and pyramidal characteristics of the academic ranks. The same phenomenon occurred in the polytechnic career counterpart from the 1981 Decree-Law (185/81) to the new one (207/2009). For both career pathways (interchange between the two is not allowed), the only relevant difference refers to the minimum requirement to enter in the first pre-permanent academic rank – the PhD to auxiliary professor (university) and to adjunct professor (polytechnic). At the time of the survey, the majority of the academics surveyed (65.8 %) in public universities had a PhD and 73.9 % had obtained it from a Portuguese university (Dias et al. 2013). Advanced post-doctoral training, however, is more internationally-oriented in its character with 46.3 % of the surveyed declaring that they held it in foreign universities.

Data analysis also reveals that there was a substantial increase in the attainment of the PhD degree in the two decades between 1991–2000 and 2001–2008 (Table 10.2). These data seem to demonstrate that the elitist character of the small academic professional group in the pre-democratic era was eroded by the substantial enlargement of the pool of academic recruitment following the 1974 democratic revolution. The increase of academics holding a PhD between 1999 and 2008 reflects the later impact of the acceleration of the institutional programmatic diversification (creation of new units and the offer of master programs and doctoral training), of systemic and institutional diversity (institutional consolidation of the new universities and polytechnics all over the country), as well as of the massification and democratisation of the access (Carvalho 2012). As seen before, this growth

Table 10.2 Period of Portugues academics' PhD attainment according to gender and type of institution

		Gender (n = 566)		Type institution (n = 525)	
Years	% (n = 852)	Male	Female	Univ	Polyt.
1961–1990	14.2	78.7	21.3	95.5	4.5
1991–2000	36	57.9	42.1	88.8	11.2
2001–2008	49.8	57.7	46.3	80.8	19.2

Source: CAP Survey 2007/2008

and densification of the Portuguese higher education network raised an exponential increase in the number of PhD students at the national (the great majority) and international levels. It can be argued that PhD degrees become more 'democratised' since the beginning of the 1990s. However, as seen before, the academic profession segmentation and fragmentation become more visible. In spite of the increase of women's participation in the academic career, as CAP data also shows (from 21.3 % in 1961–1990 to 46.3 in 2001–2008) the gender gap is still on the ground. Studies on the field developed from 2008 to 2012 (Carvalho 2012; Carvalho and Santiago 2008, 2010a, b; Santiago et al. 2012) clearly show that the permanence of vertical and horizontal segregation was not challenged. In Portugal, as in other countries (Bagilhole 2007; Kloot 2004; Saunderson 2002), the global persistence of the imbalanced gender distribution by academic rank and 'tribes and territories' (Becher and Trowler 2001), is still a troubling phenomenon that needs further enlightenment.

Apparently, the appearance of NPM in the system and institutions, as a leading framework informing higher education policies and institutional reconfiguration did not stop the tendency for the democratisation of the academic career. However, since the beginning of the 2008 financial and economic crisis in the country, the opening of new academic pre-permanent and permanent positions have diminished dramatically, and a great number was suppressed, namely those linked to fixed-term part-time and non-tenured track full-time appointments.

10.5 Academics, Academic Work and Commitment/Affiliation

10.5.1 The Use of Academic Time

One of the most pertinent characteristics of academics as a professional group is the different way their time is allocated to different academic duties – research, teaching, administration/management and service. Data reveals that there were significant differences in the perceptions on time allocated to these activities during class period (Table 10.3). Academics surveyed indicated that they devoted more time per week to teaching (in average 20.32 h) than to research (in average 13.36 h).

Table 10.3 Portuguese academics perceptions on time distribution by activities

	Class period (hours per week)		Outside class period (hours per week)	
Academic activities	Mean	St. dev.	Mean	St. dev.
Teaching	20.32	9.773	9.20	7.566
Research	13.36	9.857	23.17	12.684
Services	2.76	4.805	3.45	6.260
Administration	5.82	5.883	6.33	6.893
Other academic activities	3.76	4.971	4.74	7.463

Source: CAP Survey 2007/2008

However, high values in standard deviation (9.773 for teaching; 9.857 for research) show that, probably, there was a significant diversity in the patterns of academics' perceptions on their engagement in these activities. The relatively low rates of time assigned to service (unpaid consulting, public or voluntary services, 'clients' and like) (on average 2.76 h) and administration (committees, meetings, units management and like) (on average 5.82 h) can be explained by the fact that only less than 50 % of academics declared that they were engaged in these activities. Not surprisingly, outside the class calendar, perceptions of time distribution change radically. More time is perceived as being dedicated per week to research (on average 23.17 h) and much less to teaching (on average 9.20 h).

A very slight difference ($F=2.054$; $Sig=0.8$) was found on this topic according to the perceptions over time allocated to teaching by women (21 h) and men (18.7 h). Furthermore, related to the sub-system, academics from polytechnics allocated less time to research than their colleagues from universities ($F=5.810$; $Sig=0.000$). These results are expected since universities and polytechnics, as seen before, are committed to different institutional missions – more research-oriented in the former and more vocationally-driven in the latter. In fact, research in polytechnics is essentially circumscribed to applied research and 'experimental development' almost linked to the entrepreneurial, agricultural and educational sets (Santiago and Carvalho 2008).

Considering all the academics surveyed, differences between teaching and research are hard to explain due to the diversity of contextual factors which may influence the relationship between them. In fact, until the 1974 democratic revolution, teaching formed the core of university activities. Only with the 1979 Decree-Law, research started to be increasingly promoted on academic career being transformed in the structural basis of the national scientific and technological system (Heitor and Horta 2012). Maybe due to the fact that research comes later into the university, teaching prevails as an essential component, at least in symbolic terms, of the academic professionalism (Carvalho 2012). With managerialism and NPM, teaching seems to still be a relevant task in the 'academic heartland' (Clark 1998), but contextual factors, as the over-fixation on organisational rationality around teaching quality assessment, as well as the new requirements for closer monitoring and tutoring students (Santiago et al. 2012), can influence the way

Table 10.4 Portuguese academics' engagement in teaching and research

Academic preferences and interests	N	%
Primarily in teaching	60	5.7
In both, but leaning towards teaching	301	28.8
In both, but leaning towards research	341	32.6
Primarily in research	70	6.7
In both, without emphasising teaching or research	274	26.2
Total	1046	100

Source: CAP Survey 2007/2008

academics allocate their time according to the new academic roles assigned to them. It is well known that in the face of knowledge society/economy and entrepreneurial external pressures, even in more market-oriented fields, finding time to do research, or even to articulate research and teaching, becomes increasingly difficult (Santiago et al. 2012).

In sum, data on the time allocated by academics to their professional roles confirm the recent international conclusions on the field (Locke et al. 2011; RIHE International Seminar Reports 2008), since academics seem to have the feeling that teaching still occupies a core place in the academic workload. This can conflict with the productivism principle, namely in research, which is now dominant in the state and institutional policies both in research and teaching (Carvalho and Santiago 2008, 2010a). Beyond the attempts to reconfigure the traditional social division of academic work by the introduction of horizontal segmentation lays the belief that quality and productivity in teaching and research can improve by means of their specialisation. The increasing dissemination of political and institutional narratives on the unavoidable need for higher education institutions to be more sensitive and intensify their linkages with their 'stakeholders' frame the dominant notions of quality and productivity. Slaugther and Leslie (1997) and Slaughter and Rhoads (2004) termed this phenomenon as the rising of academic and knowledge capitalism, meaning the hegemony of knowledge (economy) utilitarian philosophy over research and teaching/learning 'why', 'what' and 'how'.

10.5.2 Academics' Engagement in the Relationship Between Teaching and Research

In a certain sense, the above views on time allocated to academic activities are closer to their views on their own relation with teaching and research. In general terms, these views seem to be balanced (Table 10.4). However, among the great majority (87.6 %) that claims preferring to be engaged simultaneously with research and teaching, a slight tendency to emphasise more research (36.6 %) than teaching (28.8 %) can be observed. Besides, a relevant group (26.2 %) reported also that they have the same interest for both teaching and research. Only a minority stressed

exclusively teaching (5.7 %) or research (6.7 %) as being exclusively their option. Once more, differences can be found comparing academics from universities and polytechnics (Sig = 0.001). Within the relationship between research and teaching, academics from universities emphasised more leaning towards research than academics from polytechnics (universities: 35.6 %, and polytechnics: 27.3 %); and tendencies reversed with the latter stressing leaning more towards teaching than the former (polytechnics: 36.9 %, and universities: 25.3 %). It is important to notice that strong pressures have emerged over academics from polytechnics to be engaged in applied and commercial research and to publish, which is an incentive for 'academic drift', parallel to the increase of 'professional drift' in universities.

These academics' views on the relationship between teaching and research are a pertinent empirical sign that, eventually, different agendas can be found in institutions policies and strategies and in academics professional behaviours. The third period, the end of the 1990s, identified by Carvalho (2012) as the period of increasing marketisation and managerialisation of the Portuguese higher education, forms the ground where agendas seem potentially antagonistic in a more visible way. It has been the period where the external control over the social division of academic work has increased substantially, together with attempts to establish new professional specifications of academic work and of academics as professionals. This encompasses what Musselin (2013) calls the 'management of academic work' resulting from the political and managerial empowerment of universities. Under different forms, according to each country, and even each institution, new modes of social division of the academic work aroused focus on specifically labelled research and teaching positions (Musselin 2013). This is not a phenomenon anchored in individual decisions, according to which academics adapt their professional behaviours and practices (Musselin 2013) to the internal dynamics of institutions or units. Instead, it streams from a new institutional (re)conceptualisation on academic work, enabled by changes on policies at the national level. How far this (re)conceptualisation relies on disagreement between the institutions and the academics' professional agendas is an open issue that needs further research. For the moment, based on Musselin (2013) arguments, the standpoint is that this new academic work (re)conceptualisation seems to be stabilised in the institutional landscape (Santiago and Carvalho 2012) and does not represent individual adjustments. On the contrary, it is controlled and formalised at the top organisational level and, in some cases, at the intermediate level (Musselin 2013; Santiago and Carvalho 2012). Analysing our survey data, the academics' responses reveal that this was not yet strongly impacted on their agendas and on the relationship between research and teaching.

10.5.3 Inbreeding, Localism and Endogamy

Usually, in almost all European higher education systems an important proportion of the academic staff has been recruited from former students who got their PhD from the same institution (Musselin 2013). Often these students were also former

Table 10.5 Portuguese academics' work experience in the academic profession

	1		2		3		4		Total	
Number of institutions	N	%	N	%	N	%	N	%	N	%
Since first degree	668	50.6	220	16.7	76	5.8	163	26.9	1127	100
Since highest degree	591	70	87	10.4	52	6.2	110	13	840	100

Source: CAP Survey 2007/2008

bachelors or masters students in the same institutions. This phenomenon has been interpreted, in a negative sense, with the notions of 'localism', 'endogamy' or 'inbreeding' (Cruz-Castro and Sanz-Menéndez 2010; Horta et al. 2010; Musselin 2013; Padilla 2007). It is linked, eventually, to tacit norms and organisational arrangements, embedded in local institutional interactions and cultures; and can be also understood both as an expression of the bureaucratic tendency for social closure (Weber 1995) and self-reproduction (Bourdieu 1984). In this sense it emerges as an academic mechanism of institutional control connected to a given political and social order (Bourdieu 1984).

With inbreeding, there is also a tendency for academics' low mobility. Academics responses (Table 10.5) allow for some analysis concerning the presence of this phenomenon in Portuguese institutions. In fact, since their first degree, the majority of the surveyed (50.6 %) declared that they have worked in only one higher education institution, while taking the highest degree attained, this percentage increases to 70 %. These findings show similar trends noticed in other studies specifically developed on this topic whether involving different institutions and disciplinary areas or a single institution and only one disciplinary area (Horta et al. 2010).

However, recent tendencies in academic recruitment can change this phenomenon. Hiring outside the institutional circle, and even outside the national circle, has been fuelled by the belief that performance and quality, namely at the research level, should be substantially increased by this strategic change on human resources management. In Portugal, since the 2009 approval of the new academic career statute, announcements to an opening of a permanent position leading to tenure track was extended to the international academic labour market.

10.5.4 Employment Standing

At the time of the CAP survey, the great majority of the academics surveyed (94 %) were in a full-time position. However, in terms of the time of the contract, although the majority of the academics were tenured or had a tenure track fixed-term contract (68.8 %), a relevant percentage did not enjoy this employment status, being fixed-term enrolled but with no continuous permanent employment prospects (23.8 %) (Table 10.6).

Few academics were also continuously employed (2.9 %) but with no guarantee of permanence. Before the rise of market and managerialism in the Portuguese

Table 10.6 Portuguese academics' institutional position related to employment contracts

Employment contracts	N	%
Tenure	545	47.2
Fixed-term/tenure track	249	21.6
Continuously employed (no guarantee of permanence)	34	2.9
Fixed-term employment (no continuous employment prospects)	275	23.8
Other	52	4.5
Total	1155	100

Source: CAP Survey 2007/2008

higher education landscape this was uncommon in Portuguese institutions (Santiago and Carvalho 2008). Market and managerialism has given rise to more formalised and, apparently, transparent recruitment procedures, in the name of merit criteria, but simultaneously informal and local arrangements increased. This situation are often translated in fixed-term individual contracts, which corresponds to casual, part-time and even full-time teaching and research activities. Polytechnic was the subsystem where these practices were more in use.

Tenure and tenured track were the more common institutional positions in academics surveyed from universities (52.7 and 26.6 %) while this was quite an exception in academics from polytechnics (33.9 % and 8.4 %). In addition the fixed-term employment without permanent/continuous employment prospects has been the pattern of employment in polytechnics (polytechnics: 48.7 %; and universities: 14.7 %).

At the time of the survey, data can be explained by the scarcity of tenured track positions available in the middle and top polytechnic academic rank. Academics stabilised on the bottom of the pyramid, although their qualifications meet the specified requirements to progress from a pre-permanent position to a permanent one (tenure). However there were no vacant positions available (allowed at the national level for each institution). As so, in waiting for the opening of a permanent position, academics from polytechnics were moved to a casual position or a fixed-term employment with no continuous employment prospects. In this sense, one can argue that managing academics in polytechnics by numeric flexibility was not a specific local policy but instead a national policy which was extended to universities with the new 2009 career statute mentioned before (Decree-Law 205/2009 for universities; and Decree-Law 207/2009 for polytechnics).

10.5.5 Sense of Identity, Commitment and Affiliation

The academics surveyed were also asked for their views on some statements linked to the conception of academic work, namely about the place that research and knowledge occupies in scholarship (Table 10.7). Knowledge application (application in real-life) was identified as the main component supporting scholarship settings stressed by academics (agree 42.6 % or strongly agree 34 %), also research

Table 10.7 Defining scholarship according to Portuguese academics

Scholarship as:	St. dis. 1	2	3	4	Set. dlis 2	Total
Research (preparation of findings on original knowledge)	3.4	4.8	17.7	34.0	40.1	100 (n = 644)
Knowledge application (application of academic knowledge in real-life settings)	2.5	7.0	14.4	43.4	32.8	100 (n = 647)
Synthesis of findings (preparation of reports that synthesising the major trends in my field)	2.7	12.1	29.1	38.3	17.8	100 (n = 639)

Source: CAP Survey 2007/2008

(preparation of findings on original knowledge) being strongly emphasised (agree 35.5 % or strongly agree 37.5 %). The identification of scholarship with the preparation or synthesis of findings (preparation of reports synthesising the major trends on findings) in a given field was much less consensual. For the academics in our sample, one can say that the knowledge logic, as a mediator in the relationship between academics and students, which is typical from the humboldtian 'style', still has a core place in Portuguese scholarship.

Moving now to the commitment issues included in the survey, the majority of academics declared that, in general, they do not have the intention to move to another job (58.8 %); and specifically they have the will to maintain their links to their current institution. Furthermore, the majority of the surveyed declared also that they have no intention: to get a management position (92.3 %) in the higher education institution where they are working; to get an academic position in another higher education institution or research institute (79 %); to have an academic position in another country (81.2 %); or to get another job outside the academy (80.3 %). Following the same logic, when, academics were asked on the actions they have undertaken to change their job, the huge majority (from 95 to 98 %) responds they did not make any such effort.

In a certain sense, some ambiguities appear in the surveyed statements when previous responses are confronted with their feelings of affiliation. Academics felt a stronger affiliation to their discipline than to their department or institution. In fact, 79.3 % of the surveyed claim that their affiliation to their own discipline is important or very important, while the affiliation *vis-à-vis* the department (59 %) and institution (66.4 %) is more nuanced (Table 10.8). However, taking the results on these last two topics, one can detect that a sizeable proportion of those surveyed show a 'neutral' position concerning the affiliation feelings to their institution (Table 10.8). These results seem to indicate that there was not a strong individual variation in the responses of academics. Firstly, they feel committed to their discipline, and only after to their institution and department.

The recent managerial empowerment of higher education institutions, towards their vertical integration, did not match academics' feelings; although the increase in the development of organisational processes towards tight control over academics

Table 10.8 Portuguese academics' affiliation to academic discipline, department and institution

Affiliation to:	Not at all imp. 1	2	3	4	Very imp. 5	Totals
My academic discipline/field	5.7	5.2	9.7	26.4	53.0	100 (n = 651)
My department at this institution	4.9	10.8	26.8	31.4	26.0	100 (n = 649)
My institution	3.8	6.9	23.1	33.5	32.7	100 (n = 654)

Source: CAP Survey 2007/2008

activities and careers was in tension with these feelings. The academics' autonomy and their occupational control over the division of labour and the allocation of tasks (Freidson 2001; Musselin 2013; Santiago and Carvalho 2012) was also reduced in the Portuguese institutions. But, apparently, this did not weaken the feeling of disciplinary ties and the replacement of this feeling by a closer identification with institutions and units.

To sum up, these sets of results seem to indicate that the political attempts to induce changes on academics' loyalties from discipline to institution, arising in the framework of an on-going managerial and corporate process to unify structures, processes and values in institutions (Carvalho and Santiago 2008, 2010b; Santiago and Carvalho 2012) did not entirely succeed. The academics' affiliation to their discipline is still stronger than to their institution (and also to their department) which confirms, at least partially, the main conclusions of some international studies on the field developing since the beginning of the twenty-first century (Dearlove 2002; Locke et al. 2011).

10.6 Not to Conclude…

This chapter tried to examine the main traces of the professional characteristics and career trajectories of Portuguese academics. It was possible to demonstrate that the Portuguese academic career does not have a unified structural composition but is fragmented, segmented and pyramidal according to the existence of a binary system (university and polytechnic), gender inequalities (vertical and horizontal segregation) and a bureaucratic-driven 'philosophy'. Increased stratification, leaking pipeline and 'gendered invisible hand' still persists in the managerial environment surrounding the academic profession in Portugal.

In general, the Portuguese academics are more educated than their parents, what configures a (slight) movement of social and inter-generational ascension confirmed by the presence of mechanisms of social reproduction 'at work' in the choice of their partner. The academics' partner's educational level is commonly in higher education. Besides, the great majority of the Portuguese academics have one or two children and women academics are those who are more likely to interrupt their work

to provide care to a child (or elder) at home. Gender imbalances in care for children suggest that the traditional family social roles intersect the professional roles.

The majority of the Portuguese academics were between 35 and 49 years, meaning that at this age they are at the middle of their career in terms of their professional trajectory life span. Most of them earned a PhD between 1991 and 2008, with 2001–2008 being the period where the attainment of this academic degree has increased more. Since this highest degree, academics have not experienced diversity in terms of inter-institutional mobility, reflecting the presence in institutions of what some called as 'inbreeding' or 'localism' in the recruitment process. Almost all the surveyed academics are full-time, although this employment situation does not mean that they have a tenure or a permanent position or even that they are in a tenure track route. In fact, there are a relevant number of academics that are continuously employed, but with no guarantee of permanence, or have a fixed-term contract without continuous employment prospects. This employment situation is particularly visible in the polytechnic sub-system.

Academics also perceived that they are spending more hours per week in teaching than in research. However, those from universities devoted more hours to research than those from polytechnics. Women academics also devote more time per week to teaching than men. Moreover, there is a large consensus among academics about the idea that knowledge application and research are the activities that can best characterise scholarship. Finally, almost the totality of those surveyed perceived the interconnection of research and teaching as the leading framework of the academic profession, but among academics from universities, a slight tendency to assume research as the most important component of these two activities emerged, while academics from polytechnics stressed more teaching.

As can be seen by data analysis, some of the important traces of professional characteristics and trajectories of Portuguese academics are shared with their counterparts from other countries (Locke et al. 2011; RIHE International Seminar Reports 2008). However, we need to go further in future analysis on those topics by examining more in depth the impact of neo-liberalism and managerialism/NPM over the academic profession and professionalism. In this sense, it will be pertinent to intersect quantitative and qualitative research analysis. The overall view allowed by quantitative approaches does not allow, by itself, clarifying the complex character and dynamics of the current political, organisational, managerial and personal challenges that academics are facing as a professional group. Intersecting quantitative and qualitative approaches also supposes looking closer at other variables – type and age of institutions, disciplinary, sub-disciplinary, interdisciplinary and trans-disciplinary fields, higher education' regional/national landscape and governance and management 'styles' – in order to extend our understanding over the changing 'profile' of the academics working in Portuguese higher education institutions.

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Legislation

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Decree-Law 207/2009
Decree-Law 448/79

Chapter 11
Academic Inbreeding of Korean Professors: Academic Training, Networks, and their Performance

Jung Cheol Shin, Jisun Jung, and Soo Jeung Lee

11.1 Introduction

Despite the rapid growth of higher education enrollment in Korea, the higher education system at the post-graduate level was not training enough students to step into university faculty positions prior to the 1980s. Higher education policy before the 1990s was aimed more toward expanding enrollment at the undergraduate rather than the post-graduate level (Shin 2012a), and this unbalanced demand-supply structure of the faculty job market existed until the mid-1990s. Prior to that time, many academics were hired with only a master degree, and many of them were not fully prepared for their teaching and research role as faculty members.

The lack of solid academic training programs in Korea caused academics to follow a few common career paths. Many went overseas, e.g., to the United States (U.S.), the United Kingdom (U.K.), Germany, and Japan to obtain advanced degrees, then returned to Korea and became professors in Korean universities. This career pattern is still quite common today. For example, the proportion of faculty trained by foreign universities was close to 40 % in 2008 (Shin 2012b). Many believed that academics with doctoral degrees from advanced higher education systems are more capable of being successful. Second, a significant number of universities tended to hire their own graduates, including bachelors and PhD graduates, as faculty members to supplement unfilled positions.

In this context, the present study focused on faculty training and inbreeding in Korea and its impact on the academic profession. Faculty training is regarded as a

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critical factor in explaining faculty perceptions, behavior, and performance in many higher education settings. It is similar to demographics e.g., gender, age, family, but differs slightly because faculty training represents the academic socialization process of professors as well as knowledge and skills that they learned in the training processes (e.g., Schommer-Aikins et al. 2003). Along the same lines, faculty who graduate from a foreign university might internalize different perceptions toward academic scholarship (e.g., research, teaching, and service) compared with their colleagues who graduated from a Korean university.

For this reason, faculty PhD training is a strong factor in explaining faculty members' perceptions, behaviors, and performance. Faculty training can be related to personal experience (e.g., research experience with one's professors, post-doctoral experience, teaching methods training) or to structural factors (e.g., one's graduating university or major). Personal experience factors might even vary among professors who graduated from the same PhD program with the same major. Higher education researchers have explored these personal experiences factors (e.g., Shin and Cummings 2010), but few studies have been conducted on the structural factors. In Asian contexts such as Japan and South Korea, structural factors are critical in faculty hiring, promotion, and grant seeking (e.g., Horta et al. 2011). This study therefore describes the patterns of doctoral training and inbreeding status among Korean academics and how these differ by university mission and discipline. We then uncover how faculty training, mainly structural factors, affects academics' perceptions, activities, performance, and job satisfaction.

Academic inbreeding is defined as a "recruitment practice in which universities hire their own graduates as faculty directly after doctoral graduation" (Horta et al. 2011, p. 36). Academic inbreeding has two dimensions of influence on academia. It is generally understood as a negative process since a university chooses faculty members within its limited pool of graduates, who then only transmit similar knowledge rather than encouraging creativity and fresh perspectives. However, inbreeding also has several advantages, such as institutional commitment from inbred academics. Inbreeding has different configurations in various higher education contexts. For example, unlike the general definition of inbreeding, it is more commonly understood as hiring professors who had been awarded their first degree, not their doctoral degree, at the same university in Korea according to the 'Public Educational Officials Act' of 2005 (article 11–2). With the introduction of this unique context in Korea, we explore the influence of academics' backgrounds on their perceptions, activities, and performance. We propose three research questions in this study as follows:

1. What are the patterns of doctoral training among Korean academics, and how do they differ by university mission and discipline?
2. What is the inbreeding status among Korean academics, and how does it differ by university mission and discipline?
3. How do faculty members' perceptions, workloads, performance, and job satisfaction differ based on the patterns of their PhD training and their inbreeding status?

11.2 The Contexts of Korean Higher Education

To explore the relationship between doctoral training/inbreeding status and the academic profession in Korea, we need to understand the context of Korean higher education. In this section, we first introduce the expansion of the faculty job market. Then, we discuss the background of the academic network and hierarchy in the Korean higher education system. Finally, we describe faculty hiring patterns in Korea in terms of doctoral training and inbreeding.

11.2.1 Growth of the Faculty Job Market

Higher education enrollment has rapidly increased in Korea over the last six decades. In the 1950s, the number of students enrolled in higher education institutions was only 11,358, and enrollment increased to more than 3.5 million in 2002. Currently, 71 % of high school graduates went on to undertake college (two or four-year institutions) education in Korea in 2014. South Korea has experienced the most successful expansion of higher education among all OECD countries.

This growth was initiated by the government in order to provide more opportunities for high school graduates. Government policies were instituted in two ways (Lee 1989). One policy approach was adopted in 1980 to expand the student quota by the government allowing higher education institutions to admit 30 % more students. The other approach was to allow new, private higher education institutions to enter the higher education market. Currently, over 80 % of college enrollment is accounted for by the private sector.

Despite the rapid increase in college enrollment, the university sector was not ready to train its graduate students for faculty positions in 1980 because the Government introduced the policy too rapidly. As a result, the post-graduate students hired as professors in the early 1980s were not fully prepared for their role as faculty members. Many of them held only master degrees and did not have enough experience in research and/or teaching. As shown in Fig. 11.1, the number of PhDs granted was less than the total number of faculty from 1981 to the mid-1990s. Master degree holders and foreign PhD degree holders filled the gap between the demand and supply of PhDs. In 1965, the proportion of doctoral degree holders among faculty members was only 13 %; however, it had increased to 59.4 % by 1995, and now it is currently above 90 % (Korean Ministry of Education, and Science and Technology 2010).

With the increasing demand for a doctoral education, many Korean universities have established doctoral programs. However, the quality of these doctoral programs was insufficient to train future academics in the initial stage, and even today, many PhD program providers are struggling with the quality of their programs. Naturally, Korean universities preferred to recruit academics who had earned doctoral degrees abroad, and this preference was particularly strong in research universities with good reputations (Shin 2012b).

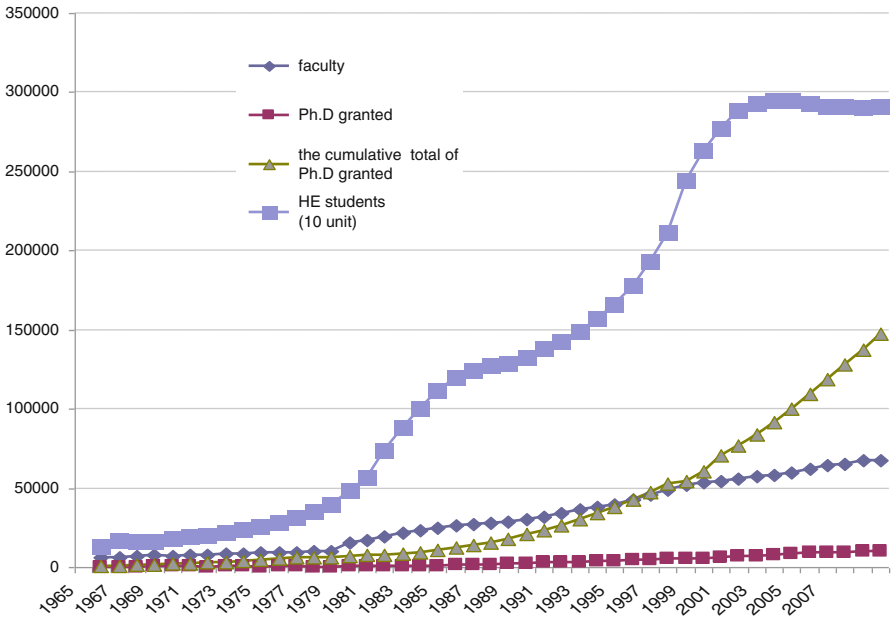

Fig. 11.1 Growth of higher education market in Korea (Source: Korean Ministry of Education (1965–2010), *Education statistics*)

11.2.2 University Hierarchy and Academic Networks ('hakmack')

To understand the pattern of doctoral training and inbreeding among academics, we need to describe the hierarchical structure of the higher education system and academic network in Korea. The hierarchy of higher education can be interpreted in different ways according to the specific context and proved by different forms of measurement such as university reputation, student's academic achievement, or faculty performance.

In this study, we used the mission classification proposed by Shin (2009) to understand the hierarchy of Korea's higher education system. His study classified Korean universities into 'research, research active, and other comprehensive universities' based on faculty performance; however, this classification is also a useful way to interpret the unique hierarchy of Korean universities. For example, research universities in his classification have not only the highest research output among faculty members, but also the best reputation in society. In addition, at the undergraduate level, these universities recruit the top students based on their scores in a very competitive national exam. Second, the research active universities also have a great reputation with an abundance of doctoral programs, although their research performance is relatively lower than top-tier research universities. Third, other comprehensive universities have lower research performance among academics (for details, see Shin 2009). In this study, we used Shin's (2009) mission

Table 11.1 PhD degree granted by types of university mission

Mission	Engineering	Medical science	Natural sciences	Humanities and social sciences	Arts and physical science	Total
Research universities	1,159	531	531	529	135	2,885 (35.6 %)
Research active universities	753	844	377	451	126	2,550 (32.3 %)
Other universities	647	459	380	816	163	2,464 (31.2 %)

Note: The mission is based on Shin's (2009) classification of Korean universities
Source: Korean Ministry of Education and Science and Technology (2010)

classification as an empirical measurement to understand the hierarchy of Korean universities, and this classification can be described as an example of universities' reputation.

The rapid expansion of the faculty job market since the 1990s enabled a few universities capable of training PhDs to dominate the PhD training market. As Table 11.1 shows, only 21 research-focused universities train almost 70 % of the PhDs in Korea. In particular, majority of them come from only seven major universities. They form strong networks for their academic life (e.g., conference information, job opportunities, research collaborations, etc.). This network is called the *hakmack* in Korea and has strong links in business, politics, and the bureaucratic life of Korean elites.

In addition, university hierarchies have constantly been reinforced by the *hakmack*, as graduates of prestigious universities have benefited from the *hakmack* networks in their personal lives. Interestingly, undergraduate education is at the core of the *hakmack* rather than graduate education, as university admission for undergraduate colleges is very competitive while graduate programs are less so. Consequently, the networks between professors and students and between university graduates are based on their undergraduate education. From the perspective of an academic network, undergraduate networks are much more powerful than graduate networks, and the networks of undergraduate alumni are even stronger. This undergraduate alumni network remains strong even when they study abroad and after returning Korea with advanced degrees.

The universities from which students graduate (hereafter referred to as 'home universities') provide students with their potential networks for their academic lives and the benefits they enjoy in their personal lives. Because of the tremendous social benefits of the *hakmack*, many K–12 students spend a significant amount of effort in getting accepted by prestigious universities (e.g., Seoul National, Yonsei, Korea, Ehwa Women's, Sungkyunkwan, Hanyang, etc.). When they fail to get admitted to the prestigious universities, they repete for their university exam in a 'private tutoring institute' to ensure they get high test scores (Lee et al. 2010). The Korean government has introduced many policy initiatives to mitigate the *hakmack* and its negative impacts; however, there is no sign that the initiatives are successful.

The *hakmack* is also influential in hiring professors in many universities. Graduates from prestigious universities compete with each other to secure an academic job. For example, the graduates of Seoul National University (SNU) have strong *hakmack* because the university has the most prestige in Korea. There are some second-level universities that are closing in on SNU, but there is still quite a gap in terms of social reputation, the academic achievement of their students, and faculty performance.

11.2.3 Patterns of Doctoral Training

After finishing their first degree within the hierarchical system, as we described in the previous section, students who decide to continue their studies choose universities to obtain either their master's degree or their PhD degree. They have three options from which to choose for their advanced degrees.

First, from a traditional perspective, students prefer to go overseas for their PhD degrees, and having a PhD degree from an advanced higher education system is highly regarded when they return to Korea seeking an academic position. The primary goal of studying abroad for elite students is related to gaining advanced knowledge and skills from developed countries. For this reason, many Korean students go to the U.S., Japan, and other selected European counties (e.g., the UK, Germany, and France) (Shin 2012b).

Second, students who do not go abroad but instead choose domestic universities have two options: one to choose their home university to earn their PhD and the second is to choose another Korean university. Most of the latter group tends to be concentrated in research universities, at least some regional hub universities with a better reputation than that of their home university for undergraduate study.

For academics, and in particular for Korean academics, having an advanced degree from a research university is critical to obtaining a faculty job. Shin (2012b) proposed three types of faculty doctoral training patterns focused on study abroad. The three patterns could be expanded to five patterns by considering their inbreeding status. This study expanded the patterns to five types by focusing on academics' first degree, which is a critical factor in academic inbreeding in Korean higher education. The first degree (undergraduate degree) is critical in academic networking in Korean academic society because social networks depend more on undergraduate education, but the masters program is not a critical factor in obtaining faculty job in a Korean university. In this context, the *hakmack* network is based on an academic's home university during their undergraduate years.

- Pattern 1: A graduate who obtained his/her first degree in a university with an excellent reputation goes abroad for his/her PhD, most likely to a U.S. university, then returns to Korea and becomes a professor in a university.
- Pattern 2: A graduate of a highly reputable university stays at his/her home university for his/her PhD and then becomes a professor in a university.

- Pattern 3: A graduate of a university without a great reputation goes abroad for his/her PhD or transfers to a Korean university that has a better reputation than his/her home university
- Pattern 4: A graduate of a regional hub university continues on at his/her home university to earn his/her PhD and then becomes a professor in a university.
- Pattern 5: A graduate of a local university moves to a regional hub university for his/her PhD and then becomes a professor in a university.

The professors who teach in research universities with excellent reputations usually identify with pattern 1 or 2, although there are some exceptions. The majority of professors who identify with patterns 3, 4, or 5 work in local universities that do not have the top reputations.

To 'study abroad' implies that they are elite students if they graduated from highly reputable Korean universities; on the other hand, study abroad for other students implies that the students have a chance to upgrade their 'academic prestige' through study outside Korea. Therefore, professors in pattern 1 tend to get academic jobs at Korean research universities with great reputations. They are considered the elite, and their networks with their former professors are a great help in their job searches. Their former professors are influential in Korean academic society and they continue to help their students to obtain positions in Korean universities.

However, professors in patterns 2, 3, and 4 tend to compete with one another. Although professors in pattern 2 graduated from highly reputable universities during their undergraduate education, their PhD training is not as highly regarded when compared with their peers who have been trained abroad. Professors in pattern 5 are less competitive than their peers in patterns 2, 3, and 4 and they tend to obtain positions in local universities.

Sending elite students to study abroad is typical of a developing country; however, the pattern is quite different in most developed countries where elite students are generally trained by domestic universities, as is the case in Japan (Horta et al. 2011). Since studying abroad is a major characteristic of the Korean academic profession, examining patterns of how PhDs are obtained may be useful. In this study, we simply classified PhD-trained faculty in three ways: faculty members who earned their PhDs abroad, from their home universities, and from other domestic universities.

11.2.4 Inbreeding and Faculty Hiring

Faculty inbreeding has been widespread in prestigious universities; it was a critical issue in U.S. universities in the early 1900s, and even today is an issue in some disciplines, e.g., law schools (Eisenberg and Wells 2000; Horta et al. 2010; Soler 2001). Although there has been controversy on inbreeding issues among academics, inbreeding has both positive and negative sides.

Inbred faculty members are less productive in their academic performance (Horta et al. 2010; Pelz and Andrews 1966; Soler 2001); they tend to maintain the current campus culture and resist innovation (Horta et al. 2011; Velho and Krige 1984). They also resist establishing meritocracy on campus (Horta et al. 2011). On the other hand, academic inbreeding has mutual benefits to home universities and their current faculty. Inbred faculty members have high institutional identity and loyalty to their home universities. They tend to voluntarily take on unpopular tasks such as service and administration while non-inbred academics may be less inclined to undertake such work for their universities (Horta et al. 2011).

Inbreeding is most widespread at the top of the reputation/quality ranks of universities in certain countries with a steep vertical university hierarchy, e.g., the U.K., Japan, and Korea. However, the terms of inbreeding differ across higher education systems. For example, in Germany, inbreed professor means a professor who has been employed at the same university where he/she is hired as a professor immediately after his/her junior professorship. In the U.S. and many other countries, inbreeding is understood as the hiring of professors who have been awarded a PhD at the same institution. In Korea, in contrast, inbreeding is understood as the hiring of professors who have been awarded their first degree at the same university. This reflects an inclination of universities to recruit former graduates, irrespective of whether they had their doctoral training at their home institutions or abroad.

Teaching, especially as a professor, is considered a prestigious job in Confucian countries such as Korea, and there is extensive competitive for any new faculty position. Given this, transparency in the faculty hiring process is important. Although the news media often report corruption in the faculty hiring process the process is generally open and transparent because of strong governmental involvement. The minimum criteria for applying for a faculty job were set by the government (now, each university sets the criteria), and the national government conducts inspections if it detects anything suspicious.

The governmental efforts to make the hiring process transparent were successful to some extent; however, the culture of faculty hiring has not changed much. Senior professors have strong ties with their former students who are professors, and the network also extends to the senior professors' current students. Because of the academic networks (*hakmack*), the internal faculty hiring process is relatively less transparent and thus the *hakmack* is the main social issue to address (Korean Ministry of Education and Science and Technology 2010). Faculty inbreeding has been a longstanding issue for policymakers as well as academics.

The rate of faculty inbreeding is about 25 % nationwide, and the proportion does not differ across different types of universities. However, inbreeding is particularly high among the top level of research universities in Korea—i.e., Seoul National, Yonsei, and Korea University. The rate of inbreeding is over 50 % in the top-ranking Korean universities—89 % in Seoul National, 77 % in Yonsei, and 61 % in Korea—and this raises concerns about transparency in faculty hiring. This is similar to other countries, including the U.S. where top-ranked universities (e.g., Harvard, Yale, and Stanford) have high faculty inbreeding rates (Burris 2004). In some contexts, a high

level of inbreeding is a sign of competitiveness. For example, top-ranking departments in top-ranking universities tend to have higher inbreeding rates than relatively lower-ranked departments in the same universities.

Nevertheless, policymakers suspect that academic networks—*hakmack*—might be influencing the faculty hiring process rather than meritocracy. In the early 2000s, the national government set a guideline that one out of every three new faculty members must be a graduate from another university (Public Educational Officials Act 2005). Since then, the rate of inbreeding has decreased in many universities although there is still controversy about this in Korea. For example, the inbreeding rate for newly hired faculty was 18.52 % in 2007, 17.8 % in 2008, and 17.9 % in 2009 (Korean Ministry of Education, Science and Technology 2010).

11.3 Data and Analytical Strategy

The data for this study is drawn from the Korean Changing Academic Profession (CAP) data—an international comparative study on academic professions. The data include 900 regular full-time professors in four-year universities. The sample represents a population of Korean professors by discipline, gender, faculty ranks, etc. To analyze the data according to our main research interests, we pay special attention to three aspects.

First, we focus on patterns of doctoral training among Korean academics. Did they obtain their doctoral degrees in Korea or overseas? If they obtained their doctoral degrees in Korea, did they complete their degrees in their home universities or other universities? This provides insight on the doctoral training pattern among academics in Korea. However, this pattern differs according to structural factors, such as the university type. We examine how this pattern of doctoral training differs by institutional mission and academic discipline as well. In this analysis, the university mission classification of Korean universities is based on Shin's study (2009), and academic disciplines will be classified according to hard and soft dimensions (for details, see Shin and Cummings 2010).

Second, we focus on the academic inbreeding status among Korean academics and how it is related to faculty hiring patterns in Korea. In analyzing faculty hiring patterns, we focus on whether a faculty member is hired by his/her home university. In this study, as described previously, 'home university' refers to the university where an academic obtained his/her first degree. In other words, faculty inbreeding depends on whether a professor graduated from an undergraduate program in his/her current university. This is quite different from the U.S., where a PhD program is the main criterion for judging inbreeding (e.g., Eells and Cleveland 1999), and this reflects the social context of Korean higher education, as we discussed in the previous section.

Our third area represents our primary research interests, namely how faculty members' perceptions, workloads, performance, and job satisfaction differ based on

the patterns of their PhD training and their inbreeding status. Faculty members' perception about academic scholarship is a critical factor in explaining their activities and performance. For example, some put more weight on research than on teaching. In addition, faculty members who have been trained in a research-focused university, particularly in a world-class research university, may differ in their research performance from their peers who have been trained in less prestigious universities. Further, the differences in their perceptions and performance may be related to their job satisfaction. To examine this, we will develop a multivariate model to test whether inbred academics are more research productive and/or more satisfied with their academic job than those non-inbred academics.

11.4 Findings and Discussions

11.4.1 PhD Training Among Korean Academics

PhD training is analyzed according to where they obtained their degrees. We classified three types of PhD training—abroad, home university in Korea, or other universities in Korea. As shown in Table 11.2, the majority of professors obtained their PhD degree either from foreign universities (42 %) or from their home universities (40 %), and only 16 % of the professors earned their PhDs from other domestic universities.

These descriptive statistics show that the faculty PhD training patterns of Korean academics are quite simple: they study abroad or they stay on their own campus to complete their PhDs. This pattern is different from Japan where most professors obtained their PhDs from their own country. Contrary to Japan, Korean universities tend to prefer foreign degree holders, especially from US universities and this is particularly getting important since Korean universities has been emphasizing internationalization and teaching courses in English (Shin 2012b).

Interestingly, the preference for Korean universities to hire faculty with overseas doctorates or who attended their home universities for their undergraduate studies is stronger in research universities than in others (mostly teaching-oriented

Table 11.2 Patterns of Korean academics' PhD training by institutional mission

	Place of award of PhD			
Mission	Abroad	Home university in Korea	Other university in Korea	Total
Research university	199 (48.9)	169 (41.5)	39 (9.6)	407 (100)
Research active university	86 (38.2)	109 (48.4)	30 (13.3)	225 (100)
Others	69 (36.1)	56 (29.3)	66 (34.6)	191 (100)
Total	354 (42.0)	334 (40.0)	135 (16.0)	823 (100)

Notes: (1) home university: university of first degree, (2) Mission: Shin (2009)'s classification
Source: CAP Survey 2007/2008

universities). As Table 11.2 indicates, the proportion of overseas doctorates is highest in research universities where the number of home university graduates is also high. However, the proportion of faculty members from other universities in research universities is only 9.6 %. On the other hand, in other universities, the proportion of overseas doctorates is low but the proportion of faculty from other domestic universities is high. The stronger the mission is research-oriented, the greater the numbers of overseas or home university doctorates are found.

The type of PhD training differs by academic discipline as well. For example, professors in soft disciplines—humanities and social sciences—tend to study for their PhDs in domestic universities while professors in hard disciplines—natural sciences, and engineering—tend to study in foreign universities. Furthermore, this pattern changes depending on age cohorts. Figure 11.2 indicates the differences between academic disciplines, as affected by age. It can be seen that the proportion of foreign degree holders among current faculty is decreasing in hard disciplines while the proportion is increasing in soft disciplines by age.

The increase in domestic degree holders in faculty employment reflects the fact that scientific productivity in science and engineering among Korean universities is getting competitive with that of the US and other advanced countries. On the other hand, students in humanities and social sciences benefit when they study abroad because many Korean universities have begun to emphasize publication in international journals (Shin 2011). This policy tends to push many students in soft disciplines to study abroad.

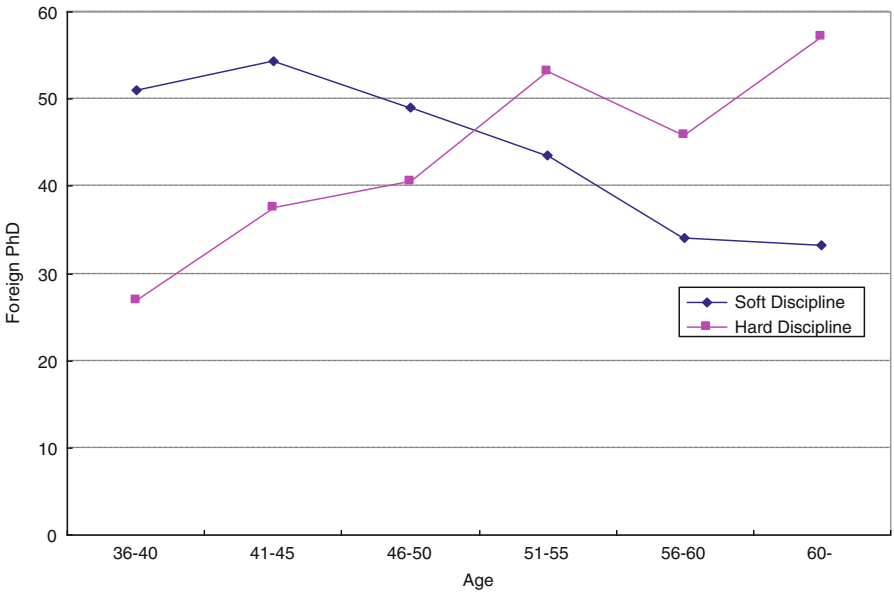

Fig. 11.2 Proportion of Korean academics foreign degree holders by age cohorts (Source: CAP Survey 2007/2008)

Table 11.3 Korean academics' inbreeding status by institutional mission

	Inbreeding status (based on bachelor's degree)		
Mission	Non-inbreed	Inbreed	Total
Research university	324 (79.6)	83 (20.4)	407 (100)
Research active university	172 (76.4)	53 (23.6)	225 (100)
Others	121 (63.7)	69 (36.4)	190 (100)
Total	627 (73.2)	205 (26.8)	832 (100)

Notes: Inbreeding: The university of first degree and university of current employment are identical; Non-inbreeding: The university of first degree and university of current employment are not identical
Source: CAP Survey 2007/2008

11.4.2 Faculty Inbreeding

Table 11.3 shows academics' inbreeding status by institutional mission. Inbred academics indicate that the university of first degree and university of current employment is identical, while for non-inbred academics the university of first degree and university of current employment are not identical. The proportion of inbred academics is over 20 % across institutional missions and it is particularly high in other comprehensive universities rather than research universities. This is because graduates from non-research oriented universities have obtained their PhDs in research universities and then tend to return to their home universities where they obtained their first degrees.

The changing pattern of faculty inbreeding is given in Fig. 11.3, which shows inbreeding rates nationwide have been decreasing by age cohorts. The inbreeding is highest among the over 60s who were hired in the 1980s when the Korean government adopted a new policy to expand higher education. The faculty over 60 years may have stronger *hakmack* spirit and thus might have a lower preference for meritocracy. Interestingly, another peak of inbreeding appears about 15 years later among cohorts aged 46–50 years who were hired when the 60 years or over cohort was in charge of faculty hiring (e.g., in the position of department chair and most of the 46–50 year cohorts were their students at that time. This should be studied further).

Furthermore, faculty inbreeding rates are higher in hard disciplines than soft disciplines where faculty is over 55 years while the rate is higher in soft disciplines for those younger than 55 years. These disciplinary differences can be interpreted from different perspectives. One explanation is that over time meritocracy becomes more embedded in the hard disciplines than the soft disciplines. However, recent trends emphasize academic performance both in hard and soft disciplines, and faculty inbreeding has been decreasing both in hard and soft disciplines as shown in Fig. 11.3.

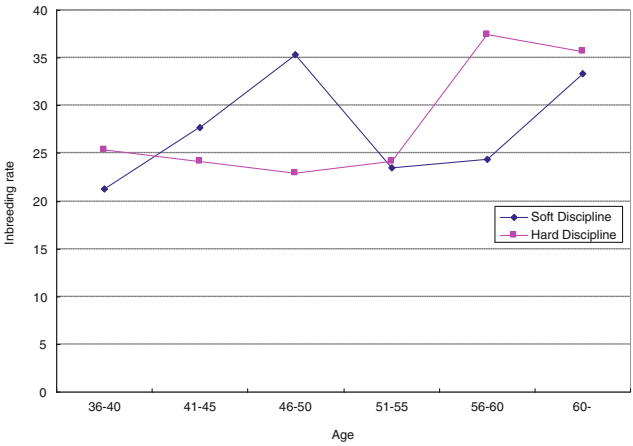

Fig. 11.3 Korean academics' inbreeding rate by discipline and age cohorts (Notes: Inbreeding: The university of first degree and university of current employment are identical; Non-inbreeding: The university of first degree and university of current employment are not identical) (Source: CAP Survey 2007/2008)

11.4.3 Sense of Affiliation and Workloads

Based on two criteria regarding where academics' PhDs were awarded and their inbreeding status, we examined how these factors affect the perceptions, workloads, performance, and satisfaction of Korean academics. We classified their PhD training as taking place abroad, at their home university in Korea, or at other universities in Korea. At the same time, we considered inbreeding status based on where they obtained their first (undergraduate) degrees.

11.4.3.1 Sense of Affiliation

Inbreeding faculty tend to have a stronger sense of institutional affiliation whatever their pattern of faculty training. This finding is not surprising because inbreeding faculty have a stronger identity as a professor in their home university. These findings have been discussed in previous studies (Horta et al. 2011; McNeely 1932). Horta et al. (2011) report that inbred faculty is familiar with the university's organizational knowledge and tends to reinforce organizational traditions and academic cultures. One strong rationale for hiring inbreeding faculty is to hire those who have a strong sense of loyalty towards their home university.

Among the three places of award of PhD, faculty members who have been trained by other domestic universities have a stronger sense of affiliation than the academics, who hold their PhDs from abroad or home university. In particular, inbred academics in other domestic universities show the highest sense of affiliation. The professors who have earned their PhDs from other domestic universities may have

Table 11.4 Korean academics' sense of affiliation and job satisfaction

	Place of award of PhD				
	Abroad	Home university	Other university	Total	
Sense of affiliation	Non-inbreed	68.0	72.0	78.7	72.9
	Inbreed	80.5	81.0	90.3	83.9
Satisfaction	Non-inbreed	78.8	67.7	76.4	74.3
	Inbreed	86.2	77.4	80.6	81.4

Source: CAP Survey 2007/2008

Table 11.5 Korean academics' workloads

	Place of award of PhD				
Types of activity	Abroad	Home university	Other university	Total	
Teaching	Non-inbreed	21.2	21.1	22.7	21.7
	Inbreed	20.3	17.1	22.1	19.8
Research	No Non-inbreed	18.4	18.2	17.0	17.9
	Inbreed	20.0	19.6	16.9	18.8
Service	Non-inbreed	11.0	10.2	10.4	10.5
	Inbreed	11.2	12.1	11.5	11.6
Others	Non-inbreed	3.3	3.1	2.7	3.0
	Inbreed	4.0	4.4	4.3	4.2

Source: CAP Survey 2007/2008

had a strong desire to be professors in their home universities and a strong affiliation for their home universities (Table 11.4).

11.4.3.2 Workloads

Inbred faculty members spend less time on teaching, but more on research and service related activities as shown in Table 11.5. These findings show the conflict between different types of academic activities. For example, if faculty spends more time on teaching, they spend less time on research or service activities. Higher education researchers (e.g., Marsh and Hattie 2002; Shin 2011) have focused on the conflicts between teaching and research in their studies on workloads and academic performance. As these findings show, however, service activity is an important factor in discussing workload and performance. In general, inbred faculty members are requested to do more service including administration for their department and/or university. This is because university administrators trust the loyalty of inbred faculty.

Table 11.6 Korean academics' research publication

Types of publication	Place of award of PhD				
	Abroad	Home university	Other university	Total	
Book	Non-inbreed	1.66	1.29	1.72	1.56
	Inbreed	1.55	2.99	1.50	2.01
Domestic journal	Non-inbreed	5.70	6.83	5.16	5.90
	Inbreed	7.24	7.70	6.10	7.01
International journal	Non-inbreed	4.17	3.35	3.55	3.69
	Inbreed	4.60	5.90	2.00	4.17

Source: CAP Survey 2007/2008

11.4.4 Academic Performance and Job Satisfaction

11.4.4.1 Descriptive Analysis

Different patterns of faculty training and hiring are related to their research publications—books, domestic journals, and international journals. In general, inbred professors produce more papers than non-inbred professors as shown in Table 11.6. They produce more papers in domestic and international journals.

Home university PhDs are higher performers in domestic journals than foreign degree holders. Interestingly, inbred home PhDs publish more in international journals than do inbred foreign PhD holders. As graduate education has been upgraded in the 2000s, more talented students tend to stay on their home campus to secure their PhDs (Shin 2012b). As a consequence, PhDs from home universities are very research productive and compete with foreign degree holders (Shin and Jang 2013). The trends are clear in sciences and engineering, but less clear in the social sciences and humanities. This should be further investigated through multivariate analysis to control for the contextual factors.

In general, Korean academics are highly satisfied with their academic position (see Table 11.4). Job satisfaction level is among the second highest in the world (the highest is Mexico) (Locke et al. 2011). This might be related to the job security of Korean academics and their working conditions. For example, Korean academics are tenured unless their research performance is poor. Although there are minimum requirements for promotion, academics tend to favor their colleagues. Strong collegiality and mutual protection among academics are embedded in many universities. In addition, their *hakmack* networks protect them.

Another benefit is the social culture of respect for university professors. University professors are respected by students and parents, and the public tends to respect professors' authority. This might affect the high satisfaction level of foreign degree holders who have experienced the relatively less secure and less favorable atmosphere in many countries including the US, Japan, etc. As expected, inbred faculty are more satisfied with their academic position than non-inbred faculty across the various types of PhDs. Inbred professors are familiar with the university

environment. They have friends on campus who have studied together and they have colleagues to collaborate with. They have connections with university administrators and they protect each other. These are the benefits of teaching in their home university.

11.4.4.2 Regression Analysis

We developed a multivariate model to test whether there are differences between inbred and non-inbred academics in terms of their academic productivity and their job satisfaction. In the analytical model, we included personal characteristics (age and gender), academic training (PhD degree in abroad), their preference for research (research preference), research hours, research support from institute, salary, their affiliated academic discipline, and institutional mission of their current university.

The age is natural age; gender is a binary variable represented by male or female; PhD abroad is also a binary variable represented by a foreign or domestic PhD; research preference is also a binary variable represented by research preference or not; research hours is the hours input for research per week; research support is the mean score of laboratories, research equipment, research support staff and research funding; annual salary is the total annual salary of an individual academic; academic discipline is represented by whether an individual academic is affiliated with the hard disciplines or not; institutional mission also represented by whether an academic is affiliated with a research focused university or not; inbreeding status is represented by whether an individual academic is affiliated with the home university where his/her first degree was granted.

Our dependent variables are research productivity, which is measured by the number of publications in domestic and international journals, and book publications. One strategy for this analysis is applying different weights between different types of publications, e.g., international journal publication is weighted more highly than domestic journal publication. Some higher education studies (e.g., Shin and Cummings 2010) have provided the rationale for this research productivity analysis. However, we opted to apply a simple counting method in this study for the sake of simplicity. Therefore, each publication is counted as '1' regardless the types of publication type (book or journal paper) or types of journals (domestic or international). The differences between different types of publication or journal types also represent academic disciplines because each discipline has its preferred type of publications and journal. For example, arts and humanities prefer book publication while engineering and natural sciences prefer article publication. Professors in social sciences prefer to publish in domestic journals while their colleagues in engineering and natural sciences prefer to publish in international journals. Another dependent variable—job satisfaction—is measured by the survey question of 'How would you rate your overall satisfaction with your current job?' by a five point Likert Scale.

Our model has two stages—one without inbreeding status and one with inbreeding status. Through the two-stage model, the regression outputs will show whether inbreeding status contributes to model fit improvements as well as statistical significance of the inbreeding status. The functional forms of the two-stage model are represented as:

Academic productivity/job satisfaction = f[(age, male, PhD abroad, research preference, research hours per week, research support, annual salary, hard discipline, research-focused university) + (inbreeding faculty)]

11.4.4.3 Regression Results

Table 11.7 shows the regression-analysis results for research performance and job satisfaction. Although we included a small number of variables for both research performance and job satisfaction, the *F*-statistics and adjusted R square show that the models explains the research productivity and job satisfaction to some extent (about 15 % of the variance in the dependent variables). When all the relevant variables were entered into each multiple regression model, we found that research preference, research hours, academic discipline (hard), university mission (research university) are positively associated with research performance. Unlike research performance, all other variables were not significantly associated with job satisfaction except research support, which is measured by the combination of laboratories, research equipment, research support staff and research funding.

Table 11.7 Regression results for research performance and job satisfaction in Korean academics

	Research performance		Job satisfaction	
Variables	Model 1	Model 2	Model 1	Model 2
Age	−.027	−.029	.012	.012
Gender	.019	.020	.109	.109
PhD abroad	−.026	−.020	−.020	−.020
Research preference	.183***	.188***	.005	.005
Research hrs	.103**	.100**	−.071	−.070
Research support	.073	.069	.314***	.315***
Salary	−.012	−.009	.061	.062
Discipline	.256***	.262***	−.045	−.046
Mission	.099**	.083*	−.022	−.018
Inbreeding		.049		.009
F-statistics	18.483***	16.666***	5.123***	4.589***
Adjusted R square	.148	.150	.155	.151

Source: CAP Survey 2007/2008
*p < .05, **p < .01, ***p < .001

Our main research variable—inbreeding status—was not significant for either research performance or job satisfaction. This suggests that academics' performance or job satisfaction does not differ between inbreeding and non-inbreeding academics. This finding differs from the policy assumption, that academic inbreeding is the main cause of low academic performance of Korean universities. In fact, there is a theoretical and political controversy on whether high inbreeding is a result of either academic network or of meritocracy. Because the inbreeding rate is high among top-ranked disciplines in top ranked universities, the causal relationships between high inbreeding and its cause is complicated. This controversy is similar to that in other countries including the US universities, especially in the law, business, and medical areas. As discussed, the inbreeding rate is over 50 % among the top three Korean universities—Seoul National, Korea, and Yonsei—while it is about 25 % nationwide.

One interpretation is that high inbreeding is happening because inbred academics have networks with their alumni and they are also high performers. On the other hand, academics who apply for a faculty position in a Korean university, especially in the three well known universities, non-inbreeding academics are disadvantaged in their hiring process although the non-inbreeding academics hold similar academic performance with the inbreeding academics. We believe that both interpretations explain the reality of faculty hiring and evaluation practices in Korean universities, especially in the three top-ranked universities.

As well as the implications for the university managers and policymakers, this study also has implications for individual academics who are considering teaching at their home university. This study shows that inbred academics are not satisfied at their home university although Korean academics, especially those who graduated from top-ranked universities, have strong desire to teach at their home university. The finding is related to the fact that inbred academics are highly pressured to conduct administrative work and to publish more. These might be related to the fact that inbred academics have strong commitments to their home university. Teaching at a home university is an opportunity to serve their alma mater but at the same time it brings stress and pressure. Considering both the positive and negative dimensions, academics are recommended to take these into account in their decision to teaching at their home university.

In this context, a critical issue is whether the national policy enshrined in the 'Public Educational Officials Act' of 2005, which was adopted to limit extensive inbreeding, should be maintained in the future. The policy has reduced the rate of inbreeding among top ranked Korean universities, and university managers and faculty now pay attention to the issue of inbreeding when hiring. In addition, academic culture is changing in the top ranked universities where *hakmack* used to be a critical factor in faculty hiring. These changes also were supported by government initiatives that emphasized academic performance in their funding allocations. As a result, meritocracy is becoming institutionalized and the academic norm in Korean universities despite the tension between academic generations and disciplines (Shin and Jang 2013).

11.5 Concluding Remarks

In this study, we paid attention to faculty doctoral training and their inbreeding in relation to their perceptions, workloads, performance, and job satisfaction. Faculty training patterns are classified into three categories—foreign PhD, home university PhD, and PhD from another domestic university. The inbreeding status was based on whether faculty graduated from the same university where they were undergraduate students. According to the descriptive statistics, most Korean academics completed their PhDs either at a foreign university or their home university. This means Korean academics are quite homogeneous and reinforces *hakmack*—academic networks in Korea. This is particularly the case in the top research universities. Although overall the faculty inbreeding rate is only about 25 %, it is more than 50 % in the top research universities. As an extreme case, Seoul National University, the leading research university in Korea, has an inbreeding rate of about 90 %.

On the other hand, Korean academic culture has been moving from a network-based one toward a meritocratic one since the mid-2000s. The 2005 government policy, adopted to reduce academic inbreeding rates, has been successful and the government policy is supported by other policy initiatives. As our regression analysis shows, the academic performance of inbred faculty is no different from that of non-inbred faculty members. This suggests that academic performance has become the main criteria as well as their academic networks in faculty hiring. This is a positive change for the Korean universities who seek to be globally competitive ones. Along the same lines, inbred professors are no more satisfied with their academic job than their non-inbred colleagues. The findings and discussion lead to our conclusion that academic culture is evolving into a meritocratic culture. However, this does not mean that academic networks are not important in Korea. The meritocratic culture co-exists with academic networks.

The dichotomy, which emphasizes either the academic network or meritocracy, might not be a healthy one for academic development. The Korean academic network has some strengths and weaknesses. It is a critical channel for collaborative research, information sharing, and academic career development. The issue is how to minimize the negative impacts on academic development and to open up the academic networks to other scholars. A well developed academic network with institutionalized meritocracy is a key to the competitiveness of Korean universities in the long run.

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Part III
Comparative Studies

Chapter 12
Identity of Argentine Academics: International and Compared Perspective

Martín Aiello and Cristian Pérez-Centeno

12.1 Introduction: The Identity of Academics

In the generalization of studies about the university arising from the spread of the system and the new public policies regulating the relationship between the university area and –mainly- the state, jobs arose about the academic identity understood in what being an academic is (Henkel 2000). These studies were analyzed in a double historical and conceptual context. Firstly, they have been in line with the analysis of the consequences the new public policies as from 1990s had about the university area (Neave and Van Vught 1991). On the other hand, at the same time, it was developed conceptually from the field of sociology –and other social disciplines- about the crisis of identities coming from the situation and consequences causing the doubt of the traditional discourse of modernity as from 1980s (Giddens 1993).

These two contexts, with their historical, social and theoretical characteristics, implied for the concept of academic identity a challenge based on a necessary reconceptualization of dimensions and variables comprising it as well as those modifying it. The change as to the type of regulation of the university area over the last 25 years produced a series of new policies implying the introduction of assessment and quality-guarantee systems, oriented to the activities towards the market, incorporation of financing differentiated by incentives or new management technics of the academic activities, according to the cases. Therefore, these new activities changed the stable framework where the academic identities were shaped (Henkel 2005).

From a theoretical perspective, it is added to the change of policy the trend to perceive that the identities in general and the academic ones in particular suffer from a crisis dragged by the decline of great discourses supporting the perception of individuals as historical subjects. This does not imply that there is not an identifica-

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tion of people with their social or professional contexts, but the identifications are more heterogeneous and less durable during the time, due to that they are not recognized in the great tales of the former modern period. For the academic case, it is added to the crisis of the big tales the crisis of the discipline as a cognitive, epistemological and communicative environment what is believed that the activity is, as from the appearance of new approaches promoting the inter/multidisciplinary nature (Gibbons et al. 1994). The introduction of diversity as a recognized concept and practice implies the possibility of accepting that are conceived diverse ways of academic activity, like in other social environments.

But these justifications assuming a change of academic identities are not enough *per se* to study the phenomenon. The idea an academic plays his or her own role, his or her profession and the mission inside the university is important as an "ideal," "subjective" aspect, but also as an important element of the academic practice. In this regard, and following authors who have connected the concept of academic identity with that of academic cultures (Becher and Trowler 2001), we consider that these studies are crucial to understand the university policies and their management. The perceptions about what academic life is are legitimized in each "tribe" or academic territory and add new ways of acting in what their professional conceptions are, that is, how they are accepted, modified, refused, etc. for the same academics, in order to impose a vision in the system (a strategy to impose their identities) about what the academy is (Bourdieu 1984). For instance, Neave (2009) states how specific characteristics of identities of certain areas (the hard ones) have been imposed to determine, lead or assess how the research in universities should be carried out.

In terms of Giddens (1995), the academic identities or cultures are structured by certain external factors, for instance disciplines, regulations and assessments promoted by state, institutional contexts, development of the profession, etc. But also, in turn, they are able to structure those practices, give them a new meaning, modify them or just refuse them.

Possibly, certain more stable cultures or identities are less "influenced" to certain external changes of the system, what it caused that certain sectors which desired to impose new visions about university saw the crisis of academic identities as a positive aspect. However, if it is desired that the changes and innovations of the sector are consciously performed by their main actors – the academics – it is better to have their approval, by actions allowing to be implemented in a stable framework of identity reference. In order to achieve this point, as academics, it is necessary then to become routine into exotic, in terms of Bourdieu (1984), as a way of criticizing the common sense of our academic identities.

12.1.1 The Identity of Academics in Argentina

This work analyzes one of the characteristics of the academic profession: the identification of university professors and researchers to their academic discipline and the university where they exercise their profession. This "identity" is studied

according to diverse characteristics of the academic profession: the type of teaching commitment, the interests regarding teaching and research, and considering the person who assesses the teachers' task as well as regarding some personal features. Lastly, it is considered the incidence of the identification degree of academics with their job satisfaction. In other words, it is desired to establish whether the condition of gender and age, academic commitment and academic interests and the subject of the academic assessment have influence – and on what degree – on the identification of professors with their discipline and institution; and whether this affects the degree of job satisfaction of university students and their academic interests.

Although the main focus of interest lays on the national case which characterization is being studied, the perspective of analysis becomes wider from the comparison with the results of the other countries and, particularly, with the Latin American countries, in order to analyze whether Argentina follows a more general trend or has an own profile.

Among the characteristics that are peculiar of the academic profession in Argentina, one is particular: as detailed in the statistics of the Secretary of University Policies (SPU), less than a 15 % of the teaching positions of national universities are full commitment, and more than 50 % are simple commitment (by law, less than 10 weekly hours). These percentages do not vary very much among the diverse categories of positions, even the highest; the tenured professors keep that percentage. One of the hypotheses to be confirmed is the influence of commitment on the academic identity, which would be a reason for a type of specific identity for the case of Argentine professors due to the special contractual relationship.

In turn, due to the new public policies oriented to direct or re-define the academic activities, it can be assumed that the identification of academics begins being lesser with its discipline, and it is focused with institutional aspects or close job spaces (centers, institutes, departments, faculties, etc.).

12.2 Identity of Argentine Academics in the Latin American and International Context

12.2.1 Academic Identities from an International Perspective

One of the main justifications for the study of academic identity is the possible change which could suffer these justifications – mainly based on the basic disciplines – from the contexts of the new modernity and public policies highlighting the role of institutional structures in said identities. In the Table 12.1 the valuation of identification of academics is analyzed with their discipline, department or institution of the interviewees from Argentina, Mexico, Brazil, considered individually, collectively and in relation to the whole CAP sample.

In the chart it is shown the maximum importance provided by the group of academics of the sample to the "discipline reference," which is from the order of 60.5,

Table 12.1 Importance of the identification of academics according to country (Argentina, Brazil and Mexico) and set of countries (Latin American and others) (percentages)

		Academic discipline	Department	Institution
Argentina	Very important	71.3	52.4	60.5
	2	22.6	31.5	26.8
	3	4.5	11.9	10.0
	4	1.1	3.3	2.3
	Not important at all	0.5	1.0	0.4
	Sub-total	100.0	100.0	100.0
Brazil	Very important	70.5	40.3	49.2
	2	23.5	32.1	30.0
	3	4.6	17.3	13.5
	4	0.8	7.0	5.0
	Not important at all	0.6	3.3	2.3
	Sub-total	100.0	100.0	100.0
Mexico	Very important	83.2	65.4	76.8
	2	13.9	24.8	16.7
	3	2.2	7.5	5.1
	4	0.4	1.8	1.2
	Not important at all	0.3	6	2
	Sub-total	100.0	100.0	100.0
Latin America	Very important	76.7	54.8	64.7
	2	18.8	28.5	23.0
	3	3.4	11.5	8.8
	4	0.7	3.7	2.6
	Not important at all	0.4	1.5	9
	Sub-total	100.0	100.0	100.0
Non-LA	Very important	57.2	30.1	26.9
	2	30.0	38.8	34.1
	3	9.4	21.3	25.9
	4	2.2	7.1	9.4
	Not important at all	1.1	2.7	3.7
	Sub-total	100.0	100.0	100.0
Overall total	Very important	60.5	34.2	33.2
	2	28.2	37.1	32.3
	3	8.4	19.7	23.1
	4	1.9	6.5	8.3
	Not important at all	1.0	2.5	3.2
	Total	100.0	100.0	100.0

Source: CAP Survey 2007/2008

and 88.7 % if the two most important categories are considered. The situation is more marked among the Latin American countries than the remaining ones: 76.7 % vs. 57.2 % – one-third higher– if the maximum assigned importance is considered; and 95.5 %% vs. 87.2 % -almost a 10 % higher – if the two more important catego-

ries are considered. In Latin America, the situation is differentiated among the three considered national cases: the academics of Mexico show higher information, with a very strong identification of academics regarding the discipline (83.2 %) whereas Argentina and Brazil keep the order of 71 %. If the two more important assigned categories are considered, the professors of the three countries are between 94 and 97 %.

The 93.9 % of Argentine academics keep a high identification regarding their academic discipline, a very similar characteristic to that of the other Latin American considered countries, higher than that found among the non-Latin American countries of the sample. This distinction is even greater if the case of those people who assigned the maximum importance to this identification is only analyzed.

The identification with the center or department of belonging is lower to the identification shown regarding the academic discipline. Almost a bit more than a one-third of the total amount (34.1 %) provides the maximum importance to this identification (a 71.3 %, if the two higher categories are considered). In Latin America, Mexico continues showing a higher proportion of identified academics in relation to Brazil and Argentina, which adopts an intermediate position between the other two countries (even though always over the overall average of the sample). The 83.9 % of Argentine academics keep a high identification regarding their academic unit of belonging, a similar characteristic to that of the remaining Latin American considered countries and higher than that found among the non-Latin American countries of the sample. This distinction is even greater if the case of those people who assigned the maximum importance to this identification is only analyzed.

The "identification with the institution" of belonging is even lower, although slightly, to that shown regarding the center and keeps a very similar structure. Only one-third of the total amount (33.2 %) provides the maximum importance to this identification (a 65.5 %, if the two higher categories are considered). In Latin America, Mexico continues showing a higher proportion of identified academics in relation to Brazil and Argentina, which adopts an intermediate position between the other two countries, and all of them regarding the overall average of the sample.

The 87.3 % of Argentine academics keep a high identification regarding the institution where they perform their profession, a similar characteristic to that of the other Latin American considered people and higher than that found among the non-Latin American countries of the sample. This distinction is even greater if the case of those people who assigned the maximum importance to this identification is only analyzed.

It is important to highlight that the Latin American academics, and especially within the three countries of the region those coming from Mexico, both for the discipline (level of crucial identification) and for the department or institution. This is relevant to highlight as the Mexican case we could point out that it is one of the systems, compared to those of Argentina and Brazil, which has deeply introduced diverse strategies of planning of higher education (Gil Antón et al. 2012). Following this reasoning, the deepening of new differentiated policies of university management would cause a greater necessity of identification by academics.

12.2.2 Academic Commitment and Identity

The type of academic commitment would seem crucial in advance as an element of the academic profession, their job situation. It is expected this situation to have its correlation to the identification of academics. The identification together with the discipline is greater among hired professors (67 %) and with partial commitment (65.2 %) who those with full time commitment (60.2 %). Something that is not supported when the sample is divided between Latin America and the remaining countries: in both cases, the academics with better and more stable commitments are identified with their discipline in a greater proportion.

In Latin America, the situation is different among the three considered national cases – even though always with numbers very over the overall average of the sample -. The professors with a partial commitment are identified with the discipline in a greater proportion to those with a full time commitment. In Argentina there is a very similar situation to the case of Brazil except for the identifications of hired simple-commitment professors who are the distinctive feature of this system. The 90 % of them express the highest identification with the discipline (the 100 % of them are in the two categories of greater identification), overcoming the professors with steadiness either partial or exclusive. Furthermore, following the general trend of the sample, it is appreciated greater identification among partial-commitment professors than full- time-commitment ones.

The identification with the department is higher among professors with a partial commitment (38.5 %) than among those with a full time commitment (34.1 %). Neither can this assertion be supported when the sample is divided between Latin America and the remaining countries: in both cases, the academics with better and more stable commitments are identified with their center in a greater proportion. Once again, the Latin American countries, collectively, express a greater identification than the remaining considered countries – in the order of 50 % higher -, now as to the identification with its academic unit of reference. In Latin America, the commitment of academics does not express big differences of identification with the academic unit among countries and the values of identification are kept over the overall average of the sample. Argentina, although it is included in the preceding assertions, shows a greater proportion of identifications towards the center by the hired academics (similar to that noted for the case of identifications regarding discipline), overcoming the professors with steadiness either partial or exclusive.

The identification with the institution is greater among partial-commitment professors (39.3 %) than among full-time-commitment ones (32.7 %). As in the two prior cases – regarding discipline and center – neither this assertion can be supported when the sample is divided between Latin America and the remaining countries: in both cases, the academics with better and more stable commitments are identified with their center in a greater proportion. Also here, the Latin American countries collectively express a greater identification –2.4 times – than the remaining considered countries, as to the identification with the university of performance. The type of commitment does not produce higher levels of identification regarding

the institution for the national cases of Latin America if the two superior categories of identification are considered. If it is considered exclusively those pointing out their identification towards the university as an utmost importance, some nuances appear: Argentina and Brazil show greater identification of their full-time academics and Mexico than those who have a partial commitment.

In all the cases, figures express a greater identification to the institution than the overall average of the sample. The 87.3 % of the Argentine academics keep a high identification regarding the institution where they perform their profession, a similar characteristic to that of the remaining considered Latin American countries and higher than that found among the non-Latin countries of the sample. This distinction is even greater if the case of those people who assigned the maximum importance to this identification is only analyzed.

The proportion of academics that are not interested in (categories 4 and 5) identification is really low. This asserts, partly, the validity of the concept related to the academic profession, where as another type of profession must have a sound group perception about what their job means. Latin America, collectively, presents a significantly more "identified" academic body than those of the remaining countries included in the study and that difference with the other countries increases the higher the level of institutional reference is. As regards the identification towards the discipline, center or institution, there are not any significant differences in the set of the sample derived from the type of the academic commitment.

Argentina, indeed, presents a differential of decreasing identifications with the level of reference for the group of hired people (its identification is very high regarding discipline and low regarding institutional – as expected -) and, a level of similar identification to the "stable" professors. However, all those differences are not relevant.

12.2.3 Academic Interests and Identity

In this paragraph we will talk about the relationship between the identity of academics and their interests for teaching and research from a double perspective. Being both dimensions showing "ideal" aspects and not job conditions, or type of formation, for instance, at first it is not clear what type of causal relationship to establish between both variables. That is why firstly we consider how these academic interests have impact on the identification of academics regarding discipline, academic unit or institution, thinking the privilege of a type of activity may influence on how the academics are identified with their vital professional spaces. Then, we will consider the contrary sense of the relationship; that is, how the identifications – discipline or institutional – have impact on academics creating their interests, assuming, for instance, that a strong discipline identification could lead towards teaching and/or research.

12.2.3.1 The Incidence of Academic Interests on the Discipline and Institutional Identity

In a first approach it will be taken into account how the academic interests for main activity, research or teaching, give priority on the determination of the identification degree of the interviewees with their discipline.

For the overall sample of the study, the categories pointing out a decided importance (joint categories 1 and 2) regarding the discipline identification, show a slight superior relative weight in the subgroup oriented to research in contrast to the oriented subgroup to teaching and, moreover, a greater identification among who have "double" interests – in teaching and research – over who have a decided preference towards one to another one. Notwithstanding the foregoing, the differences among subgroups are few and show, first of all, a slight nuance, more than a differential feature since the universe presents strong assignments related to the discipline of belonging.

Both preceding indications are applicable when the sample is subdivided among the Latin American and non-Latin American academics. And, in relation to the level of identification, the general framework of the study is reproduced –a greater intensity for the Latin American universe than for the rest of the countries-. The analysis per country shows some differences to be appreciated when other variables are analyzed, like a greater identification of Mexican academics than those from Argentina and Brazil, always overcoming the values of the overall sample, as shown in previous paragraphs. Argentina and Mexico have a similar behavior: a greater identification towards the discipline among those who have interests for research – either prominently or in a shared way with teaching. Brazil shows greater levels of identification among those who have a double interest – for teaching and research-.

Contrary to what it has recently been pointed out, the most relevant identifications towards the academic unit of belonging take place among those who have firm interests for teaching. Perhaps, indeed it should be said, that there is a clear difference of the subgroup that has main interest in research which levels of identification to the center are lower than those of the remaining colleagues. This assertion perfectly applies when it is considered for the Latin American and non-Latin American academics, or an analysis of each one of the countries belonging to Latin America separately. Taking into account always that Latin cases are considered, a greater degree of identification compared to those who are not.

The affiliation towards the institution decreases insofar as the interest for research increases. This consideration applies to the Latin American subgroup regarding the other countries and the considered national cases. It can be said, despite the fact that perhaps a statistics correlation cannot be established, that there are nuances expressing differentiated identifications between the academics according to how their interests are towards teaching, research or both of them. Generally speaking, we will state that the interests towards research lead to lower referential filiations towards the institutions of performance, by losing identification the wider the considered institutional universe is (the greater the loss of identification is regarding the

university that regarding the academic unit where they perform their profession). That is:

– "the discipline identifications are greater between those who have interest for research,"
– "the identifications towards the center and university are greater between those who have interest for teaching."

12.2.3.2 The Impact of Discipline and Institutional Identity on Academic Interests

In the following table it is addressed the professional spaces determining the academic identity – discipline, department o institution – as a possible cause of the interest in one of the university activities (Table 12.2).

Table 12.2 Argentine academics' interest for teaching and research according to the identification degree of academics (percentages)

Academic interest	Very important	2	3	4	Not important at all	Total
Importance of identification with discipline						
Mainly in teaching	9.3	10.1	13.4	13.3	11.8	10.0
Both, with a trend to teaching	30.6	31.8	31.6	29.3	27.4	31.0
Both, with a trend to research	47.4	45.2	39.9	38.7	42.5	45.9
Mainly in research	12.7	12.9	15.2	18.6	18.4	13.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Importance of identification with academic unit						
Mainly in teaching	12.1	8.9	9.1	8.5	7.3	10.0
Both, with a trend to teaching	36.0	30.1	27.4	24.4	22.9	31.0
Both, with a trend to research	42.5	48.5	47.5	45.4	42.7	45.9
Mainly in research	9.4	12.5	16.0	21.7	27.1	13.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Importance of identification with institution						
Mainly in teaching	11.8	9.1	8.8	9.7	9.3	10.0
Both, with a trend to teaching	36.3	30.7	27.3	24.3	22.9	31.0
Both, with a trend to research	42.8	48.0	47.8	46.4	41.9	45.9
Mainly in research	9.1	12.2	16.1	19.6	26.0	13.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: CAP Survey 2007/2008

As shown before, the interest of academics for teaching is slightly less than for research, even though the survey does not state exclusive academic interests only for teaching or research. On the overall of the sample there is a 10 % of academics with a main interest in teaching against a 13.1 % whose main interest is related to research. And even when we see that three-quarters parts of the universe (76.9 %) have shared interests in teaching and research, the proportion is greater than – even in that case – have a greater preference to research (45.9 % vs. 31 %). The comparison between the Latin American group and the remaining group shows a differentiated situation: in Latin America there is a lesser proportion of academics interested in research rather than teaching, as well as in the remaining countries that proportion is greater. The greater teaching interest of Latin America and the greater research interest of the non-Latin group cause differences between both of them, which are significant in some cases, as seen in the analysis below.

The group of the sample, the greater levels of importance assigned to the identification of academics with their discipline are near the overall sample trend for the reason that there would be regardless of the variable. In other terms, a greater discipline identification would not have impact on the interest for teaching and/or research of academics. The different degrees of discipline identification do not cause the same effect according to the interest either for teaching and research is that if it were mainly for one of them nor with regular trends evolving as to the identification degree. It is also appreciated that greater levels of discipline identification causes lesser proportion of academics interested for one of the two activities and greater number of academics interested for both of them. Therefore, the corollary more precise than the previous one would be that asserting a greater discipline identification would promote a greater interest for teaching and research of academics rather than one of those activities exclusively.

If the different Latin American countries are compared, a situation of a big heterogeneity is appreciated, which is not equivalent either to the overall trend of the sample or to the Latin American average. Argentina presents a similar situation to Brazil: increase in the proportion of academics with shared interests between teaching and research, bias towards research (57 % vs 43 %) and no established trend which allows to link academic identity with interest for teaching and research. Mexico has a greater bias to teaching (61 % vs. 39 %) and a very high proportion of academics with exclusive interests for teaching.

For the group of the sample, identification with the academic unit causes different results from discipline identification. In this case, the greater the level of identification with the academic unit is, the interest for teaching substantially increases (a 65 % higher) and the interest for research substantially decreases (from 27.1 to 9.4 %). Only this does not happen when it is about academics with main interests for research but also for teaching where the proportion of academics is stable, perhaps counteracting the increase to teaching with the loss in relation to research.

The comparison between the Latin American group of academics and those of the remaining countries shows these latter in an overall trend but with slightly high interests in relation to research and those of Latin America with higher interests in

relation to teaching and with important differentials regarding the other group and the sample as a whole.

It is shown that in the Latin American group the loss of reference with the academic unit leads to the loss of exclusive interests related to research. The analysis made in the previous paragraph for the academic identity of Latin American countries is replicable for the identification with the academic unit: a situation of a great heterogeneity which is not equivalent either to the overall trend of the sample or to the Latin American average and, moreover, with Argentina showing a similar situation to that to Brazil. In the Argentine case, and Brazilian one– it cannot be asserted that the greater the level of identification with the academic unit is, the greater the interest for teaching will be since it keeps stable. Although the interest for research, indeed, substantially decreases (from 37.5 to 6.2 %). Mexico, however, adds both characteristics, a behavior without clear trends among academics with double interests – teaching and research.

The analysis made for the identification with the academic unit is replicable to the analysis of filiations with the university both at an overall level of the sample and in the national cases of Argentina, Brazil and Mexico, and in the subgroups of the countries.

To summarize, the analysis of the impact of the identification of academics on their interest for teaching and/or research shows us that a greater discipline identification would promote a greater interest for teaching and research of academics than for one of those activities with exclusivity. In Argentina, the discipline identification causes diverse situations: lesser main interest for teaching (it is halved between the higher and lesser identification) and a higher main interest for research (it is triplicated between the higher and lesser identification).

The institutional identification shows, however, that the greater the level of identification is the interest for teaching substantially increases and the interest for research substantially decreases. In the Latin American group, the loss of reference with the academic unit leads to the loss of exclusive interests related to research. Argentina presents a similar situation to that to Brazil. In its case it cannot be asserted that the greater the level of institutional identification is, the greater the interest for teaching will be since it keeps stable, although the interest for research, indeed, substantially decreases. In this regard, generally speaking, the identification degree with the discipline, but especially with the department or faculty and institution, would influence on a greater interest for teaching and in a lesser interest for research.

12.2.4 Teaching Assessment and Identity

Now the focus is on analyzing the extent to which the subject of the teaching assessment of academics produces identifications towards discipline, towards the academic unit where they are inserted or regarding the institution by academics. Generally speaking, it is not appreciated differences of meaning among the

identifications towards the discipline causing the diverse forms of assessment, although the superiority is systematic when it is carried out by the chief of the own department/unit or himself through the formal mechanisms of self-assessment. The only differential nuance is added by the fact of not being assessed by anybody in which, clearly, appears a lesser population of academics identified positively with discipline. The comparison between the group of Latin American countries with the group of the remaining countries shows a greater proportion of Latin academics identified positively with their discipline when each one of the assessment forms are compared. In each one of the LA countries there are no differences of discipline identification when the diverse sources of teaching assessment are considered.

The identifications towards the center or department of belonging bring together, on average, the 73.3 % of academics – a lesser amount than the identifications directed to the academic discipline-. Generally speaking it is not appreciated differences of meaning among the identifications caused by the diverse forms of assessment. The greatest proportion of academics identified positively with their academic unit arises when the assessment is carried out by "members of other departments/ units of the institution."

The comparison between the group of Latin American countries with the remaining groups shows a greater proportion of Latin academics identified positively with their discipline when each one of the forms of assessment is compared. Nor are there any differences between the forms of assessment when the different Latin American countries are compared.

Except for the fact that the identifications towards the own university put together a lesser amount than the identifications directed to the academic discipline and the academic unit (an average of 67.6 %), the analysis repeats what was pointed out for the identifications directed to the center or department. Generally speaking about the sample, it is not appreciated differences of meaning among the identifications caused by the diverse forms of assessment. The greater proportion of academics identified positively with their academic unit occurs when the assessment is carried out by "members of other departments/units of the institution."

The comparison between the group of Latin American countries vs. the remaining countries shows a greater proportion of Latin academics identified positively with their discipline when each one of the forms of assessment is compared. There are not any differences among the forms of assessment when the different Latin American countries are compared, except for the proportion of academics with positive identifications: Mexico has a greater proportion of professors than Brazil and Argentina – which is located on average between both countries-.

To conclude, even though it is not appreciated differences of meaning among the identifications coming from the type of teaching assessment, we can see that the greatest levels of discipline identification is appreciated among academics which assessment is developed by the chief of the own department/unit or himself through the formal mechanisms of self-assessment, and that the greatest institutional identification – towards the academic unit or university as a whole – when it is carried out by "members of other departments/units of the institution." It is highlighted the fact

that the lack of assessment, indeed, causes lesser levels of identification at any level, either academic or institutional.

12.2.5 Gender and Academic Identity

From a demographic viewpoint the gender and age usually explain different behavior and conceptions from human activities. From a viewpoint of profession and academic identity, the gender, by replicating a socially built situation, can be decisive for explaining diverse assumed positions. Generally speaking about the sample, women present a greater proportion of identification with the discipline than men when the category of greater importance assigned to identification is exclusively considered; and when the second category of importance is exclusively considered, men are who accuse a greater identification. When both main categories are considered collectively, the relationship between women and men is not practically different (although there is a very slightly greater proportion of positive identifications among women); the remaining categories are practically alike among the academics of different gender.

From the gender issue we cannot state differential identifications regarding the academic unit to which they classify. The statistics results show similarity to the overall trend of the sample:

- lesser identification to that expressed regarding the academic discipline,
- differences between men and women only appreciable by considering the category of maximum assigned importance, which keeps neutralized when the two categories of maximum importance are collectively considered.
- there are no specific characteristics of the Argentine case from an analysis of gender, by being part of previous general statements.

This point has just been asserted regarding the identification of men and women regarding their reference towards the academic unit of belonging can be pointed out for their reference with the university where they perform their profession. That is why there is no either a specific characteristic of the Argentine case in relation to the identifications of academics towards their institutions of performance from their gender.

12.2.6 Age and Identity

The difference of age is crucial to the analysis of academic profession. Academics of different generations have lived diverse forms of beginning in their profession, different levels of state and fellow regulation, different styles of institution and system management. Likewise, they play internal aspects of every academic and the

Table 12.3 Importance of identification of Argentine academics regarding their discipline for the sample total (percentages)

Overall total	Up to 30 years	31–40 years	41–50 years	51–60 years	More than 60 years	Total
Very important	58.1	59.1	60.3	62.8	61.5	60.5
2	30.4	28.7	28.0	27.3	27.5	28.2
Sub-tot (Cat 1 + Cat 2)	(88.5)	(87.8)	(88.3)	(90.1)	(90.0)	(88.7)
3	9.3	9.2	8.5	7.1	7.7	8.4
4	1.3	1.7	2.0	2.0	2.5	1.9
Not important at all	0.8	1.2	1.2	0.8	0.9	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: CAP Survey 2007/2008

necessity of young people for legitimizing themselves in the beginning of their career.

In order to analyze the influence of this variable the sample has been divided into 5 age groups. In turn, the 1 and 2 categories are shown separately and added, as set in the Table 12.3 which relates age to identity of academics with their discipline.

It does not appear a clear differentiation among the identifications of academics as to their age. As shown the previous chart the high discipline identification practically keeps alike among the diverse groups of age considered and the dynamics of identification hardly increase among the adult academics, by placing between the overall overage of 88.7 %.

In the comparison among the Latin American countries with the remaining countries, the Latin American people are different from the general trend by expressing an increase of identification among the adult academics. Although they do not follow a lineal trend, the cases of Argentina and Brazil express the aforementioned moderate increase of identification according to academics are older. Mexico, however, has greater expressions of identification but this – unlike the other two Latin American cases – is decreasing as academics become older.

The identifications of academics regarding their academic unit are lesser than the discipline and considering their age a decrease is appreciated as the adult group is considered (from 76.9 % in the youngest group to 69.8 % among the older ones). The comparison between the Latin American group and the remaining one, as to the identification with the center according to age shows two differential situations: a decreasing situation and below the average as to it moves forward in the age intervals for the non-Latin American case, and a contrary trend for Latin American countries and with higher values of identification, over the average, of the Latin academics.

The national cases show high values of identification (in the order of 72 to 90 %), over the overall average (71.4 %) and that of the non-Latin countries (69 %). For this relationship among variables, the national cases erratically act without a defined trend towards increase or decrease in accordance with the age group. On the contrary, they show an erratic behavior among groups with unsystematic variations. A

decrease is appreciated as the adult group is considered (from 69.7 % in the youngest group to 65.5 % among the older ones) in relation to the identification with the institution in the two most valued categories.

The comparison between the Latin American and non-Latin American group, as to the identification with the institution according to age shows –as observed in the reference regarding the center- two differential situations: a declining situation and below the average as regards it moves forward in the age intervals for the non- Latin American case, and a contrary trend for Latin American countries and with higher values of identification, over the average, of Latin academics. The national cases of Latin America, unlike the sample trend, show greater identifications towards university regarding the academic unit. Moreover, they show high values of identification (in the order of 79 to 93 %), over the overall average (65.5 %) and non-Latin countries (61 %). For this relationship among variables, the national cases act differently: Argentina, decreasing the identification as the group becomes older; Brazil to the contrary; and Mexico, without a clear sense, decreasing between the intermediate groups of age and coming back to increase in the older academic group.

To summarize, it can be pointed out that there are no differences of identification regarding the academic discipline, by keeping stable among the academics of diverse ages. However, if we consider the identifications regarding the academic center of belonging and/or university, a slight declining trend is appreciated as to it moves forward in the age of academics.

Further, the youngest and oldest academics follow the overall trend of the sample as to that:

– greater identification towards the discipline than towards the center and institution; and
– greater identification of Latin American academics than those of the other countries.

Highlighting from the general sample, the Latin American academics:

– show increasing levels of identification as their age increases;
– are identified more with the institution than with the center, regardless of their age, even though their most significant reference continues being discipline; and
– do not show a shared dynamic among the different national cases of the relationship between age and identification.

The Argentine case shows that the more age of academics the more identification with the discipline there is and, on the contrary, a lesser identification with the institution. The identification with the academic unit of belonging does not follow a trend linked to the age of academics.

12.2.7 Job Satisfaction and Identity

In this point it will be analyzed how the identification with an academic space can be related to the degree of job satisfaction (Table 12.4).

Table 12.4 Argentine academics' level of satisfaction with the job according to the degree of identification in relation to academics (sample total, percentages)

	Very important	2	3	4	Not important at all	Total
Identification with the academic discipline						
Very high	20.8	9.2	7.5	9.8	11.3	16.1
2	48.4	52.4	40.7	34.8	32.4	48.5
Sub-total (Cat 1 + Cat 2)	69.2	61.6	48.3	44.6	43.7	64.5
3	21.9	28.8	37.0	31.3	32.0	25.4
4	6.3	7.5	11.3	19.1	13.0	7.4
Very low	2.6	2.0	3.4	5.1	11.3	2.6
	100.0	100.0	100.0	100.0	100.0	100.0
Identification with the academic unit						
Very high	27.4	12.0	7.5	7.9	11.8	16.1
2	49.5	54.7	42.8	33.3	24.7	48.4
Sub-total (Cat 1 + Cat 2)	76.9	66.7	50.3	41.1	36.5	64.5
3	18.0	25.8	35.9	31.6	25.2	25.5
4	3.7	6.2	10.7	19.8	16.2	7.4
Very low	1.4	1.3	3.1	7.5	22.1	2.6
	100.0	100.0	100.0	100.0	100.0	100.0
Identification with the institution						
Very high	27.5	12.9	9.0	6.0	8.7	16.1
2	49.3	56.1	44.4	35.0	24.6	48.4
Sub-total (Cat 1 + Cat 2)	76.8	69.0	53.4	41.0	33.2	64.5
3	18.1	24.2	34.4	34.5	25.9	25.5
4	3.6	5.6	9.5	19.0	19.5	7.4
Very low	1.5	1.2	2.7	5.5	21.3	2.6
	100.0	100.0	100.0	100.0	100.0	100.0

Source: CAP Survey 2007/2008

For the group of the sample, it is perceived that the lesser importance the identification of academics with their discipline has, the lesser the proportion of academics satisfied with their job will be (considering the highest −1 and −2 categories of satisfaction). A comparison between the subgroup who assigns the maximum importance and that who assigns the minimum importance to the discipline shows that the proportion of academics satisfied with their job is almost a 60 % higher (69.3 % vs. 43.7 %). If this same comparison is made between the group of Latin American academics with the group of the remaining countries or between the different Latin American countries, a similar behavior is observed although with particular nuances in the differential of satisfaction.

The group of Latin American academics has greater proportion of satisfied professors than that of non-Latin American ones, although such proportion is, in both

cases, declining in relation to the lesser discipline affinity. The consideration of the national cases of Latin America shows that Mexico presents very high values of satisfaction (one-third higher) than those of Argentina and Brazil, and a more significant difference of satisfaction between the most identified academics with the discipline than with those who are less identified (88.7 % vs. 50 %). Brazil shows the same behavior as the sample as a whole. The cases of Argentina present a more moderate variety between the more and lesser identified with the discipline regarding their job satisfaction compared with the remaining Latin American countries, with the Latin American group and the sample; but the difference is still important. It can be asserted that the identification with the discipline promotes a greater job satisfaction.

The importance assigned by the university people of the sample to their identification with the academic unit where they perform their job has impact on the degree of job satisfaction. The proportion of satisfied professors providing more importance to such identification duplicates those who do not provide importance (76.9 % vs. 36.5 %). In this regard, that differential is higher than that found for the identification with the academic discipline – analyzed in the previous paragraph.

The Latin American and non-Latin American groups and the national cases of Latin America express the same setting with nuances. LA has fewer differences between the subgroups providing more or lesser importance to the academic unit than in the group of non-Latin American countries. Brazil, once again, presents levels of satisfaction similar to those of the group of sample and non-Latin countries. Mexico presents very high values of satisfaction than those of Argentina and Brazil and lesser difference of satisfaction between the more and less identified groups with the center than those presenting the Brazilian case. Argentina presents a little clear behavior of this variable. The lesser proportion of satisfied academics is shown among those providing an average importance to their bond with the center or department. From all the units of comparison, Argentina shows lesser variability in the satisfaction in accordance with the degree of reference with the center.

The importance provided by the university people of the sample to their identification with the university where they perform their job has impact on the degree of job satisfaction: the greater their reference with the institution is, the greater the probability of feeling satisfied with their job is. The proportion of satisfied professors providing more importance to such identification duplicates those who do not provide importance to it (76.8 % vs. 33.2 %). In that regard, that differential is higher than that found for the identification with the academic discipline and the center, which have already been analyzed.

The Latin American/non-Latin American groups and the national cases of Latin America express the same setting with nuances. Latin America has higher levels of satisfaction and higher differences among the subgroups providing more or lesser importance to their university reference (the difference reaches at 3.5 times higher quantity of satisfied professors), than in the group of non-Latin American countries.

The assertion showing that “the more their reference with their institution is, the more the probability of feeling satisfied with their job is” is particularly applicable

to the Brazilian case (this case deserves a more exhaustive and specific analysis because it is the only case where the figures of low and high satisfaction have importance) and also to the Mexican case (even though more moderately because the general levels of satisfaction, as already mentioned, are high). Argentina follows the pattern of the sample as a whole for the levels of satisfaction; however, it does not follow them regarding the differences among those who have strong institutional references and those who do not).

The analysis shows a strong impact of the identification degree of academics on their level of job satisfaction: the more their reference with the discipline, the academic unit or institution is, the more the degree of job satisfaction will be. According to the level of identification, the differences in the proportion of satisfied academics vary, however, if it is as to discipline or link with the body.

Latin America presents – as appeared in the other shown variables – greater levels of satisfaction than the universe of non-Latin American countries. In Argentina, the levels of satisfaction are similar to those of the group of sample but with fewer differences among the groups according to the degree of identification, for the reason that – for the national case – the above-mentioned assertion can only be supported (the more the identification of academics with discipline, academic unit or institution is, the more the degree of job satisfaction will be) regarding discipline. It is not possible to reach conclusions according to the departmental filiations. On the contrary, even, it shows higher levels of satisfaction among those who provide lesser importance to the institution.

12.3 Conclusions

The study developed allows us to establish that there is not a relationship among the variables so that they explain differentials of identification among academics regarding discipline and institution, when identity is considered as a dependent variable of others. But, indeed, that the level of identification has impact on the degree of job satisfaction thereof, and at a lesser extent in the academic interests, that is, when identity is considered as an independent variable.

The general conclusions that can be stated are as follows:

- The academic identification is very high to their identification regarding the institution either in its more immediate referential level (department, center or academic unit) or more mediate (institution).
- Latin American presents – slightly – a lesser identification towards the academic unit than towards the institution as a whole, unlike the general trend of the sample and non-Latin countries.
- Latin America, collectively, presents a significantly “more identified” academic body than those of the remaining countries included in the study and that difference with the remaining countries increases the more the level of institutional reference is.

A more specific consideration of each one of variables allows us, finally, to assert that:

- It can be told that the "type of commitment" – "partial or exclusive" – of academics establishes differential identifications in none of analysis levels.
- The Argentine situation, in that regard, is in such assertion although shows a differential of declining identifications for the hired groups (their identification is very high regarding discipline and low regarding institutional) and, a level of similar identification to "stable" professors. However, all these differences are not relevant.
- The "interests in teaching, research or both of them," neither allow us to foresee differences regarding the degree of identification although it could be observed the following nuance: the discipline identifications are higher among those who have interest for research and identifications towards the center and university are higher among those who have interest for teaching.
- When it is considered "who assesses the teaching activity of academics" and its impact on the levels of identification, relevant differences are neither appreciated. It can be observed that the higher levels of discipline identification are appreciated among academics whose assessment is developed by the chief of his or her own department/unit or himself/herself through formal mechanisms of self-assessment, and that the higher institutional identification –towards the academic unit or university as a whole – when it is carried out by "members of other departments/units of the institution." Perhaps, the most notorious finding it can have been done, in this regard, is the fact that the lack of assessment indeed comes fewer levels of identification at any level, either academic or institutional.
- The comparison for "gender of academics" in relation to their identity allows us to establish that there are not differences of identification arising therefrom. When the category of higher assigned importance is considered – exclusively -, women always appear with higher levels of identification than men. But if the positive identifications are considered – the two highest categories -, both sexes are balanced and cannot show differences.
- If we consider the identifications regarding the academic center of belonging and/or university, a slight declining trend is appreciated according to it moves forward in the age of the academics.
- "The Latin American academics" follow a different pattern, by showing increasing levels of identification as they become older. The national cases do not present a shared dynamic among them by behaving differently according to the academic identity is considered, towards the academic or institutional unit.
- The impact of the identification degree of academics on the level of their "job satisfaction" is strong: the more their reference with the discipline, academic unit or institution is, the more the degree of job satisfaction to be expected will be. The differences in the proportion of satisfied academics according to the level of identification vary, however, if it is about discipline or bond with the body.

Argentina presents levels of satisfaction similar to those of the group of the sample but with fewer differences among the groups according to their degree of identification, for that reason that – for the national case – the general assertion regarding discipline can be only supported. It cannot be possible to reach conclusions as to the departmental filiations, and, contradictorily, even, it shows higher levels of satisfaction among those who provide lesser importance to the institution.

As a part of the analyzed data they show us a degree of identification with the academic spaces, either their discipline, their institution or the space of combination of both of them – the department or faculty – higher in the Argentine case, and in Latin America than in the group of the sample. Another of the countries showing great levels of identification is Mexico. It is important to point out that both systems are characterized to have specific job situations and rather different situations from the ideal profession in other countries. The Argentine one, by being a system with few full-time positions, where the academics possibly develop other activities outside the academy or have more than one part-time or simple position. The Mexican one is the most notorious example of university policies where the assessment of quality and the incentive programs have directed the academic activities (Díaz Barriga 2008).

The academic profession involves a series of objective dimensions: from situation, access and academic career to their own activities of profession (teaching, research and management). But also it talks about subjective aspects of the activity, in this case that related to the academic identification.

As to the Argentine case – and the Mexican too – would seem that there is a greater necessity of identification counteracting the lack of "objective" conditions suitable to the development of the profession. That is, it is necessary that the academic creates his or her own "subjective" conditions of identification and job satisfaction. Then, we would be with a proactive charge of the profession, due to the constrictions of budget or job precarious position.

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Chapter 13
How Do Personal Characteristics Influence Scholarly Productivity? A Comparative Study of Chinese and American Academic Professions

Zeng Lin and Hong Shen

13.1 Introduction

Academic productivity can be measured through various outputs, e. g. conference presentations, working papers, and patents. However, this study utilizes books and journal articles as main measures because not all scholarly products are equally weighted in the process of faculty review in institutions (Green et al. 2002; Lin and Gao 2010). To explore the drivers of academic productivity, this paper compares two countries, i.e. the largest developing country, China and the most advanced country, the United States. A benchmark of other 16 participant countries[1] is used to provide validation for the comparisons.

Two dimensions, personal characteristics (gender, parents' educational attainment) and achievements (educational attainment, years since the first academic job, income, rank, tenure status, institutional setting, published in a foreign country, and overall job satisfaction), are selected as independent variables to explain publications of academic profession in the two countries. It is hypothesized that both

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[1] These participant countries are Argentina, Australia, Brazil, Canada, China, Finland, Germany, Hong Kong, Italy, Japan, Malaysia, Mexico, Norway, Portugal, South Africa, South Korea, USA, and United Kingdom.

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personal characteristics and achievements have significant impact on publications in both countries, where significant differences might be expected between China, the United States, and the rest of the participant countries.

13.2 Research Methods

The analysis is based on data of the project 'The Changing Academic Profession' (CAP). The survey included questions on personal demographics, scholarly activities and instructional duties of academic professions. The surveys were conducted in 2007 and 2008. Academic professionals were asked about their academic background, teaching, research, and job situation (including salary, workload, decision making, and job satisfaction). In constructing the dependent variable 'scholarly productivities in the past 3 years', we weighted a book as 3 journal articles whereas an edited book counts as 1 journal article. Both single and coauthored publications are counted equally here.[2] Information was gathered from 1826 respondents in China, 1049 in the United States, and 16,372 respondents in the other countries. Descriptive analyses (ANOVA and correlation) are first conducted, then followed by multivariate analyses.

13.3 Results

Table 13.1 shows that Chinese scholars on average published (16.7) significantly ($F_{2,19244} = 141.5$, $p < .01$) more than American scholars (7.2), while those from other countries also publish on average more than US scholars. Since the US are known for an overall high quality and quantity of academic productivity, we might have to challenge (Lin and Gao 2008) the initial snapshot with several possible questions. In particular we ask (1) Do these publications have similar quality in all countries? (2) Does China (and other countries) try to catch up with the United States in changing the academic professions? In order to answer these questions, research on the quality of publication is needed in the future.

To explore the causes of academic productivity, we first refer to background information of academics surveyed. The available literature suggests that demographic factors, such as gender, race and family background, have been most frequently explored. For instance, Schuster and Finkelstein (2006) show that men publish more than women. This is confirmed in Table 13.2, which shows that the gender gap is larger in China (1.35 times, $F_{1,1786} = 31.8$, $p < .01$) than in the United States (1.27 times, $F_{1,1037} = 7.4$, $p < .01$) – a finding suggests that Chinese academic culture may discourage women to publish more than the culture in the United States.

[2] There is no standard weighting method to combine books and journal articles in the literature. The choices made here are reasonable but subjective.

Table 13.1 Academic productivity in China, the United States and other countries (index)[a]

95 % CI for mean							
	N	Mean	SD	Lower B	Upper B	Min	Max
China	1826	16.7	16.0	15.98	17.45	0	135
US	1049	7.2	9.7	6.63	7.80	0	95
Other countries	16,372	12.3	15.0	12.03	12.49	0	305
Total	19,247	12.4	15.0	12.19	12.62	0	305

Source: CAP Survey 2007/2008
ANOVA $F_{2,19244} = 141.5$, $p < .01$
Data source: The Changing Academic Profession (CAP)
[a]Publications including books and journal articles. One book weighted as three articles

Table 13.2 Academics' gender and academic productivity in China, the United States and other countries (index)

	China			United States			Other countries		
Gender	N	Mean	SD	N	Mean	SD	N	Mean	SD
Male	1228	18.13	17.23	614	7.91	10.44	10,063	13.92	16.64
Female	560	13.55	12.53	425	6.25	8.43	5922	9.55	11.40
Total	1788	16.69	16.05	1039	7.23	9.70	15,985	12.30	15.06

Source: CAP Survey 2007/2008
ANOVA for China $F_{1,1786} = 31.8$, $p < .01$, the United States $F_{1,1037} = 7.4$, $p < .01$, and other countries $F_{1,15983} = 320.1$, $p < .01$

It should be noted that there is an even a larger gender gap in this respect in the other countries (1.46 times $F_{1,15983} = 320.1$, $p < .01$) than both in China and the United States.

As regards to the parental educational background, Table 13.3 reveals that a large proportion of the academics came from a family whose both parents did not receive postsecondary education both in China (71.6 %) and in the United States (37.1 %). The lower level of parental educational background in China reflects a different stage of development of the educational attainment of the population in general.

Many status attainment concepts claim that parental educational background has a strong impact on children's achievement (Blau and Duncan 1967; Lin et al. 2009). This is not confirmed in this study with respect to academic productivity. As Table 13.4 shows, the differences are notably insignificant in both China and the United States (both $p > .05$). In China, those academics are even slightly more active in publishing whose parents have lower educational attainment.

The academics' educational credentials, in contrast, have a strong influence on scholarly publication ($F_{3,1724} = 33.5$, $p < .01$ for China and $F_{3,1039} = 15.7$, $p < .01$ for the United States, and $F_{3,15875} = 3.8$, $p < .01$ for other countries), as Table 13.5 shows. This indicates that the academic profession is a largely merit-based profession. The difference of academic productivity according to one's own educational credential

Table 13.3 Academics' parental educational attainment in China and the United States (in %)

Parental educational attainment	China			United States			
	Father	Mother	Parents	Father	Mother	Parents	Difference
N	(3163)	(3142)	(3191)	(968)	(972)	(972)	
No formal education	12.6	21.4	11.5	3.2	3.3	2.0	9.5
Primary education	26.3	30.8	25.4	11.0	10.3	6.7	18.7
Secondary education	34.2	33.6	34.7	31.8	37.6	28.4	6.3
Tertiary education	26.9	14.2	28.4	54.0	48.8	62.9	–34.5

Source: CAP Survey 2007/2008

Table 13.4 Academics parental educational attainment and academic productivity in China, the United States and other countries (index)

Parental educational attainment	China			United States			Other countries		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
No formal education	254	18.6	16.7	21	5.8	8.0	656	11.8	18.8
Primary education	470	16.8	17.1	72	8.6	13.6	2857	11.6	13.9
Secondary education	521	15.6	15.5	290	7.1	11.0	4697	12.0	14.8
Tertiary education	481	16.7	14.9	647	7.2	8.6	6296	12.7	15.2
Total	1726	16.7	16.0	1030	7.3	9.7	14,506	12.2	15.0

Source: CAP Survey 2007/2008
ANOVA for China $F_{3,1722} = 2.0$, $p > .05$, the United States $F_{3,1026} = .6$, $p > .05$, and other countries $F_{3,14502} = 3.8$, $p < .01$

Table 13.5 Academics' credentials obtained and academic productivity in China, the United States and other countries (index)

	China			United States			Other countries		
Credential obtained	N	Mean	SD	N	Mean	SD	N	Mean	SD
BA/BS	306	14.12	15.10	6	1.17	1.33	2113	10.02	13.76
Master	721	13.52	14.21	113	2.36	4.12	3498	5.97	8.60
PhD	566	20.62	16.24	770	7.44	9.57	8754	14.39	16.03
Post doctor	135	23.53	19.91	154	10.12	11.71	1514	18.32	17.19
Total	1728	16.73	15.99	1043	7.25	9.67	15,879	12.33	15.05

Source: CAP Survey 2007/2008
ANOVA for China $F_{3,1724} = 33.5$, $p < .01$, the United States $F_{3,1039} = 15.7$, $p < .01$, and other countries $F_{3,15875} = 384.8$, $p < .01$

is substantially higher in the U.S. than in China. This reflects, on the one hand, that those without a PhD are a small residual group in the United States. On the other hand, many scholars of earlier generations in China have not yet have a chance of obtaining a degree, while PhD education expanded substantially only since about the year 2000.

Table 13.6 Correlations between academic productivity, years since first academic job and income in China, the United States and other countries

	China			United States			Other countries		
	Pub	Y_job	Income	Pub	Y_job	Income	Pub	Y_job	Income
Publication	–	.261**	.253**	–	.073*	.122**	–	.157**	.230**
Years on job		–	.379**		–	.191**		–	.165**
Income			–			–			–

Source: CAP Survey 2007/2008
**Correlation is significant at the 0.01 level, *at 0.05 level (2-tailed)

Table 13.7 Academic rank and academic productivity in China, the United States and other countries (index)

	China			United States			Other countries		
Position	N	Mean	SD	N	Mean	SD	N	Mean	SD
Senior position	1195	20.18	17.04	680	8.36	10.72	8699	15.31	16.90
Junior/other position	608	9.86	11.14	369	5.10	6.88	7218	8.84	11.61
Total	1803	16.70	16.07	1049	7.22	9.66	15,917	12.37	15.08

Source: CAP Survey 2007/2008
ANOVA for China $F_{1,1801} = 183.3$, $p < .01$, United States $F_{1,1047} = 28.0$, $p < .01$, and other countries $F_{1,15915} = 760.2$, $p < .01$

Academic productivity correlated both with the number of years on an academic job and with the level of income. Table 13.6 demonstrates that these correlations are highest in China ($r = .261$, $p < .01$) as compared to the United States ($r = .073$, $p < .05$) and other countries ($r = .157$, $p < .01$).

Similarly, academic productivity varies according to respondents' rank. Table 13.7 shows that those in senior ranks (equivalent to professors and associate professors) in China ($F_{1,1801} = 183.3$, $p < .01$) and in other countries ($F_{1,1047} = 760.2$, $p < .01$) publish about twice as much as those in junior positions, while the respective difference is smaller in the United States ($F_{1,15915} = 28.0$, $p < .01$).

Long-term contracts – in the United States in the way of so-called tenure – are expected to support academic freedom guarded by job security (AAUP 2010). Table 13.8 indicates that academics with long-term contract publish more than those without ($F_{1,1762} = 23.3$, $p < .01$ for China, and $F_{1,1047} = 22.4$, $p < .01$ for the United States, $F_{1,14387} = 56.8$, $p < .01$ for other countries). This difference is higher in the United States (1.53 times) than in China (1.26 times), which is in between the United States and rest of the surveyed countries (1.18 times). As long-term contracts are most widely spread among academics in senior positions one could have expected a wider gap than Table 13.8 actually shows.

As regards to institutional setting, we find, as expected, that academics at universities, in the CAP study here defined as institutions both in charge of research and teaching as well as involved in doctoral education, publish more than those at other

Table 13.8 Academics' long-term contract and academic productivity in China, the United States and other countries (index)

	China			United States			Other countries		
Contract	N	Mean	SD	N	Mean	SD	N	Mean	SD
No long-term contract	1252	15.6	14.8	426	5.5	7.6	6301	10.7	13.7
Long-term contract	512	19.6	18.7	623	8.4	10.7	8088	12.6	15.9
Total	1764	16.8	16.1	1049	7.2	9.7	14,389	11.8	15.0

Source: CAP Survey 2007/2008
ANOVA for China $F_{1,1762}=23.3$, $p<.01$, the United States $F_{1,1047}=22.4$, $p<.01$, and other countries $F_{1,14387}=56.8$, $p<.01$

Table 13.9 Academics' institutional setting and academic productivity in China, the United States and other countries (index)

	China			United States			Other countries		
Institutional setting	N	Mean	SD	N	Mean	SD	N	Mean	SD
University	1611	17.07	16.39	782	8.38	10.52	11,685	12.74	14.78
Other institution	215	14.01	12.55	267	3.81	5.18	4322	11.22	15.84
Total	1826	16.71	16.01	1049	7.22	9.66	16,007	12.33	15.09

Source: CAP Survey 2007/2008
ANOVA for China $F_{1,1824}=6.9$, $p<.01$, the United States $F_{1,1047}=46.4$, $p<.01$, and other countries $F_{1,16007}=31.8$, $p<.01$

institutions of higher education. Table 13.9, however reveals that this difference is much smaller in China than in the United States and in other countries ($F_{1,1824}=6.9$, $p<.01$ for China, and $F_{1,1047}=46.4$, $p<.01$ for the United States, $F_{1,16005}=31.8$, $p<.01$ for the other countries). This suggests that academics across the whole higher education system in China are quite active in publishing.

Publishing in a foreign country is a widespread practice in academic profession, whereby publishing especially in journals cited by Social Science Citation Index (SSCI) has a high prestige. Table 13.10 shows that academics publishing in a foreign country significantly publish altogether more than those publishing abroad in a foreign country in all the countries. These differences are highly significant ($F_{1,1824}=67.5$, $p<.01$ for China, $F_{1,1047}=51.2$, $p<.01$ for the United States, and $F_{1,16369}=847.2$, $p<.01$ for rest of the surveyed countries). Despite high prestige of foreign publication in China, this proportion difference is the smallest (1.5 times as compared to 1.8 times for the United States and 1.8 times for other countries). One critical issue here is the difficulty for Chinese scholars to fully master a foreign language.

Job satisfaction is an emotional state that reflects an affective response to the job situation (Locke 1984). Table 13.11 suggests that most academic professionals are satisfied with their jobs, and overall job satisfaction is linked to the frequency of

Table 13.10 Academics publishing in a foreign country and academic productivity in China, the United States and other countries (index)

Publishing in a foreign country	China			United States			Other countries		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Yes	382	22.59	18.07	256	10.89	10.71	8605	15.42	16.42
No	1444	15.16	15.05	793	6.03	8.99	7766	8.76	12.33
Total	1826	16.71	16.01	1049	7.22	9.66	16,371	12.26	15.00

Source: CAP Survey 2007/2008
ANOVA for China $F_{1,1824}=67.5$, $p<.01$, the United States $F_{1,1047}=51.2$, $p<.01$, and other countries $F_{1,16369}=847.2$, $p<.01$

Table 13.11 Academics' overall job satisfaction and academic productivity in China, the United States and other countries (index)

	China			United States			Other countries		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Not satisfied at all (1)	13	18.4	16.9	36	9.0	14.5	458	12.5	19.4
2	109	14.0	12.6	76	5.5	6.8	1174	10.5	12.2
3	590	15.0	13.1	285	7.9	10.6	3787	10.7	12.4
4	1003	18.0	17.4	454	6.4	6.8	7809	12.6	15.2
Very satisfied (5)	79	16.8	19.7	198	8.6	12.9	3008	14.0	16.8
Total	1794	16.7	16.0	1049	7.2	9.7	16,236	12.3	14.9

Source: CAP Survey 2007/2008
ANOVA for China $F_{4,1789}=4.1$, $p<.01$, the United States $F_{4,1044}=3.2$, $p<.05$, and other countries $F_{4,16231}=26.6$, $p<.01$

publications (in China $F_{4,1789}=4.1$, $p<.01$, the United States $F_{1,1044}=3.2$, $p<.05$, and in other countries $F_{1,16231}=26.6$, $p<.01$). However, it should be noted that the relations between publication and satisfaction demonstrates a non linear: Those satisfied as well as those not satisfied at all publish more than those in the middle. We might assume the very dissatisfied scholars may perceive a mismatch between their achievement in publications and rewards, but this interesting finding calls for further inquiry.

Table 13.12 displays the results of multiple linear regressions. The regression models can explain 17.1 % variance for China, i.e. somewhat more than the 13.9 % for the United States, and the 14.3 % for the other countries. The three null hypotheses that predictors have no impact on dependent variable have been rejected with the $F=28.4$ ($p<.01$) for China, $F=12.1$ ($p<.05$) for the United States, and $F=161.9$ ($p<.01$) for the other countries.

As regards the individual variables, Table 13.12 confirms that being a male faculty member has a positive impact on publications in China and other countries, but not in the United States. The result at least partially suggests that America made more progress in gender equality in the academic profession. Consistent with the previous descriptive analysis, we also note that parental educational background has

Table 13.12 Linear regression results of academic productivity in China, the United States and other countries

	China			United States				Other countries		
Independent variables	B	Beta	T	B	se	Beta	t	B	Beta	t
Male	2.23*	0.07	2.51	0.85	0.65	0.05	1.31	1.83**	0.06	5.86
Parental education	−0.14	−0.01	−0.35	−0.06	0.45	−0.01	−0.13	0.21	0.01	1.22
Own educational attainment	2.50**	0.13	4.56	2.61**	0.61	0.15	4.27	3.26**	0.15	13.94
Years since 1st job	0.22**	0.12	3.41	−0.05	0.03	−0.07	−1.65	0.07**	0.05	4.32
Income (log10)	5.10**	0.08	2.74	1.22	0.63	0.07	1.93	2.73**	0.11	10.63
Rank	4.99**	0.15	4.43	2.05	1.10	0.11	1.86	4.69**	0.15	12.97
Tenured	1.03	0.03	1.13	0.64	1.08	0.04	0.60	−1.24**	−0.04	−3.83
Institutional setting	−0.41	−0.01	−0.31	3.67**	0.70	0.18	5.21	−1.59**	−0.05	−4.81
Publishing in a foreign country	4.46**	0.12	4.47	3.65**	0.72	0.18	5.05	4.45**	0.15	14.07
Overall job satisfaction	1.21*	0.05	2.17	0.14	0.32	0.02	0.44	0.94**	0.06	5.91
(Constant)	−21.0		−3.19	−11.67	3.98		−2.93	−18.58		−13.74

Source: CAP Survey 2007/2008

Dependent variable: Publications (book and articles published in recent 3 years) for China, $R = .414$, $R^2 = .171$, $F = 28.4$, $p < .001$; the United States, $R = .372$, $R^2 = .139$, $F = 12.1$, $p < .001$, and other countries, $R = .378$, $R^2 = .143$, $F = 161.9$, $p < .001$

no significant impact on publication activities in the countries in the countries surveyed. This is a surprising phenomenon when comparing it to most literature which suggests an impact of family background on personal achievement (Blau and Duncan 1967; Ballantine and Hammack 2012; Sewell et al. 1970). Obviously, an academic career is one of the best channels for social mobility for those who come from middle or lower class families.

The academics' own level of credentials is a significant predictor in all participating countries. This result further reinforces the impression that the academic profession, to large extent, is a merit-based rather than an ascribed profession. Years since first academic job have positive impact on publications in China and in other countries, but not in the United States. Income, rank, tenure status, and overall job satisfaction as well have a significant impact on publications in China and the rest of participant countries, but not in the United States.

In brief, the multiple linear regressions reveal different patterns of predictors underlining the differences of structural factors and developing stages across China, the United States and other countries. First, we observe universal patterns of

predictors. Own educational credentials and publishing in a foreign country consistently have a significant impact on academic productivity, while parental educational background and tenure status have no significant impact on publications across all countries surveyed. Second, some predictors are significant in China and other participant countries, but not in the United States. This holds true for gender, years since first academic job, income, rank, and overall job satisfaction. This suggests that China and the United States are in the different development stages. Gender and seniority are not barriers of publication in the United States, but they are the obstacles in China. Third, there are predictors that are significant in the United States, but not in China and the other countries surveyed. Institutional setting is a typical example which suggests a stronger division of labor of academic institutions in the United States than in China and other countries.

13.4 Concluding Remarks

Descriptive and multivariate analyses help compare similarities and differences in academic productivity countries. While some of the differences observed between China, the United States, and other participant countries of the comparative survey 'The Changing Academic Profession' are created by culture, others are influenced by different stages of development and finally others by different institutional patterns. Differences in academic productivity by country, finally, raise a series of questions about the international competition taking place in changing academic profession across countries. Further research is needed to address some of the in-depth questions raised by this initial investigation.

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Chapter 14
Career and Self-Understanding of Academics in Germany in Comparative Perspective

Ester Ava Höhle and Ulrich Teichler

14.1 Introduction

In most countries of the world, the career of the academic profession is viewed as exceptional when compared to other professions: there is a very long period of 'formative years' (Teichler 2006) up to the professoriate, i.e. the stable, independent and responsible academic position. At an age, when professionals in other fields might be considered to be fully qualified already for a long time and when the career patterns stabilize, academics in many countries are still viewed as building up their competences along possibly productive work. In many countries only at about the age of about 35–40 years, academics are likely to take over the full responsibilities of experienced scholars.

This notwithstanding, we note that many studies on the academic profession address the views and activities of academics as a seemingly homogeneous group. For example, most country chapters of the major report of the findings of the first comparative questionnaire survey of the academic profession undertaken in the early 1990s, the Carnegie Study, had proceeded that way (Altbach 1996), and the same holds true for the first major book on the findings of the questionnaire survey 'The Changing Academic Profession (CAP)' undertaken late in the first decade of the twenty-first century (Locke et al. 2011) – the survey addressed in this publication as well. This view of the academic profession as a uniform profession is based on the assumption, first, that academics have much in common no matter whether their institution emphasizes a close nexus of teaching and research or has primarily a teaching function. In addition, the view seems to prevail that junior scholars are more or less on a continuous route towards fully matured and responsible scholars.

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One could argue, in contrast, that there is hardly a single academic profession. Accordingly, the views and activities of academics at teaching-oriented institutions have little in common with those at institutions equally in charge of teaching and research. Similarly, junior academics might not be viewed as being the followers of the university professors, but rather as significantly distinct during this career stage from university professors, as they are being socialized during another period of time.

Both, the reports on academics in Germany in the framework of the Carnegie Study (Enders and Teichler 1995) and in the framework of the CAP Study (Jacob and Teichler 2011) depict the academic profession in Germany as a substantially divided profession according to career status (professors versus junior academic staff) and institutional type (university versus university of applied sciences). This does not come as a surprise. For the contrast between a long period of uncertain employment and limits of independent academic work on the part of junior academics on the one hand and on the other hand the secure and powerful position of university professors seems to be especially pronounced in Germany.

For example, a recent article of one of the best known newspapers in Germany on the mixed successes of efforts in recent years to improve the situation of junior academics at German universities had the ironic title "The human being starts with the chair holder" (*Der Mensch beginnt beim Lehrstuhlinhaber*, Frankfurter Allgemeine Zeitung, 5 December 2012). Therefore, the question is often raised whether junior academics in Germany are in an exceptionally distant situation to their seniors (cf. various articles in Enders 2001; Enders and De Weert 2004; Janson et al. 2007; Burkhardt 2008; Kreckel 2008; Jacob and Teichler 2009).

Also, Germany belongs to the countries, where the career patterns and work tasks of academics at other institutions of higher education – called *Fachhochschulen*and 'universities of applied sciences' in the English language – seem to differ substantially from those at universities (cf. the basic information on the higher education system in Germany and its implication for the academic profession in Kehm 1999, 2006; Turner 2001; Teichler and Bracht 2006; Simon et al. 2010; cf. the similarities and distinctions of different types of higher education institutions in Taylor et al. 2008). Again, we can ask whether academics at other institutions are a profession separate from the academic profession at universities and, if so, whether this is unique for Germany or applies for some other countries surveyed as well.

We cannot exclude, however, that, in Germany, distinctions of academic careers, views and activities differ more strikingly in the – possible somewhat stereotype – German public discourse than in reality. We also might argue that the authors of the country reports on Germany in the two comparative studies might overrate country differences in those respects. Also, in reverse, differences by career stage and institution might be substantial in other countries surveyed as well.

Therefore, the aim of this article, first, is to examine the biography, career as well as employment situation of junior academics in Germany from the point of view whether junior academics in Germany are in a clearly distinct situation from that of senior academics or whether their situation can be considered just as a typical early

step of career progression in academia. A comparison with findings from other economically advanced countries is helpful in order to assess the extent of commonality versus distinction between junior and senior academics (see also Höhle 2015).

Second, the aim of this article is to compare select aspects of the actual work situation according the above named categories. It is interesting to note how much the working life actually differs – in this case not only between junior and senior academics at German universities, but also between academics at universities and other institutions of higher education. In Germany, there is a number of different higher education institutions of which data of German *Fachhochschulen* is compared to universities here. They can also be called university of applied sciences, polytechnics, or other higher education institutions. Are there signs that these differences are exceptional in Germany in international comparison, or do we note similar features in other countries as well? Three themes of the actual work situation are selected: the proportion of the work time spent on research, the perceived quality of facilities and resources for their academic work, and the influence they believe to have on key academic policies within their institution of higher education (cf. Teichler 2010).

Third, select aspects of the academics' views and values in Germany will be analyzed according to career stage and institutional type: do they differ strikingly in those respects? Again, we ask whether differences are more pronounced than in most comparable countries comprised in the CAP study. Three themes are selected as well in this framework: their preferences as regards teaching and research, the tasks they emphasize related to scholarship and research, and finally their overall satisfaction.

14.2 Basic Information About the Methods Employed

Before the presentation of the results basic information should be provided about the methods employed in surveying Germany academics within the comparative Study 'The Changing Academic Profession' (CAP; see Jacob and Teichler 2011). The German survey of the academic profession was undertaken from January to July 2007 as part of the comparative study comprising altogether 19 countries (more precisely 18 countries and the special administrative unit of Hong Kong). CAP was organized as a decentralized project, and each country study was funded independently by national funding organizations. The German survey was supported by the German Ministry of Education and Research (BMBF). The national teams followed a common methodological framework, but adapted it to the individual situation in each country in some respects.

In Germany, the questionnaire was sent by mail and online to more than 5000 regularly employed, university-trained persons active in departments or special units in charge of teaching and/or research within universities, public research

institutes, fine arts colleges and *Fachhochschulen* (universities for applied sciences). Altogether, 1668 persons responded. By excluding persons not reached or informing us that they do not belong to the target group of the survey, we calculate a response rate of 32 % – i.e. clearly above the average of the countries included in the subsequent analysis (cf. Teichler et al. 2013).

The subsequent analysis is based on the responses from 324 university professors (including those from colleges of fine arts), 695 other academic staff at universities (junior staff, matured staff not promoted to professor positions) and 215 academics from universities of applied sciences (about nine tenths of them professors). The academics employed at German public research institutes, who had been surveyed in addition, are not included here. The data are consistently divided into these three categories. This choice was made, because the views and activities of junior academics in Germany are generally believed to differ strikingly from those of senior academics; similarly, the situation of professors at German universities of applied sciences differs substantially from those at universities that one cannot talk of a single academic profession in Germany. It should be added that junior academics at universities of applied sciences are merged to a single category with that of senior academics at this institutional type, because the number of junior academics at universities of applied sciences is quite small.

The responses are weighed according to academic rank, current academic discipline, institutional type and gender. This weighing was undertaken in order to counterbalance under and over-representations of sub-groups as a consequence of non-representative sampling and/or responses.

Germany was among the countries that also have participated in 1992 Carnegie study, i.e. the predecessor study from which some questions have been taken over in the 2007 questionnaire. In 1992, the German survey elicited about 2800 responses, with a response rate of 27 % (see Enders and Teichler 1995; cf. Boyer et al. 1994) The increase of the response rate in Germany is remarkable because we observe a growing survey fatigue in many countries. It should be added that East German universities had not yet be been included in the 1992 survey, because the transformation process in East Germany towards similar modes as in Western Germany had just started at the time the survey was conducted.

The data presented in the subsequent text are taken from the comparative CAP data set made available in May 2010. It should be noted that publications on the results of the CAP project are based on various data sets which had been added and revised over time. The analysis focuses on the German situation. In order to point out the characteristics of this country, a comparison is undertaken in many instances with a selection of nine advanced countries, i.e. Australia, United Kingdom, United States of America, Canada, Portugal, Finland, Norway, Italy and Japan. When the findings of the 2007 study are compared to those of 1992, such a comparison can be undertaken only with four other countries, i.e. Australia, United Kingdom, United States of America and Japan.

14.3 Biography, Career and Employment Situation

14.3.1 Personal Characteristics: The Share of Women Among Academics

In public discourses on the role socio-biographic factors play in academic careers, emphasis is placed on gender since the 1980s. In this study, we address primarily gender differences in this framework because this is the only socio-biographic feature for which data are available both from 1992 to 2007.

In 1992, only 6 % of university professors in Germany were women, as shown in Table 14.1. This proportion was lower than in the United States (17 %) and Australia at that time, but at the same level as in the United Kingdom, and clearly higher than in Japan (1 %). At that time, women comprised 22 % among junior staff in Germany. Views were widespread that women among junior academics had limited chances to progress to the professorial level, whereby the 'glass ceiling' argument was often employed.

In 2007, the proportion of women among university professors actually reached 18 % in Germany. This is the lowest rate in comparison to the other advanced countries addressed in Table 14.1 except for Japan, but it can be viewed as relatively high as compared to 1992. In Australia, the United Kingdom and the United States the share of women among professors was higher than 30 %. In 2007, the proportion of women among junior academics at German universities has reached 38 %; this is lower than in most of the other countries addressed in Table 14.1 as well, and even more than half in Australia and the United Kingdom, but also this share is constantly rising in Germany. We might predict therefore that the proportion of women among university professors in Germany will eventually surpass one third in the early 2020s.

In 1992, the percentage of women among academics at other institutions of higher education in Germany was not much higher than that of university professors: 9 % (as compared to 6 %) in and 20 % as compared to 18 % in 2007. In 1992 as well as in 2007, in most countries, the proportion of women among senior academics at other higher education institutions is higher than at universities. Here comes into play that the salary and social status of academics employed at other higher education institution is significantly lower than that of academics employed at university.

Table 14.1 Percentage of women among senior and junior academics in selected advanced countries in 1992 and 2007

	Year	AU	UK	US	CA	PT	FI	NO	IT	DE	JP
University seniors	2007	39	33	32	29	29	27	25	24	18	13
	1992	10	6	17	.	.	.	.	.	6	1
University juniors	2007	63	52	46	43	45	47	50	46	38	14
	1992	39	29	42	.	.	.	.	.	22	7
Other HEI seniors	2007	47	.	34	.	47	37	36	.	20	17
	1992	36	.	35	.	.	.	.	.	9	10

Source: Carnegie Survey and CAP Survey 2007/2008 (May 2010 data)

Table 14.2 Gender of senior and junior academics at German universities and Fachhochschulen by disciplinary group in 2007 (percentage)

	University			Fachhochschulen		
	Professors Hum./Soc. sc.	Professors Science/ Eng.	Juniors Hum./Soc. sc.	Juniors Science/ Eng.	Professors Hum./Soc. sc.	Professors Science/Eng.
Female	23	14	53	32	29	15
Male	77	86	47	68	71	85
Total	100	100	100	100	100	100

Source: CAP Survey 2007/2008 (May 2010 data)

The underrepresentation of women in highest academics ranks in Germany can be illustrated as well with data on different professorial ranks: among those on lower ranking professorial positions at universities (category C3 or W2) in 2007, 25 % were women, while the respective figure was 13 % among higher ranking professorial positions at universities (category C4 or W3).

As in many other countries in the world, women at German higher education institutions are clearly more frequent in some disciplines than in others. At German universities in 2007, only 14 % of professors in science and engineering were women in contrast to 23 % in the humanities and social sciences. The respective difference was even higher at other institutions of higher education (15 % vs. 29 %). As Table 14.2 shows, women (53 %) had surpassed men among junior academics at German universities in the humanities and social sciences.

14.3.2 Socio-biographic Profile

Less than half of the German university professors (45 %) report in 2010 that their father would hold a higher education degree, and 20 % report that their mother would hold such a degree. Professors from *Fachhochschulen* state respective rates of 33 and 15 %. These data suggest that university professors in Germany is a less select group in terms of parental educational background that one tends to assume.

Academics tend to marry partners with a high level of educational attainments. Among professors at German universities surveyed in 2007 who are married and/or have a partner (actually 92 % of all university professors), 82 % have a partner with a higher education degree. The respective rate is 73 % among professors at other institutions of higher education (94 % were married and/or had a partner). Actually, 28 and 16 % of the partners are academics as well, and abut two-thirds of the partners altogether are professionally active.

In Germany, differences in the relationship of partnership and family according to gender are quite obvious. 20 % of female university professors are single in comparison to 6 % among men; this difference is clearly lower among professors at *Fachhochschulen*: 7 % versus 5 %. Few men, but a substantial proportion of women

has interrupted their professional career for a while to take care for children or other family members.

An international background is not exceptional among academics in Germany, but certainly Germany does not belong to those countries with high rates in this respect. Among the university professors, 8 % percent have been born in another country, and 6 % have another citizenship at the time of the survey, and 6 % have another mother tongue. Other institutions of higher education in Germany are less international: the respective rates are 4, 2 and 3 %.

14.3.3 Qualifications

Traditionally, the entry qualification for a professorial position in Germany is the *Habilitation*, a kind of an advanced doctorate, in some countries called doctor scientiae, which is usually awarded after about 5 years on subsequent academic work conceived to be on a higher level than that of doctoral work. Traditionally, the core was a major book, but in the mean time it can be a cumulative opus instead. This formal qualification is specifically European, as it is in practice only in a few countries: Germany, Austria, Switzerland, France, Poland and some other Eastern European countries. In Germany, it contributes to the hierarchical relationship between juniors and seniors. Together with the *Habilitation*, the awarding university confers the right to teach independently at a university (*venia legendi*) and names the area of expertise in which the person can be appointed as professor (see Kultusministerkonferenz 2003; Berning et al. 2001). Universities, however, can also assess the academic achievements of a candidate for a professorship who has not been awarded a *Habilitation* and rate them as equivalent to a *Habilitation*. It should be noted, though, that those being awarded a *Habilitation* are not more or less assured a professorship. According to official statistics, less than half of the holders of a *Habilitation* climb up to a professorial position (see Bundesbericht zur Förderung des Wissenschaftlichen Nachwuchses 2008). Among the junior staff at German universities surveyed in 2007, actually one sixth had been already awarded a *Habilitation*, and for most it lay ten or more years behind. This reflects the fact that the search for a professorship might take some years and that those principally qualified might even remain in non-professorial positions (here named ‘junior staff’ position) for the remaining professional life.

Professors at *Fachhochschulen* also have to be awarded a doctoral degree. In contrast to university professors, however, they have to gain 5 years of professional experience subsequently, among them at least 3 years in the field of teaching outside academia, before they can apply for an appointment to a professorship (see Klumpp and Teichler 2008).

After the award of a master-equivalent degree, persons can be appointed at a German university as junior staff. Actually, more than half of doctoral candidates are employees at a university, either funded by a university position or by research funds raised. Many junior academics of that stage are employed part-time and

almost all on a short-term basis. Thereby, employment on a university position is limited to altogether 6 years (no matter whether a junior academic spends this time at a single university or is mobile among German universities).

The number of doctoral awards in Germany surpasses by far the number of positions on the subsequent academic career stages. Germany is traditionally among the countries in the world with a high doctoral rate among the respective age group, and statistics show that only about one quarter of all doctoral degree holders in Germany are employed at a university shortly thereafter and that possibly one tenth eventually become university professors (see Janson et al. 2007; Bundesministerium für Bildung und Forschung 2008).

Part-time employment and contracts for a limited period even prevail for doctorate holders, although full-time and long-term employment is clearly more frequent among those with a doctoral degree than at the stage of doctoral training. Again, employment on a university position during and after the doctoral stage is limited to altogether 12 years (again no matter whether a junior academic spends this time at a single university or is mobile among German universities). In the above named newspaper article, one junior academic is quoted as saying: "It is as if an apprentice in a company was told: If you do not reach a CEO position in 12 years, you are out. What company would do that?"

Traditionally, junior academics with a doctoral degree were called assistants if they were paid by a university position; there used not to be a position similar to an assistant professor in U.S. terms. In the first decade of the twenty-first century, the *Junior-Professor* was introduced in Germany but has remained on a relatively small scale.

Appointment to a university professor position in Germany is customary on average at slightly above 40 years of age. There are two professorial ranks which are not conceived to be clear stages: on the one hand, the full professorship is often already the first professor position; on the other hand, a professor appointed to the lower professorial position is not on a promotion track to the higher education, but has to apply, if a higher ranking position is available somewhere else.

Universities of applied sciences are not doctor-awarding institutions. However, a small number of excellent graduates from these institutions head for a doctoral award, whereby they might be jointly supervised by a university professor and professor of university of applied sciences. Most professors at universities of applied sciences pursue the usual university staff career before they decide after the doctoral award or some years later to be professionally active in the way needed for a professoriate at this institutional type.

In the light of this basic information on academic careers in Germany, it does not come as a surprise to note that the proportion of university professors at German universities being doctoral degree holders is very high: both 95 % in 1992 and 2007, i.e. the highest in 1992 and the second highest in 2007 among the countries addressed in Table 14.3. Exceptions can be found in Germany primarily in the area of fine arts.

It should be noted that Table 14.3 does neither provide information on the proportion of doctoral degree holders among junior staff nor among all academics. Such data would be meaningless as indicators how important a doctoral award is for

Table 14.3 Doctoral degree holders among professors at universities and other higher education institutions in selected advanced countries in 1992 and 2007 (percentage)

	Year	AU	UK	US	CA	PT	FI	NO	IT	DE	JP
University seniors	2007	92	78	91	94	97	92	85	33	95	93
	1992	85	74	94	.	.	.	.	.	95	85
Other HEI seniors	2007	92	.	89	.	82	41	86	.	86	71
	1992	43	30	72	.	.	.	.	.	64	49

Source: Carnegie Survey and CAP Survey 2007/2008 (May 2010 data)
CAP survey: Question A1: For each of your degrees, please indicate the year of completion and the country in which you obtained it

Table 14.4 Highest degrees of professors at German universities and other higher education institutions by disciplinary group in 1992 and 2007 (percentage)

	2007			1992
	Hum./Soc.sc.	Science/Eng.	Among them: Engineering	Total
Universities				
First or second degree	9	1	0	5
Doctoral degree	9	20	62	22
Habilitation	83	79	39	73
Other HEIs				
First or second degree	13	10	6	34
Doctoral degree	73	74	79	61
Habilitation	13	16	15	5

Source: Carnegie Survey and CAP Survey 2007/2008 (May 2010 data)
CAP survey: Question A1: For each of your degrees, please indicate the year of completion and the country in which you obtained it

progress in the academic career, because they differ between countries primarily according practices of employing many, few or hardly any persons in the career stage of doctoral candidates.

In Germany, more than 70 % of the professors surveyed in 1992 have been awarded a *Habilitation*, as shown in Table 14.4. In 2007, this rate is even higher with around 80 %. Engineering is often named as an exceptional field, where many persons move to industry after a doctoral award and are appointed as a professor after some years of leading functions of R&D in industry. Table 14.4, in fact, shows that the rate of professors in engineering with a *Habilitation* is only half as high as that of all university professors; the respective rate is also relatively low in educational fields and very low in fine arts.

Germany is often named as country with a relatively high entry *age* to study as well as age of graduation at master level. Reports focusing solely on the German situation often claim that the average age at the award of doctoral degree is also quite high. Table 14.5 shows, however, that the professors at German universities are the youngest of the countries addressed in this article on average: they have been 30 years, when they have been awarded a doctoral degree. The university professors

Table 14.5 Average age at the doctoral award of senior and junior academics at universities in selected advanced countries in 2007 (years)

	AU	UK	US	CA	PT	FI	NO	IT	DE	JP
Professors	31	31	33	33	35	36	37	32	30	34
Junior staff	35	31	35	33	38	35	35	31	32	33

Source: CAP Survey 2007/2008 (May 2010 data)
CAP survey: Question A1: For each of your degrees, please indicate the year of completion and the country in which you obtained it. Question F2: year of …

in Norway and Finland even have been 7 and 6 years older on average when they have become degree holders. Junior staff with a doctoral degree in Germany has been awarded this degree at the age of 32 on average. This shows, when compared to the respective average age among professors, that those are more likely to be promoted who have been awarded a doctorate at a relatively young age.

14.3.4 Career Patterns and Employment Conditions

Germany belongs to those countries surveyed where the proportion of respondents in 'senior positions' is relatively small. Among academics at German universities surveyed, only 15 % are professors. That means that more than five persons are employed at German universities on a non-professorial rank on average per professor. In most cases, these are persons employed on junior positions of the universities linked to professorial positions or persons paid by research funds that the professors have raised together with their teams. In fact, many university professors in Germany often supervise relatively sizeable numbers of junior staff and in some cases supervise sizeable research teams. Actually, as Table 14.6 shows, the respective number per professor is less than five in the humanities and the social sciences, but about nine in natural sciences and engineering. This proportion also implies that a substantial proportion of junior academics eventually will not progress up to a professorial position which means in many cases that they will not have the chance to remain in academia but rather will work somewhere else after a while. In contrast, *Fachhochschulen* in Germany are not expected to train academic junior staff. As Table 14.6 shows, 69 % of academics at these institutions held professorial positions.

According to statistical data available at the time the CAP survey was conducted, students in Germany are awarded a master-level degree on average at about 27–28 years. The doctorate is awarded on average at the age of 33, and the *Habilitation* at the age of 40. The average age for the first professorial appointment is 41 years. According to employment regulations, junior scholars should not be employed on university positions longer than 6 years up to the doctorate and not more than 12 years altogether on university junior positions. However, they might be employed longer if paid by external grants.

Table 14.6 Position and qualification of senior and junior academics employed at German universities and other higher education institutions by disciplinary group in 2007 (percentage)

	Universities			Fachhochschulen		
	Hum./Soc.	Nat./Eng.	Total	Hum./Soc.	Nat./Eng.	Total
Seniors	21	11	15	75	67	69
Juniors with postdoctoral degree	13	15	14	0	2	2
Juniors with doctoral degree	32	39	36	7	7	7
Juniors without doctoral degree	34	35	35	17	25	23
Total (%)	100	100	100	100	100	100
Total (n)	(324)	(715)	(1039)	(40)	(93)	(133)

Source: CAP Survey 2007/2008 (May 2010 data)

Actually, as Table 14.6 shows, about one third of academic junior staff at German universities in 2007 is at an early stage of their career and has not yet been awarded a doctoral degree. 79 % of the junior staff without a doctorate actually are within the stage of the first 6 years after graduation. Among them,

– 54 % are part-time employed, and
– 99 % have a short-term contract.

21 % of the junior staff is already more than 6 years beyond graduation:

– 38 % of them are part-time employed, and
– 81 % have a short-term contract.

About six tenth of junior (and middle-ranking) staff at German universities has a doctoral degree. 56 % are in the normal employment period of junior staff, i.e. have at most spent 12 years since graduation. Among them,

– 19 % are part-time employed, and
– 90 % have a short-term contract.

44 % of junior (middle-ranking) staff at German university with a doctoral degree is employed beyond the normal employment period of junior staff, i.e. have spent more than tan 12 years since graduation. Among them,

– 31 % are part-time employed, and
– 47 % have a short-term contract.

The fact that more than half of those persons with a doctoral degree at this stage of the career have a ‘long-term contract’ is somewhat surprising. In the public debate, it is often argued that the academic career enforces the alternative of ‘up’ or ‘out’. This finding, however, shows that there is a certain proportion of academics who ‘survive’ at German universities for a longer period or even the whole academic career without being promoted to a professor position.

Actually, part-time employment of junior staff varies substantially by gender. This applies for

- 68 % of women in contrast to 36 % of men among junior staff without a doctorate during the first 6 years after graduation,
- 64 and 24 % among junior staff without a doctorate more than 6 years after graduation
- 30 and 10 % among those with a doctorate within 12 years after graduation, and
- 45 and 11 % those with a doctorate beyond 12 years after graduation.

Here comes into play that full-time positions are more often offered in the science and engineering fields where men are most strongly represented. However, women more often can only work part-time because institutional or familiar arrangements do not cover full-time childcare.

The professoriate is a secure job as a rule in Germany. Part-time employment is not customary at all among professors employed at the university (the survey did not address persons employed somewhere else who work at the university on an honorarium basis or even teach a class without financial compensation). Only 3 % of the professors at German universities have a short-term contract. The respective proportions are 6 % (part-time) and 2 % (short-term) among professors at German universities of applied sciences.

In comparison to other economically advanced countries, part-time employment of junior academic staff at German universities is exceptionally high. One has to take into consideration, though, that many of them are employed doctoral candidates who are mostly not employees – rather doctoral students – in the majority of other countries addressed and, therefore, are not included in Table 14.7**.**

Table 14.8 shows that the practice of short-term employment of academics varies substantially across countries. A short-term employment rate among junior staff at universities is not only very high in Germany (79 %), but also in Canada (82 %) and Norway, but relatively low in the United Kingdom (28 %) and Japan (39 %).

In recent years, employment practices for university professors have changed: short-term contracts has spread not only in Finland (34 %) and Australia (23 %), but also has reached a certain level in Japan and Portugal (13 %) each. Germany belongs to the countries where short-term employment of university professors has remained exceptional.

Table 14.7 Part-time employment among employed senior and junior academics at universities and other higher education institutions in selected advanced countries in 2007 (percentage)

	AU	UK	US	CA	PT	FI	NO	IT	DE	JP
University seniors	9	5	2	1	3	4	6	3	0	0
University juniors	19	14	15	2	12	6	11	2	31	7
Other HEI seniors	6	.	10	.	2	10	10	.	6	0
Other HEI juniors	11	.	11	.	6	11	13	.	12	1

Source: CAP Survey 2007/2008 (May 2010 data)
CAP survey: Question A7: How is your employment situation in the current academic year at your higher education institution/research institute?

Table 14.8 Short-term employment among employed senior and junior academics at universities and other higher education institutions in selected advanced countries in 2007 (percentage)

	AU	UK	US	CA	PT	FI	NO	IT	DE	JP
University seniors	23	2	5	5	13	34	4	.	3	13
University juniors	52	28	56	82	69	50	74	.	79	39
Other HEI seniors	14	.	8	.	15	8	13	.	2	9
Other HEI juniors	34	.	12	.	75	12	61	.	41	23

Source: CAP Survey 2007/2008 (May 2010 data)
CAP survey: Question A11: What is the duration of your current employment contract at your higher education institution or research institute?

In the framework of the CAP questionnaire survey academics also have been asked to provide information about their income: the gross annual income generated from their institution of higher education as well as other income. Accordingly, the annual overall gross income university professors has been about 148,000 US$ in the United States, about 110,000 US$ in Japan and Germany as well as between around 80,000 US$ and 100,000 US$ in the other countries addressed in this comparative analysis. For a detailed analysis, data on purchasing power, taxes and social benefits would be needed.

In the framework of this article, it is interesting to examine how much junior academics earn on average as compared to senior academics at universities. Actually, this ratio is 46 % in Germany, between 50 % and 60 % in Italy, Finland, Australia and Portugal, between 60 and 70 % in the United States, Norway and the United Kingdom, and more than 70 % in Canada and Japan. Thus, a high status gap between junior academics and senior academics at German universities is visible as well with respect to their income. It should be noted that this calculation includes part-time academics; this calculation has been chosen here in order to show how much money is actually available for the respondents.

It should be added that the gross overall income of professors at German *Fachhochschulen* is 86 % on average of that of university professors. The income gap according to institutional type in Germany is lower than in the US (68 %) and Portugal (73 %), but higher than in the other countries, where professors of other institutions of higher education earn more than 90 % as much as university professors.

14.3.5 Institutional Mobility

The Carnegie Survey of 1992 has shown that the proportion of university professors in Germany who had been only employed at a single institution of higher education through all their academic career has been very low. There is the so-called *Hausberufungsverbot* in Germany: universities are not permitted to appoint somebody to a professor who had been employed most of the post-doctoral stage and

Table 14.9 Number of universities and *Fachhochschulen* (FH) where German senior and junior academics surveyed in 2007 and 1992 had been employed since their first degree (arithmetic mean)

	2007			1992		
	Univ. seniors	Univ. juniors	FH	Univ. seniors	Univ. juniors	FH
Number of institutions	3.9	2.1	2.8	2.6	1.5	1.8

Source: Carnegie Survey and CAP Survey 2007/2008 (May 2010 data)

who had possibly been awarded the *Habilitation* at the same university, and exceptions tend to be very few. Actually, 8 % of the university professors in Germany report in 2007 that they have only be employed at a single university; among them, however, there are persons who have been employed at research institutes outside higher education or in industry prior to the appointment to a professor position.

Actually, inter-institutional mobility of academics in Germany has grown over the years. As Table 14.9 shows, university professors surveyed in 2007 have been employed on average at 3.9 academic institutions (institutions of higher education and possibly publicly funded research institutions) the respective figure has been only 2.6 in 1992. We also note a substantial growth, though on a lower level, among professors at universities of applied sciences (from 1.8 to 2.8) and among junior academics at universities (from 1.5 to 2.1).

The available data for 2007 from other countries show that inter-institutional academic mobility is very high in the German university system. Among university professors, the proportion of those having been at a single academic institution is the lowest in Germany. The number of academic institutions at which the university professors have been employed is only higher in Italy among the countries included in the CAP survey.

In the above presented figures on German academics, employment at research institutes is included, not however employment outside academia. Actually,

- 8 % of professors at universities (6 % in the humanities and social sciences and 10 % in natural science and engineering) have worked for some time at research institutes outside higher education, and
- 17 % (19 % in the humanities and social sciences and 15 % in natural science and engineering) have worked since graduation some time outside academia.

As one might expect, the respective figures are higher among professors at *Fachhochschulen,* because work experience outside academia is a qualification requirement. Actually,

- 14 % of professors at universities of applied sciences (19 % in the humanities and social sciences and 28 % in natural science and engineering) had worked for some time at research institutes outside higher education, and
- more than half had worked since graduation some time outside academia.

Respective figures are not presented here for junior staff, because the responses of those currently employed at institutions of higher education would only provide an incomplete picture of the inter-institutional mobility.

The international comparison reveals that in all countries but Japan mobile university professors have been employed at three or more universities in an average. The number of research institutes juniors at universities have been employed at is somewhat lower in all countries. Certainly their shorter time of employment has not given them the same opportunities for changing research institutes as professors have had. Looking at the mobility between other institutions of higher education, German academics are about in the average of the countries surveyed. The relatively short contract duration for junior academics and the culture of appreciation for mobility support academic mobility between institutions of higher education.

While in some countries academics have been employed at as many institutions outside academia as at academic institutions, German academics show less mobility outside academia than between institutions of higher education. This might be caused by the fact that in most disciplines it is relatively difficult to enter university after phases of employment outside academia since only few extra-academic employers offer the opportunity for conducting research. The total number of employers that academics have been employed at since their first degree is slightly higher in Germany than in most countries but lower than in Italy, US, and Australia (Table 14.10).

Table 14.10 Number of institutions where senior and junior academics at universities and other higher education institutions in selected advanced countries have been employed at since the award of the first degree in 2007

	AU	UK	US	CA	PT	NO	IT	DE	JP
HEIs or research institutes									
University seniors	3.1	3	3.5	3.2	3	3.3	4.3	3.9	2.3
University juniors	2.6	2.3	2.9	2.9	2.4	2.4	2.6	2.1	1.8
Other HEI seniors	3	.	3.1	.	5.1	2.9	.	2.8	2.7
Other HEI juniors	3.2	.	2.9	.	2.4	3	.	2.4	2.3
Other institutions (including self-employment)									
University seniors	2.6	3.1	3	3.3	2.9	2.6	3.1	2.6	1.8
University juniors	2	2.9	3.1	3.2	2.8	2.7	2.3	2.2	2
Other HEI seniors	2.2	.	3.5	.	5.7	2.4	.	2.9	2.3
Other HEI juniors	2.1	.	3.5	.	2.3	3.5	.	1.5	2.3
Total									
University seniors	4.8	4.3	4.7	4.3	4.3	4.1	5.5	4.5	2.5
University juniors	3.8	3.4	4.4	4.2	3.7	3.1	3.9	2.6	2.4
Other HEI seniors	4.5	.	4.3	.	8.2	3.5	.	4.1	2.9
Other HEI juniors	4.4	.	4.5	.	3.5	4.6	.	3.1	2.9

Source: CAP Survey 2007/2008 (May 2010 data)
Question A5: By how many institutions have you been employed since your first degree?

14.4 The Work Situation

As shown above, the academic profession in Germany is quite heterogeneous as far as the biography, the career and the employment situation is concerned. Differences are substantial between junior und senior academics, and differences between academics at universities and other institutions are by no means trivial. It is interesting to note as well whether the actual work life actually differs and whether these differences are exceptional in Germany in an international comparison. Three themes are selected here for this analysis: the proportion of the work time spent on research, the perceived quality of facilities and resources for their academic work, and the influence they believe to have on key academic policies within their institution of higher education.

14.4.1 Time Spent on Research

In Germany, junior academics at universities spend on average a higher proportion of their work time on research than senior academics. As Table 14.11 shows, junior academics at German universities estimate in 2007 that they spend 55 % of their time on research while the respective proportion is 38 % on the part of university professors.

This difference reflects a different understanding of the work assignments. Junior academics on a position at a German university, as a rule, have a lower teaching load than university professors, because they are expected to qualify for full academic responsibilities primarily through research (see Teichler and Bracht 2006; Teichler 2008). Moreover, junior academics might be viewed as not qualified enough for teaching key courses to students before being awarded a doctorate. As only a small proportion of junior academics have the chance of becoming a professor, at least half of them uses the employment at university as a qualification time only, that does not focus on an academic career, but rather on a career at the non-academic labour

Table 14.11 Proportion of time spent on research by senior and junior academics at universities and other higher education institutions in selected advanced countries in 2007 (percentage*)

	AU	UK	US	CA	PT	FI	NO	IT	DE	JP
University seniors	42	35	38	41	35	37	39	46	38	44
University juniors	41	43	37	46	40	60	69	48	55	42
Other HEI seniors	38	.	25	.	35	21	40	.	26	40
Other HEI juniors	29	.	28	.	37	19	61	.	24	36

Source: CAP Survey 2007/2008 (May 2010 data)
CAP survey: Question B1: Considering all your professional work, how many hours do you spend in a typical week onm each of the following activities
*Estimate for the whole year based on 60 % of the responses when classes are in session and 40 % when classes are not in session

market. For junior academics with this perspective, not teaching experience is relevant, but a fast completion of the doctoral thesis.

Table 14.11 shows as well that the proportion of time spent on research by junior academics in Germany is higher than that spent by senior academics in the majority of other countries. In these countries, junior academics have similar tasks as university professors, and they are expected to grow into a professor's role gradually. However, an even clear distinction between the roles of junior and senior academics than in Germany can be noted for Finland and Norway – two countries with a similar Humboldtian interpretation of a dominant role of research at universities as in Germany (see Arimoto 2010).

Moreover, Table 14.11 shows that in 2007 professors at German *Fachhochschulen* spend almost two-thirds as much of their working time on research as professors at German universities. This great difference can be viewed as surprising, if we take into consideration that the teaching load of the former is more than twice as high as that of the latter. However, it underscores that professors at other institutions of higher education in Germany are clearly less active in research than university professors but more active in teaching. This, however, is not unique, but rather applies for Finland and the United States as well. In contrast, there is not such a clear distinction of the extent of research activities between professors at universities and professors at other higher education institutions in the remaining four countries for which information is presented in Table 14.11.

14.4.2 Assessment of Facilities and Resources for Work

As junior academics at German universities are considered to be in a long formative process without full responsibilities and powers, one can certainly assume that they are not in a similar position as university professors in assuring themselves that they have a satisfactory access to facilities and resources instrumental for their academic work. As a consequence, we could have expected that junior academics at German universities rate the facilities and resources available for their academic work less favourably than university professors.

Table 14.12, however, shows that the average ratings are strikingly similar in those respects. Of course, ratings have a subjective element, but it is obvious that junior academics at German universities have a similar assessment of their resources relevant for academic work as university professors.

Table 14.12 shows that professors at German *Fachhochschulen* consider the resources that are relevant for teaching – classrooms, technical support, laboratories – as somewhat better than professors at universities. In contrast, the former consider their research equipment and research funding as well as all staff support – secretarial support, teaching support staff, research support staff – as clearly inferior.

It should be mentioned here that the assessment of institutional recourses does have an impact on the overall job satisfaction. A respective analysis has been under-

Table 14.12 Assessment of institution's support for one's own work by senior and junior academics at German universities and other higher education institutions in 2007 (arithmetic mean*)

	University professors	University juniors	FH professors
Classrooms	2.9	2.6	2.4
Technology for teaching	2.7	2.6	2.5
Laboratories	2.7	2.6	2.5
Research equipment and instruments	2.6	2.5	3.2
Computer facilities	2.3	2.3	2.1
Library facilities and services	2.7	2.6	2.6
Your office space	2.2	2.5	2.5
Secretarial support	2.8	2.8	3.5
Telecommunication (Internet, networks, telephones)	2.0	1.8	2.0
Teaching support staff	3.3	3.3	4.0
Research support staff	3.3	3.2	4.4
Research funding	3.6	3.4	4.2

Source: CAP Survey 2007/2008 (May 2010 data)
Question B3: At this institution, how would you evaluate each of the following facilities, resources, or personnel you need to support your work?
*On a scale of responses from 1 = Excellent to 5 = Poor

taken separately among academics in Germany for the humanities and social sciences on the one hand and on the other hand for science and engineering, because the latter are more strongly dependent on certain resources. In the case of university professors in the humanities and social sciences, a weak correlation is visible between classrooms, technology for teaching, secretarial support as well as research support staff on the one hand and to overall job satisfaction on the other hand. Among university professors of science and engineering, a stronger influence could be observed on the part of classrooms, laboratories, research equipment and instruments, teaching support staff, research support staff and research funding. In the case of junior academics across disciplines, all aspects of facilities and resources contribute clearly to overall satisfaction (Höhle and Teichler 2013).

Table 14.13 provides comparative information in an aggregated way across the various facilities and resources addressed. First, we note that the overall assessments clearly vary by country. Among university professors in 2007, the situation looks quite good (2.3) in Finland and less so in Japan (2.9). Second, the ratings are slightly more positive in 2007 than in the predecessor study of 1992 on average; these findings contradict the widespread view that academic working conditions at universities have deteriorated over the years in the wake of higher education expansion.

In comparing the ratings according to the respondents' status, we note that junior academics at universities in most countries, in the same way as in Germany, consider the facilities and resources for their academic work as favourable as university

Table 14.13 Assessment of the infrastructure for academic work by senior and junior academics at universities and other institutions of higher education in selected advanced countries in 1992 and 2007 (arithmetic mean*)

	AU	UK	US	PT	FI	NO	IT	DE	JP
University seniors 2007	2.5	2.8	2.5	2.6	2.3	2.5	2.8	2.6	2.9
University seniors 1992	2.7	2.7	2.4	.	.	.	.	2.6	3.2
University juniors 2007	2.6	2.8	2.5	2.9	2.2	2.4	3.0	2.6	3.0
University juniors 1992	2.7	2.8	2.7	.	.	.	.	2.6	3.2
Other HEIs seniors 2007	2.6	.	2.4	2.7	2.3	2.6	.	2.7	.
Other HEIs seniors 1992	.	.	.	.	.	.	.	2.9	.

Source: Carnegie Survey and CAP Survey 2007/2008 (May 2010 data)
CAP survey: Question B3: At this institution, how would you evaluate each of the following facilities, resources, or personnel you need to support your work?
*On a scale or responses from 1 = Excellent to 5 = Poor, average of eight items: Classroom, technology for teaching, laboratories, research equipment and instruments, computer facilities, library facilities, your office space, and secretarial support

professors. Only junior academics in Italy and Portugal judge their access to resources less favourably.

Finally, we note that academics at other institutions of higher education rate the facilities and resources on average similar to the academics at universities. The aggregate data, however, do not disclose that there are similar differences as in Germany in some countries as shown in Table 14.13, namely a more favourable rating of resources for teaching and a less favourable rating of the resources for research on the part of the academics at other institutions of higher education.

14.4.3 Perceived Personal Influence

Certainly, we can expect that university professors in Germany have a substantially higher influence at their institutions than junior academics. In fact, university professors in Germany state in 2007 clearly more strongly than junior academics that they have an influence in helping to shape key academic policies. As Table 14.14 shows, this difference is most pronounced with regard to the faculty level, but considerable less with regard to the institutional level.

Table 14.14 shows as well that professors at German *Fachhochschulen* considered themselves equally influential as professors at universities in 2007 on average. There does not seem to be any principal difference among the professors of the institutional types in power and decision-making.

A further – surprising – finding presented in Table 14.14 deserves attention. It is generally assumed that the power of management within higher education institutions has increased in most countries over the 1990s and the first decade of the twenty-first century at the expense of the professors' influence (cf. Locke et al. 2011). In contrast to this expectation, German academics surveyed in 2007 consis-

Table 14.14 Personal influence on academic policies perceived by senior and junior academics at German universities and other higher education institutions in 1992 and 2007 (arithmetic mean*)

	2007			1992		
	Univ. seniors	Univ juniors	FH	Univ. seniors	Univ juniors	FH
Department level	1.6	2.6	1.8	1.9	3.0	2.3
Faculty level	2.3	3.5	2.1	2.6	3.7	2.3
Institutional level	3.1	3.8	3.1	3.4	3.9	3.4

Source: Carnegie Survey and CAP Survey 2007/2008 (May 2010 data)
CAP survey: Question E2: How influential are you, personally, in helping to shape key academic policies?
*On a scale of responses from 1 = Very influential to 4 = Not at all influential

tently perceive a stronger influence on their institution, faculty and department than their predecessors in 1992 (see also Teichler 2011). – It should be noted that this trend does not hold true for all countries included both in the 1992 and 2007: while, for example, academics in the United States noted an increase of their influence as well, academics in the United Kingdom and Japan stated a decrease.

In comparison across countries we note that the superiority of university professors' influence in comparison to junior academics' influence is most pronounced in Germany. As Table 14.15 shows, the average ratings of influence according to three levels addressed differs in Germany between professors and junior academics by one scale point in contrast to only 0.4–0.7 in the other countries addressed in 2007. The gap of power and influence between senior and junior academics seems to be clearly wider in Germany.

Actually, German university professors considered themselves more influential at their institution than university professors of the other countries for which information is provided in Table 14.15. This holds true for the departmental level and the faculty levels, while university professors from some other countries rated their influence on the university level similarly as German university professors. German professors at other institutions of higher education only rate their influence somewhat above their peers in other countries, and German junior staff hardly differ from the average of their peers across countries in the rating of their influence.

14.5 Academics' Views and Values

Finally, we might assume that the differences between junior and senior academics and as well as between academics at universities and other institutions of higher education, which could be observed in Germany as regards the career and employment conditions, as well put their stamp on the academics' views and values.

Here after, select aspects of the views and values of academics in Germany will be analyzed according to career stage and institutional type: do they differ strikingly in their preferences, in their views of the tasks of scholarship and research, and in their job satisfaction? Again, we ask whether differences are more pronounced than in most comparable countries comprised in the CAP study.

Table 14.15 Personal influence on academic policies perceived by senior and junior academics at universities and other higher education institutions in selected advanced countries in 2007 (arithmetic mean*)

	AU	UK	US	CA	PT	FI	NO	IT	DE	JP
University seniors										
Department level	2.0	2.4	1.9	2.2	2.1	2.1	2.5	2.5	1.6	2.5
Faculty level	2.7	3.0	2.6	2.8	2.7	2.7	3.2	2.9	2.3	2.9
Institutional level	3.3	3.5	3.2	3.3	3.2	3.1	3.4	3.4	3.1	3.5
University juniors										
Department level	2.9	3.0	2.5	2.5	2.8	2.8	3.2	3.1	2.6	3.2
Faculty level	3.6	3.4	3.1	3.3	3.2	3.5	3.7	3.6	3.5	3.4
Institutional level	3.8	3.7	3.6	3.8	3.6	3.6	3.8	3.8	3.8	3.9
Other HEI seniors										
Department level	2.0	.	1.7	.	1.9	2.1	2.4	.	1.8	2.5
Faculty level	2.4	.	2.3	.	2.5	2.7	3.0	.	2.1	2.9
Institutional level	3.0	.	2.9	.	2.5	2.9	3.2	.	3.1	3.3
Other HEI juniors										
Department level	2.7	.	2.2	.	2.7	2.6	2.9	.	2.2	3.2
Faculty level	3.4	.	2.9	.	3.3	3.1	3.2	.	2.9	3.5
Institutional level	3.7	.	3.4	.	3.5	3.4	3.5	.	3.0	3.7

Source: CAP Survey 2007/2008 (May 2010 data)
Question E2: How influential are you, personally, in helping to shape key academic policies?
*On a scale of responses from 1 = Very influential to 4 = Not at all influential

14.5.1 Preferences for Teaching and Research

The Humboldtian approach to universities in Germany is often interpreted as putting a strong emphasis on research (see Arimoto 2010). As German higher education is generally viewed as being clearly shaped by the Humboldtian 'Idea' of the university, one could expect a comparatively high proportion of German university professors to describe their preferences to lean strongly towards research. One should bear in mind, however, that this notion of the Humboldtian approach might be a misunderstanding: Wilhelm von Humboldt had advocated the 'unity of teaching and research', and many experts believe that this is reflected in today's German university by a relatively uniform system of 8–9 weekly teaching hours for university professors with only very rare exceptions – a teaching load suggesting that professors are expected to spend about the same amount of time for research and teaching (Teichler 2009). Table 14.17 (cf. below) does not confirm the assumption of German university professors being exceptionally research-oriented. They are close to the average of the countries addressed here.

In the framework of this analysis, however, it is interesting to examine how preferences for research vary among German academics according to status group and type of higher education institution. As regards status group, Table 14.16 shows that one third of junior academics at German universities express a clear preference for research in 2007. In contrast, very few university professors state a clear preference for research; instead, they more often appreciate a linkage of teaching and research

Table 14.16 Preferences for teaching and research among senior and junior academics at German universities and other higher education institutions, 1992 and 2007 (percentage)

	2007			1992		
	University seniors	University juniors	Other HEI seniors	University seniors	University juniors	Other HEI seniors
Primarily in teaching	5	7	42	5	6	29
In both, leaning towards teaching	20	22	35	30	22	49
In both, leaning towards research	63	38	22	59	46	21
Primarily in research	12	33	1	7	26	1
Total	100	100	100	100	100	100

Source: Carnegie Survey and CAP Survey 2007/2008 (May 2010 data)
Question B2: Regarding your own preferences, do your interests lie *primarily* in teaching or in research?

while leaning towards research. This difference can be explained by the fact already pointed out that a substantial proportion of junior academics in Germany are paid by research funds and are solely in charge of research. Taking this phenomenon into account, we might argue that preferences for research and teaching are much more similar between junior and senior academics in Germany than one could have expected.

Table 14.17 shows that preferences for research are only substantially higher in 2007 among junior academics than among senior academics in Finland, Germany and Norway. These are exactly those countries where the time spent on research is relatively higher among junior than among senior academics at universities. Altogether, we can argue that the differences by country and status groups regarding the preferences for teaching and research are similar to the differences in the allocation of the work time.

In some countries academics at other institutions of higher education differ from academics at universities in terms of a clearly stronger preference for teaching, while in other countries the respective difference is small. Again we note the same pattern as previously regarding the actual proportion of time spent on research: both preferences and work time are pronounced in favour of teaching at other institutions of higher education in Finland, Germany and the United States, while differences are small in the other four countries addressed. Germany is not an exception in this respect, but rather one of the groups of former countries.

Table 14.17 Preferences for teaching and research among senior and junior academics at universities and other higher education institutions in selected advanced countries, 2007 (percentage)

	AU	UK	US	CA	PT	FI	NO	IT	DE	JP
University seniors										
Primarily in teaching	1	8	13	7	3	2	2	2	5	3
Both, leaning towards teaching	12	23	32	25	36	19	18	22	20	13
Both, leaning towards research	50	48	40	54	48	61	60	67	63	63
Primarily in research	38	22	15	14	14	18	20	10	12	22
Total	100	100	100	100	100	100	100	100	100	100
University juniors										
Primarily in teaching	7	9	33	4	6	8	2	3	7	4
Both, leaning towards teaching	23	24	22	26	41	12	14	22	22	13
Both, leaning towards research	37	37	34	54	47	39	44	60	38	64
Primarily in research	32	30	11	16	6	42	40	15	33	19
Total	100	100	100	100	100	100	100	100	100	100
Other HEI seniors										
Primarily in teaching	16	.	42	.	43	49	22	.	35	26
Both, leaning towards teaching	54	.	16	.	37	26	58	.	22	55
Both, leaning towards research	26	.	0	.	9	10	17	.	1	12
Primarily in research	3	.	41	.	11	15	3	.	42	6
Total	100		100		100	100	100	100	100	100
Other HEI juniors										
Primarily in teaching	11	.	35	.	13	49	5	.	46	8
Both, leaning towards teaching	34	.	41	.	44	36	8	.	17	24
Both, leaning towards research	37	.	23	.	37	11	51	.	19	56
Primarily in research	18	.	1	.	7	4	37	.	18	12
Total	100	.	100	.	100	100	100	.	100	100

Source: CAP Survey 2007/2008 (May 2010 data)
Question B2: Regarding your own preferences, do your interests lie *primarily* in teaching or in research?

However, there is a striking finding, as far as time budget is concerned. The proportion of time spent on research by academics at German *Fachhochschulen* has increased somewhat from 1992 to 2007. In contrast, preferences of academics of these institutions have moved during that period, as Table 14.17 shows, somewhat towards teaching.

14.5.2 Views Regarding Research and Scholarship

In the survey 'The Changing Academic Profession' have been asked about their views of the character of scholarship and research. Table 14.18 shows that university professors differ to a considerable extent by country in the proportion of emphasizing original research: in 2007 the proportion of those emphasizing original research ranges from 92 % in Norway to 68 % in Finland. Similarly, application of academic knowledge varies between 65 % in Norway and 86 % in Finland, synthesizing findings is emphasized by between 45 % in Italy and 85 % in Japan, and finally societal relevance between 50 % in Norway and 73 % in Portugal. In this framework, university professors in Germany express resembling more or less the average.

Table 14.18 Views on research and scholarship among senior and junior academics at universities and other higher education institutions in selected advanced countries, 2007 (percentage)

	AU	UK	US	CA	PT	FI	NO	IT	DE	JP
University seniors										
Original research+	76	68	74	77	81	68	92	73	83	83
Application++	67	69	81	65	77	74	59	57	62	72
Synthesis+++	71	68	72	61	59	69	56	45	61	85
Social relevance++++	67	58	63	55	73	65	50	62	61	62
University juniors										
Original research	69	66	61	76	74	61	86	74	69	73
Application	75	65	76	66	76	84	65	64	67	74
Synthesis	65	63	64	58	62	59	61	49	67	86
Social relevance	60	59	68	64	73	58	51	61	44	67
Other HEI seniors										
Original research	68	.	57	.	80	54	88	.	56	77
Application	67	.	83	.	88	92	56	.	87	78
Synthesis	67	.	71	.	57	75	68	.	72	80
Social relevance	71	.	67	.	66	78	56	.	63	65
Other HEI juniors										
Original research	59	.	62	.	64	35	81	.	49	72
Application	78	.	80	.	80	91	70	.	84	78
Synthesis	68	.	67	.	47	54	63	.	83	75
Social relevance	69	.	66	.	68	64	74	.	75	77

Source: CAP Survey 2007/2008 (May 2010 data)
Question B5: Please indicate your views on the following …
Responses 1 and 2 on a scale from 1 = Strongly agree to 5 = Strongly disagree
+ Original research: 'Scholarship is best defined as the preparation and presentation of findings on original research'
++ Application: 'Scholarship includes the application of academic knowledge in real-life settings'
+++ Synthesis of findings: 'Scholarships includes the preparation of reports that synthesize the major trends and findings in my field'
++++ Societal relevance: 'Faculty in my discipline have a professional obligation to apply their knowledge to problems in society'

In the framework of this analysis it is striking to note that German junior academics at universities differ in their views from university professors of their country more strongly than junior academics from university professors in all other countries addressed in Table 14.18. On average across the four categories, the responses differ in Germany by 10 % in contrast to between 3 and 8 % in the other countries. Notably, junior academics at Germany universities consider scholarship less frequently as original research (69 % versus 83 %) and less frequently as socially relevant (44 % versus 61 %) than university professors in Germany.

In comparing the responses of professors from other institutions of higher education to those from university professors, we note most striking differences in Germany and almost as striking differences in Finland. In both countries, professors at other institutions, as one might expect, emphasize original research to a lesser extent (56 % versus 83 % in Germany and 54 % versus 68 % in Finland) and application of knowledge more strongly (87 % versus 62 % in Germany and 92 % vs. 74 % in Finland) than university professors. In the other countries the views of research and scholarships differ only moderately between academics at universities and those at other institutions of higher education.

14.5.3 Overall Job Satisfaction

In an analysis, how the academics view their profession, the overall professional satisfaction is an indispensible component. In the CAP questionnaire, the question was posed: 'How would you rate your overall satisfaction with your current job?'. A scale of responses has been provided from 1 = 'very satisfied' to 5 = 'very dissatisfied'. In 2007, 71 % of professors at German universities state that they are satisfied with their current job (responses 1 and 2 on a fire-point scale). As Table 14.19 shows, the responses by university professors are more or less equally positive among

Table 14.19 Overall job satisfaction of senior and junior academics at universities and other higher education institutions in selected advanced countries, 1992 and 2007 (arithmetic mean*)

	AU	UK	US	CA	PT	FI	NO	IT	DE	JP
Universities										
Seniors 2007	2.2	2.6	2.3	2.1	2.3	2.2	2.2	2.1	2.2	2.1
Seniors 1992	2.3	2.5	2.3	.	.	.	.	.	2.4	2.4
Juniors 2007	2.6	2.8	2.3	2.1	2.6	2.3	2.3	2.4	2.5	2.2
Juniors 1992	2.8	2.8	2.7	.	.	.	.	.	3.1	2.5
Other HEIs										
Seniors 2007	2.2	.	2.2	.	2.4	2.2	2.3	.	2.3	2.4
Seniors 1992	2.8	2.9	2.5	.	.	.	.	.	2.7	2.6
Juniors 2007	2.8	.	2.3	.	2.9	2.3	2.3	.	2.7	2.6

Source: Carnegie Survey and CAP Survey 2007/2008 (May 2010)
CAP Survey: Question B6: 'How would you rate your overall satisfaction with your current job?'
On a scale from 1 = 'Very satisfied' to 5 = 'very dissatisfied'

university professors in nine countries (ranging from 2.1 to 2.3 on average). Only those in the United Kingdom make less positive statements (49 % rating 1 or 2).

Junior academics in Germany express a lower degree of job satisfaction. 55 % of the junior academics at German universities state that they were satisfied with their current job, i.e. 16 % less than university professors. The respective arithmetic means are 2.5 as compared to 2.2. A similar difference between the junior and senior ratings can be observed as well in Australia, Italy and Portugal, while the job satisfaction between junior and senior academics hardly differs in the remaining six countries.

Senior academics at other institutions of higher education are almost as satisfied as university professors. In the case of Germany, 66 % percent of the former state that they are satisfied as compared to 71 % of the latter, and the mean score is 2.3 as compared to 2.2. We note similar small differences in other countries.

It is interesting to note that the overall job satisfaction has increased from 1992, when the same question has been posed in the Carnegie study, to 2007. This holds true for most countries and thereby to a higher extent among junior academics at universities as well as academics at other institutions of higher education than among university professors.

The highest increase of overall job satisfaction during this period is stated, as Table 14.19 shows, by junior academics at German universities. The mean has increased by 0.6: While only 32 % have stated that they were satisfied in 1992, 55 % do so in 2007.

Still, this value is still not high. The enormous increase of job satisfaction among junior academics in Germany is surprising since working conditions – mainly the extent of fixed-term contracts, low salaries and uncertain academic career perspectives – have hardly changed during the period observed measured and concerns expressed for example by academic unions sound as if nothing has changed. Also, data available do not confirm the possible hypothesis that job satisfaction is high nowadays among academics in science and engineering fields which seem to be the winners of the current discourse on 'knowledge society' and 'knowledge economy': representatives of these disciplines are only to a moderate extent more satisfied in 2007 than those of other disciplines among university professors (mean of 2.16 as compared to 2.32), more or less to the same extent satisfied among junior academics at universities (2.53 and to 2.58), and even less satisfied among academics of other institutions of higher education (2.39 versus 2.18).

What has changed, though, are three issues: a stronger emphasis in the public debate that the future of the country rests on higher education and research, a stronger emphasis on competition and individual responsibility for one's success, as well as some measures of underscoring a more independent and responsible role of junior academics at the career stage between the doctorate and the professorial positions. Last but not least, the expectations towards working conditions might have generally changed: as some experts suggest, precarious or instable working conditions are becoming more and more the normal standard (see Beck 1986). Finally, an analysis of factors contributing to overall job satisfaction of both senior and junior academics in Germany shows that they consider the increased power of university management very positively (Höhle and Teichler 2013) – an increase, however, as pointed out above, that leave room for academics' substantial influence.

14.6 Conclusion

An analysis of the biography, career and employment situation of academics and their relationships to the work situation as well as the views of academics in Germany has to take into consideration from the outset that the academic profession in Germany tends to be viewed as quite heterogeneous. It is widely assumed that there is a higher status gap between junior and senior academics at universities in Germany than in other countries. Also, the functions of other institutions of higher education, i.e. *Fachhochschulen*, seem to be so different from that of universities that the academic profession in these sectors may have little in common.

As regards institutional type, we note that professors at *Fachhochschulen* in Germany spend less time on research and have a more applied understanding of research – differences that are set by the functional distinction of the institutional types. It is also set that academics at *Fachhochschulen* differ in their career between the doctorate and the appointment to a professorship. Moreover, an income advantage of more than 10 % on the part of university is to be expected according the existing pay scales. In those respects, Germany does not seem to be an exception: a similar degree of differences can be found in a few other countries as well. Professors of both types of institutions look similar in Germany, however, as regards their perceived influence on key decisions within the higher education institutions and their overall job satisfaction.

As regards career status, we note, in fact, that the number of junior academics per senior academics in Germany is quite high; this underscores that high selectivity throughout the junior career stages is a matter of procedure. The proportion of junior academics on short-term contracts is among the highest in the advanced countries for which corresponding data are available, and also part-time employment is quite frequent. In all those respects German higher education seems to be the or close to the extreme end of selectivity and job uncertainty. Moreover, the ratio of the income of junior academics of that of senior academics at German university is very low. One has to bear in mind, though, that junior academics are already employed in Germany at the doctoral stage (about half of all doctoral candidates are university employees) – a fact which seemingly increases the differences of employment conditions between junior and senior academic staff in Germany in comparison to those countries where most doctoral candidates are not yet employed by their university, but rather viewed as doctoral students.

The status gap clearly comes into play in notions how influential junior and senior academics are in key decisions at their institution. It is reflected as well in the fact that junior academics at German universities spend a higher proportion of their time on research and more often have a clear preference for research; this shows that junior academics in Germany should spend a long time on enhancing their research capabilities before eventually becoming full-fledged academics. Junior academics also differ to a substantial extent from senior academics at German universities in their views of the tasks of scholarship and research; these differences, however, cannot be explained with the widely assumed status gap. In contrast, junior academics

at German universities rate the facilities and resources for their academic work as positively as university professors. Finally, they are similarly less satisfied than senior academics with their current job as junior academics in other countries on average.

All this suggests that academics in Germany are – viewed in an international comparison – relatively heterogeneous in employment and career, work situation as well as views and values. But in some respects, the differences noted are small and do not confirm the conventional wisdom of clear dividing lines between status groups and institutional types. A definite conclusion is not possible on the basis of these findings whether academics in Germany can be viewed best as single academic profession or as an umbrella term for distinct conditions, activities and values.

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Chapter 15
Changing Academic Career Trajectories and Identity/Commitment of Academics in Japan

Akira Arimoto

15.1 Introduction

Modernization of the academia has the development from category of ascription and particularism to that of achievement and universalism. Theoretically, it is thought that shift from a pre-modern society with a structure oriented to the category of ascription and particularism to a modern society with a structure oriented to that of achievement and universalism. In other words, it is transformation from type III to type I (Fig. 15.1).

In the case of Japanese society, for example, in the Edo era (1603–1867) where a sort of 'cast system' worked individual's birth defined his/her lifelong career. An individual who was born in the class of peasant could not promote to the position of an individual who was born in the class of worrier, even if he/she had excellent talent and ability. Value of particularim was sorely working there while value of universalism was hardly working. The former is called as a closed society and the latter is an opened society.

Modern society is an opened society where such value and custom are theoretically considered to be not working. However, real society may have different pictures based on the actual degree of their working. For example, as far as treatment of women is concerned, it is likely to be fairly different among societies, although they should be treated equally as men according to the value of achievement. Treatment particular to a closed society is still working persistently even in an opened society to a considerable degree.

Making an international comparison of the academic profession from such framework, we can discriminate the advanced system and the developing system to a considerable degree (Arimoto 2008).

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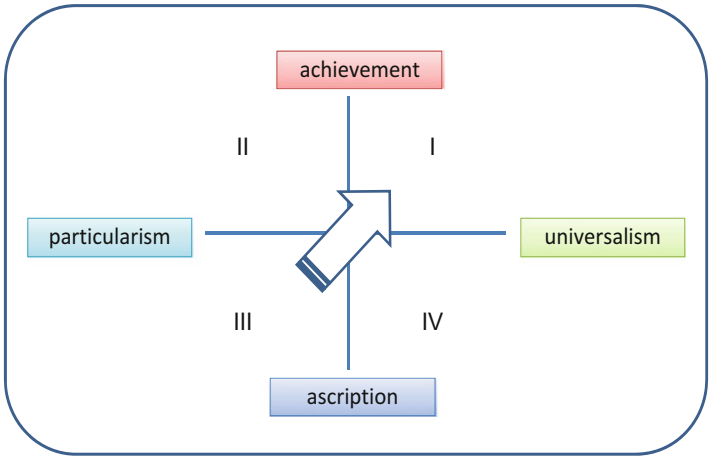

Fig. 15.1 Modernization of academia and academic profession

From such context, this paper analyze the main theme on the basis of the Carnegie survey conducted in 1992 and especially the CAP survey conducted in 2007, intending to clarify the international characteristics of the Japanese academic profession (Altbach 1996; Arimoto and Ehara 1996). Considerations are focused on the following topics.

- Comparing with the academics' age structure in the world, what kind of trend and meaning do Japanese academics have?
- Given the fact that more frequent mobility of the Japanese academics increased in the past 15 years, did the 'compulsory mobility' of the closed structure cause it or not?
- The academia had a permanent employment and seniority system parallel with the whole society for a long time. Is the academia conforming to the society's recent change to reform such system? Is the contract system which was introduced into the academia in 1997 successful or not?
- Contrary to the academia in the West, the counterpart in Japan introduced the policy of keeping inbreeding to the extent that the top leading institutions reached to 100 % share of inbreeding. Is the policy changing in recent years? How is its relationship with academic productivity?
- Has the worsening environment to academia affected the academics' consciousness and identity and so changed their academic careers?

15.2 Methodology

Two explanations are needed in relation to methodology to be used in this paper. First, this is a sociological study of academic profession from a standpoint of international comparison, focusing on a framework based on knowledge functions derivative from sociology of science (Merton 1973; Arimoto 1987; Becher and Parry 2007) (Fig. 15.2).

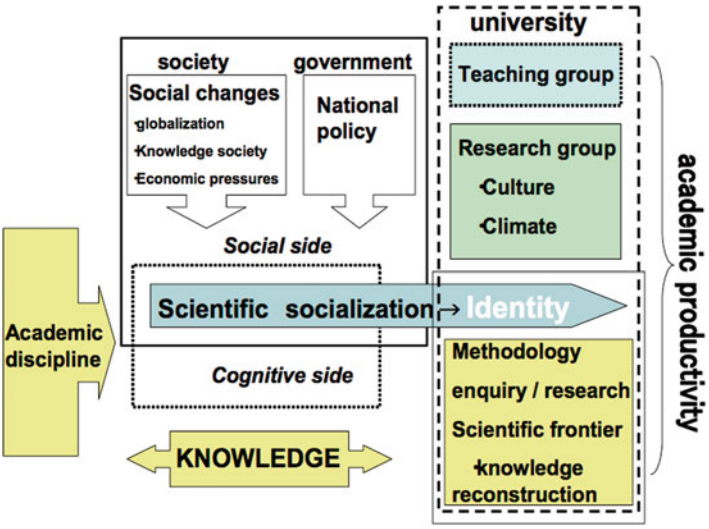

Fig. 15.2 Knowledge functions

Academia is considered to be the modernized society with the opened structure than the closed structure, owing to research functions which cultivate new paradigm of scientific frontier by way of knowledge reconstruction. In the 15 years from 1992 to 2007, academia has seemingly changed from a 'knowledge community' to a 'knowledge enterprise', from an 'academic guild' to an 'academic bureaucracy' and also to an 'academic capitalism' (Slaughter and Leslie 1997; Asonuma 2010). In addition to this, it has changed from a place of basic science with Merton's CUDOS to a place of an applied and development science with Ziman's PLACE and from 'mode1' to 'mode 2'(Merton 1973; Ziman 1994; Gibbons et al. 1994). Academia seems to be changing gradually and ceaselessly from 'university' to 'higher education' and even to 'tertiary education' after 'post-secondary education'.

As a result the academic profession is now facing many value conflicts as it seeks to construct a vision for itself as well as a vision for academia. A problem of changing academics and academic career is related to the environmental changes caused by the effects from society, national government, and knowledge. Many recent studies of the academic profession have underlined these problems (Slaughter and Leslie 1997; Kogan and Teichler 2007; Locke and Teichler 2007; Arimoto 2010a; INCHER-Kassel 2009).

Under this environment, academics conduct academic work consisting of research, teaching, and service on the basis of knowledge, especially academic discipline, inside academia, in the form of university or tertiary education, in order to enhance more academic productivity. At the same time, the academic career in individual country must be formed by not only such environmental changes but also academics' own identity and commitment by way of scientific socialization through social side and cognitive side.

Table 15.1 18 Samples of CAP Survey

AR	Argentina	825
AU	Australia	1022
BR	Brazil	1197
CA	Canada	980
CH	China	3507
FI	Finland	1417
DE	Germany	1317
HK	Hong Kong	797
IT	Italy	1690
JP	Japan	1391
KR	South Korea	900
MY	Malaysia	1202
MX	Mexico	1815
NO	Norway	989
PT	Portugal	874
ZA	South Africa	716
UK	United Kingdom	1356
US	United States of America	1135
	Total	23,130

Source: CAP Survey 2007/2008

Second, this paper focuses analysis of academic career by country on the basis of the 2007 CAP survey. Table 15.1 shows data for participating 18 countries (exactly speaking 17 countries: Argentina, Australia, Brazil, Canada, China, Finland, Germany, Italy, Japan, Korea, Malaysia, Mexico, Norway, Portugal, South Africa, the U.K., the U.S. and 1 region: Hong Kong) in the CAP survey with the total sampled number of academics responding (23,130) and also the number of responses from each country.

15.3 Meaning of the Age Structure

15.3.1 Aging

As Fig. 15.3 (Age of respondents) shows, the total age composition is divided into two categories: less than 50 (67.1 %) and more than 51 (32.9 %). The former's typical countries are China (90.6 %), Malaysia (85.7 %), Portugal (58.7 %), while the latter's typical countries are Japan (56.0 %) and the U.S. (55.1 %).

As for Japan, the phenomenon of increasing aging professors is bringing about at least two important problems. First, it has brought a social problem of many jobless post-doctors, although most of them want to become academics (National Institute for Educational Policy Research, The Physical Society of Japan 2009).

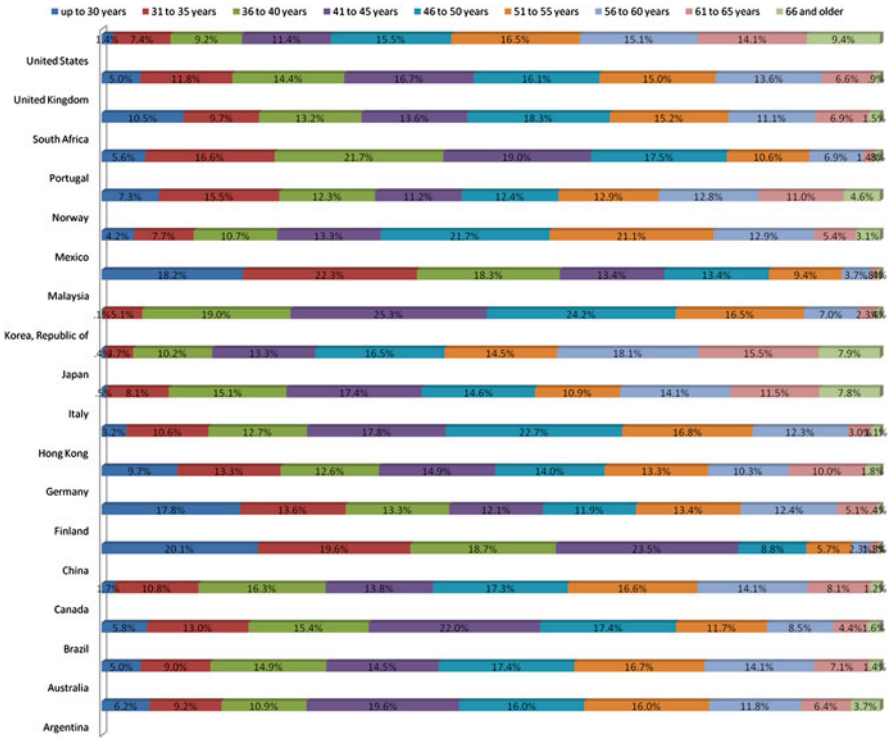

Fig. 15.3 Age of respondents (Source: CAP Survey 2007/2008)

Second, it is related to the fact that the composition of academic staff is a reverse-pyramid with the full professors much more than the other staff. This structure is inclined to produce full professors without competition in the process of recruitment and promotion (Ushiogi 2009).

15.3.2 Permanent Employment System

The permanent employment system is thought to be working as a cause of aging structure, because academics can be secured just like tenure truck from their recruitment around 30 years old until retirement so that the scrap and build of academics population are hardly occur. They can enjoy academic careers for about 35~40 years protected by a permanent employment and seniority system. It is testified in the fact that mobility ratio is still low, although the contract system was introduced in 1997 and as a result mobility increased today compared to that in 1992 when the Carnegie survey was conducted (Arimoto and Ehara 1996; Arimoto 2008). Academics who were recruited at the age of more or less than 30 years old, apt to enjoy under permanent and seniority system a long academic career until retirement age consisting of various age such as 60, 63, 65, 70 years old.

15.3.3 Pyramid and Reverse-Pyramid Structure

In addition to the cause of permanent and employment system bringing about the problem of jobless young academics, we can point out reverse-pyramid structure of academic population in which the ratio of full professors is higher than that of lower positions. In the current survey, Mexico and Japan are highest in all participating countries. About 40 years ago, Michiya Shinbori pointed out that characteristic of academic population between the West and Japan: the pyramid structure and the chimney structure (Shinbori 1965; Shinbori and Arimoto 1969). The former had fewer full professors compared to larger lower positions and the latter had same size of full professors and lower positions.

However, Morikazu Ushisogi pointed out recently that the chimney type shifted to the reverse-pyramid type instead of transforming to the pyramid type. The reason of this fact is caused by the fact that Japan introduced in the past 40 years a policy of proceeding increase of professorship, while the other countries introduced the policy of controlling the number of professorship (Ushiogi 2009).

Japan's policy has two meanings: one is unemployment of younger generation academics because of controlling of junior academics' recruitment; the other is less competitiveness of academics because of less competitiveness in the process of promotion from junior academic staff to full professorship.

15.3.4 Problem of Gender

As Fig. 15.4 (Gender) reveals, share of the female academics in Japan (9.0 %) is the smallest, followed by Korea (18.4 %), Germany (27.5 %), Hong Kong (32.7 %), and Italy (33.2 %). However, the real share of female academics is more or less than 18 % and so the result of the CAP survey is lower than the real share probably owing to sampling bias. We have to pay attention to such sampling bias but even so fewer shares in an international perspective are not very different from the old description.

The average share of female in the OECD countries is more or less than 30 %, and so how to raise the share to that level at least is an important problem of higher education policy. Of course, there is a national movement related to the gender problem for about 15 years since 1998 when a law of male and female partnership society was enacted (Naikakuhu 2009).

15.3.5 Effects of Role-Division Society

It is true to say that the female status has not improved well thus far since then. At the same time, it is also true that the status of female academics has not improved sufficiently as expected. This fact seems to reflect the fact that in Japan a role-division

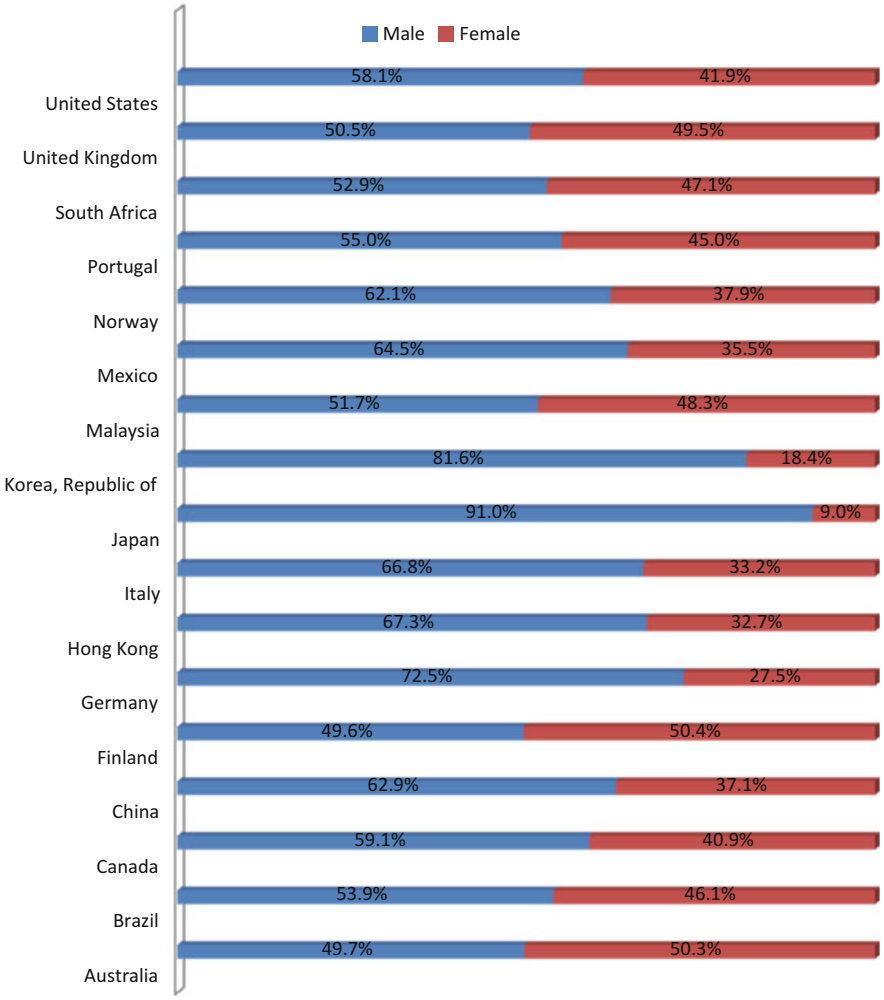

Fig. 15.4 Gender (Source: CAP Survey 2007/2008)

system has worked for many years, and it is not exceptional in academia. In this context, particularism based on ascription is still working in academia where universalism based on achievement is expected to work well than outside academia.

15.3.6 Mobility and Academic Productivity

As Fig. 15.5 (Number of higher education institutions or research institutes) shows, the academics in the world belong approximately two institutions (1.94) during their academic career. The U.S. (2.62) is the highest, followed by Argentina (2.57),

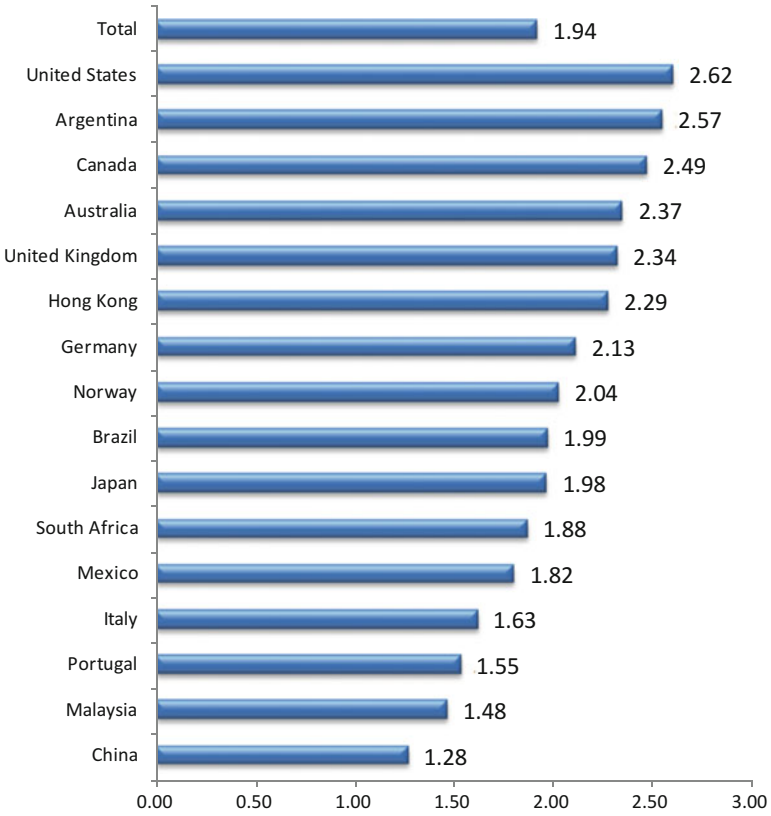

Fig. 15.5 Number of higher education institutions or research institutes (Source: CAP Survey 2007/2008)

and Canada (2.49), while China (1.28) is the lowest, followed by Malaysia (1.48) and Portugal (1.55).

As for Japan, the academics belonged only 1.5 institutions in the 1992 survey (Arimoto and Ehara 1996), while they belong as many as 1.94 in the 2007 survey. Nevertheless, it is true to notify that they still remain at the middle level in an international perspective.

Why Japan is still low compared with other countries, especially with the U.S., Argentina, etc? Perhaps, the permanent and seniority society mentioned above must be related to this trend. In this context, asking reason why it is turning to increasing trend recently is more interesting than asking reason why it is still low.

The reason of slightly increasing mobility ratio is that it was caused by the fact that establishing new institutions have become popular in these 15 years and there occurred the compulsory mobility. Statistically, the number of universities and colleges in 1990 were 507, while that in 2007 were 756. Within 17 years as many as 49 universities and colleges increased with new academic posts (MEXT 2010).

In addition to this, introduction of a 'contract system' since 1997 mentioned above, necessarily forced academics, especially younger academics, to mobile more frequently among institutions. In fact, great differences are remarkable between academics below 55 years old and those more than 56 years old (Fig. 15.6). For example, younger academics up to 40 increased from 1.41 in 1992 to 1.98 in 2007, while older academics 56–60 increased from 1.56 to 1.85 in the same term.

15.3.7 Relationship Between Mobility and Academic Productivity

Accordingly, question is what kind of effects have such increase of mobility brought on enhancement of academic productivity. A hypothesis adopted here is that an opened structure stimulates more mobility in order to cause higher productivity. With regard to this question, a Japanese research has brought about a result that correlation is recognized in the disciplines of humanities and social sciences, while no correlation in the disciplines of sciences, engineering, and medicine (Urata 2011).

The result that the correlation between mobility and academic productivity has not necessarily recognized seems to deny the hypothesis that there is correlation between opened academic society and academic productivity.

The hypothesis is not necessarily deniable, because there are two sides in mobility: physical mobility; reference group. Reference group is related to 'invisible college' as pointed out by Diana Crane (Crane 1972). Against this concept, physical mobility is related to 'visible college'. The correlation between mobility and academic productivity must be promoted if 'invisible college' type of referene group functions well, even though 'visible college' type of physical mobility is small and sluggish. As Fig. 15.7 shows, combination of two types consist of three patterns: opened type (++); intermediate 1 = visible type (+−); intermediate 2 = invisible type (−+); closed type (−−).

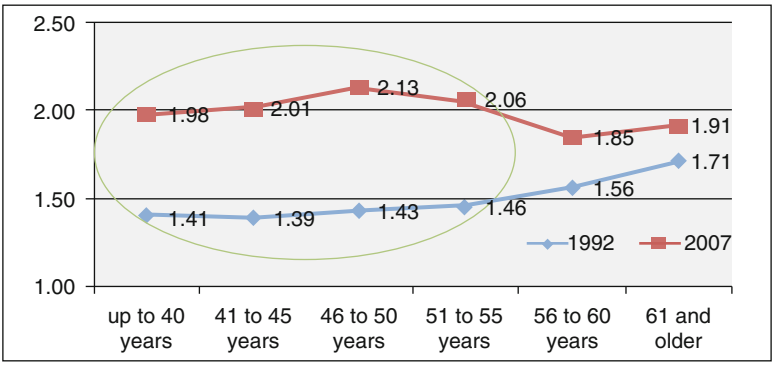

Fig. 15.6 Difference of number of higher education institutions by age (1992 and 2007) (Sources: Carnegie Survey 1992 and CAP Survey 2007/2008)

Fig. 15.7 Combination of two types

Type	Physical mobility	Reference group
Opened type	+	+
Intermediate 1 (visible type)	+	−
Intermediate 2 (invisible type)	−	+
Closed type	−	−

In Japan, intermediate 1 (visible type) is now glowing as discussed previously in relation to compulsory mobility. As a result, this kind of mobility does not have positive relationship with active academic productivity. Accordingly, development to opened type (++) is desired to be realized.

15.3.8 Problem of High Inbreeding

It is not deniable that in Japan, academic marketplace has shifted from the closed structure to the opened structure to a considerable degree, since mobility ratio has improved to some extent. However, the fact that the closed structure is formed not only by mobility but also by academic nepotism is still remained. Prestigious institutions intend to recruit ceaselessly their own graduates in academic staff. This is a phenomenon of inbreeding (Shinbori 1965; Shinbori and Arimoto 1969; Arimoto 1981). According to a recent survey, institutions such as Tokyo, Kyoto, Waseda, and Keio, still have high inbreeding ratio of more than 70 % (Yamanoi 2007) to have high academic productivity, especially research productivity, correlation between the closed structure and academic productivity is high in spite of the hypothesis of denying such correlation. As far as this fact is concerned, the closed structure is not necessarily decrease productivity.

But this is considered to be as an phenomenon particular to Japan, or to Asian countries including Korea and China, if we pay attention to that inbreeding as well as academic nepotism is controlled in the main research universities in the U.S., where are now forming COE in the world (Arimoto 1981, 2011).

15.3.9 Academic's Mobility to an Academic Position in Another Country

Figure 15.8 (To an Academic position in another country) shows the academic's intention to move to an academic position in another country. Japanese academics' ratio of 'yes' (17.9 %) is sixth lowest, following to China (3.9 %), Argentina (6.1 %),

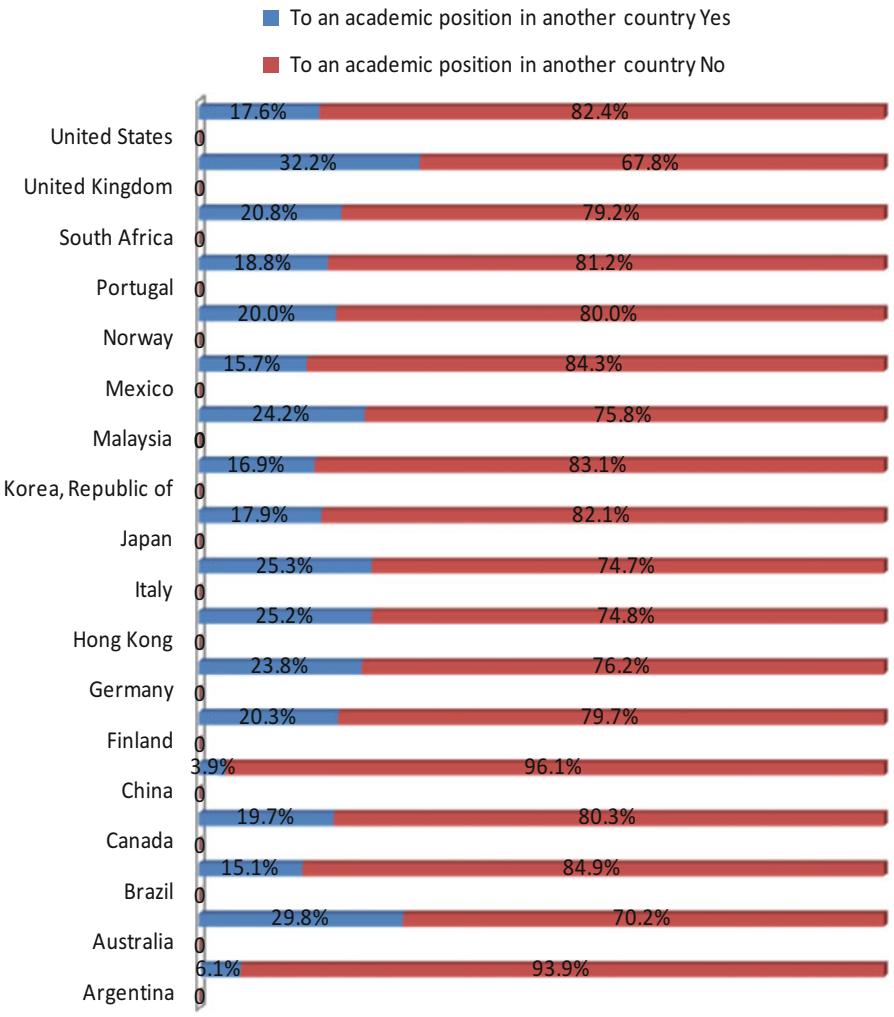

Fig. 15.8 To an academic position in another country (Source: CAP Survey 2007/2008)

Brazil (15.1 %), Mexico (15.7 %), and Korea (16.9 %). On the other hand, some countries such as the U.K. (32.2 %), Australia (29.8 %), Italy (25.3 %), and Hong Kong (25.2 %) are fairly high.

Academic marketplace of Japan has been closed thus far, since few academics moved to academic positions in other countries. Why? Several conditions are thought to interrupt frequent mobility: high accommodations of the domestic academic marketplace; low academic mobility ratio among the domestic institutions; a lifelong employment system; the language and geographic barriers; high productivity of Ph.D. in the domestic institutions; working of academic nepotism and inbreeding.

However, the share of 'yes' is probably increasing in Japan by the following reasons. First reason is high unemployment ratio of post-doctors. One of resolutions for it is finding employment in another country.

Second reason is worsening work environment. The result of survey clearly reveals Japanese academics' high complaints to the worsening work environment of academia and their intentions to move to other institutions as will be discussed below. Contrary to conceived mobility, actual mobility has been not frequent thus far but there is possibility of increase in the future.

Third reason is increasing globalization. The closed structure is expected to change towards encouraging an international exchange of academics as well as students in accordance with the globalization of higher education.

15.4 Work Environment of Academia

15.4.1 Low Positive Assessment of Work Environment

15.4.1.1 Japan's Low Positive Assessment of Work Environment

Table 15.2 made an international comparison of facilities (classroom, laboratories, and library facilities and services), equipments (technology for teaching, computer facilities, and telecommunications such as internet, networks, and telephones), and teaching support staff. The total average score of 18 participating countries are as follows: classroom (49.7 %), laboratories (36.9 %), library (55.2 %), technology for teaching (49.8 %), computer facilities (53.3 %), telecommunications (62.3 %), and teaching support staff (28.1 %).

It is interesting to underline that positive assessment to work environment does not express high total average among participating countries. The countries, which shows low positive assessment, are as follows: classroom (the UK, Argentina, and Japan), laboratories (Argentina, Japan, and Korea), library (Japan and Korea), technology for teaching (Argentina, Japan, and Italy), computer facilities (Argentina, Japan, and Brazil), telecommunications (Argentina, China, and Brazil), and teaching support staff (Japan, Italy, and Korea). Especially, Japan and Argentina are ranked low in many items.

15.4.1.2 Ratio of Public Expenditure to Higher Education in GDP by Country

The countries with low ratio of public expenditure to higher education in GDP are Japan, Korea, and Italy (OECD 2008). These results are correlated to the countries with low positive assessment of work environment previously discussed. Based on these facts, it is necessary for these countries to raise GDP-ratio of the public expenditure to higher education so as to improve work environment. Especially this

Table 15.2 Assestment of work environment by country

Country	Classroom	Laboratory	Library	Technology for teaching	Computer facilities	Tele-communi-cations	Teaching support staff
USA	51.7	38.3	59.9	61.9	62.5	71.5	32.4
Canada	51.1	31.3	63.4	61.3	55.1	71.4	32.5
UK	34.1	39.1	51.4	41.5	45.8	53	37.7
Germany	45.8	51.7	48.9	52.1	65.1	81.1	25.2
Italy	37.6	29.4	54.2	36.8	44.9	64.9	16.1
Portugal	52.6	38.6	51.8	51	46.8	61.1	25.6
Finland	73.9	54.9	72.9	71.9	70.7	81.2	42.6
Norway	57.9	43.6	74.3	59.8	74	85	19.9
Australia	47.8	43.7	78.7	51.7	64.9	71.5	29.7
Mexico	42.1	40	51.9	46.3	53.8	54.5	20.2
Brazil	50.1	39.8	46.8	41.3	44.1	52.5	31.6
Argentina	29.9	22.5	36.9	31.5	36.4	38.5	25.8
South Africa	38.9	35.9	65.9	37.8	57.8	68.7	28.2
Malaysia	44.4	37.9	53	45.5	55	56.4	29
Hong Kong	67.8	49.6	82.4	71.8	75.3	79.5	35.6
China	64.3	40.3	47.5	56	47.4	42.2	39.9
South Korea	48.1	25.5	43.1	44.3	50.4	73.6	13.7
Japan	33.1	25.4	39	32.1	37	53.2	9.2
Total	49.7	36.9	55.2	49.8	53.3	62.3	28.1

Source: CAP Survey 2007/2008

recommendation is adaptable to Japan that has both low GDP-ratio and low positive assessment despite that its GDP occupies the second place in the world.

15.4.1.3 High Job Satisfaction

How would you rate your overall satisfaction with your current job? To this question on overall satisfaction with current job, the totals by country of those who said they were satisfied or very satisfied are shown in the figure (Fig. 15.9).

According to this figure, satisfaction is highest in Mexico (87 %), followed by South Korea (77 %), Canada (74 %), Norway and Japan (69 %), and Finland (67 %), etc. Satisfaction is lowest in the U.K. (48 %), followed by South Africa (51 %), Portugal (53 %), Australia (55 %), China (58 %), etc. It is low in the countries such as the U.K. (47 %), South Africa (51 %), and Portugal (53 %). Considering that the average response rate all countries is 65 %, Japan belongs to the group of countries expressing average levels of high satisfaction with their current job in spite of low work environment. As a result, academics are estimated to have high satisfaction to academic profession.

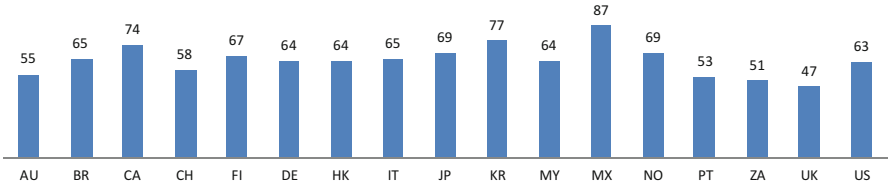

Fig. 15.9 Job satisfaction (Source: CAP Survey 2007/2008; Question B6: How would you rate your overall satisfaction with your current job?)

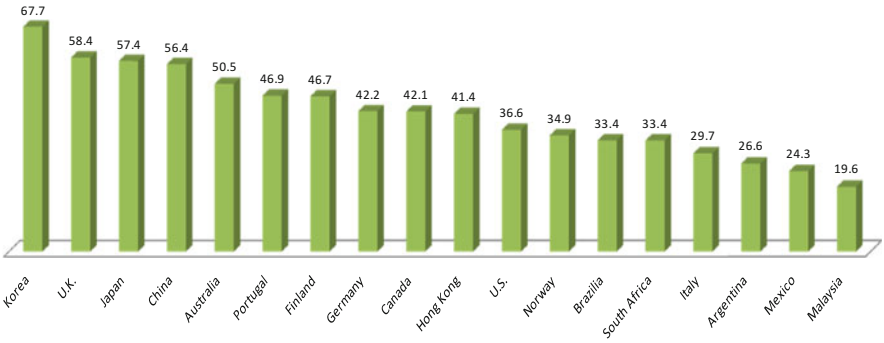

Fig. 15.10 Degree of personal strain by country (percentages) (Source: CAP Survey 2007/2008)

Fifteen years ago, Japanese academic staff showed the highest stress in the world, as reflected in their response to the question: 'My job is a source of considerable personal strain.' In 2007, the proportion who indicates stress in their job is essentially the same as 15 years ago (Arimoto and Ehara 1996) (Fig. 15.8). This figure (57 %) makes Japan ranked third after South Korea (68 %) and the U.K. (58 %) (Fig. 15.10).

Analysis of the responses shows the following groups are most likely to complain of stress: female faculty; faculty who are spending more time on service and administration; and faculty who complain about low salaries and poor working environments (Arimoto 2008).

Given these facts, why they rate highly their overall satisfaction with their current job in spite of low work environment and high stress? The reason for it is probably made due to their high conformity to disciplines they specialize.

15.4.2 High Conformity to Discipline

As Fig. 15.11 (sense of belonging) shows, academics' sense of belonging to their own discipline is very high. Average score of such sense of belonging in 18 countries is 4.45 and highest among three items of discipline, faculty and department, and institution. We can recognize high score in some countries such as Mexico

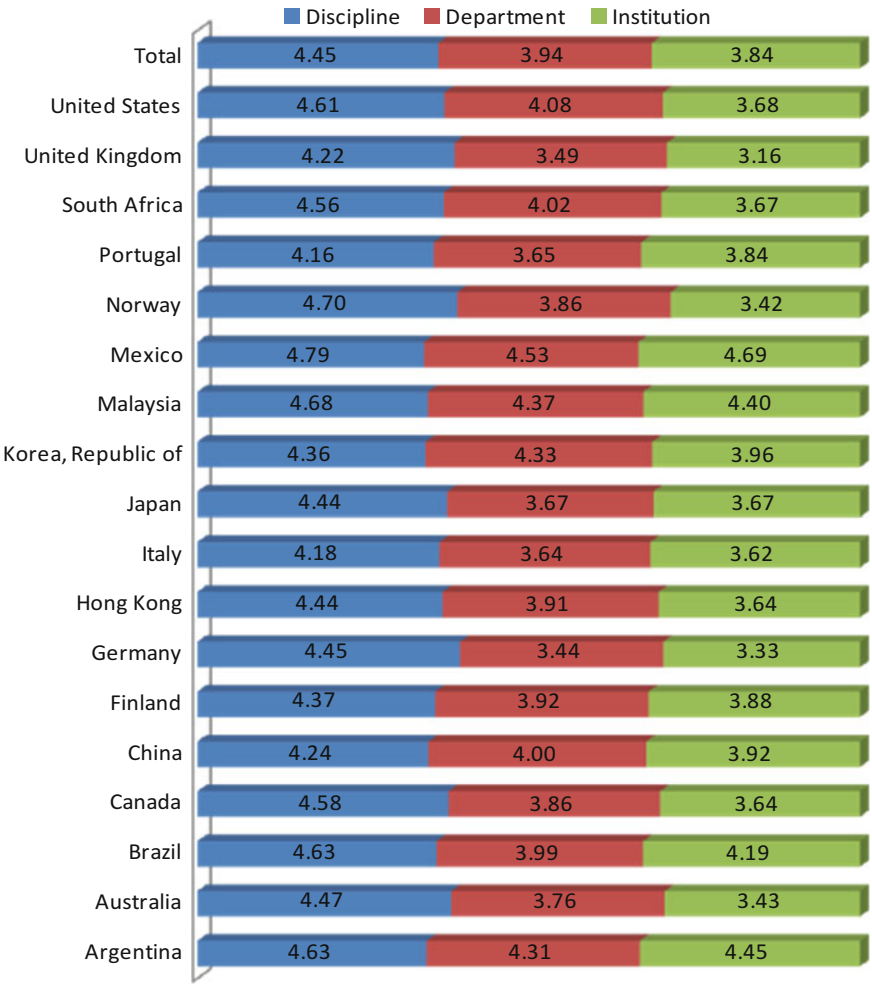

Fig. 15.11 Sense of belonging (average) (Source: CAP Survey 2007/2008)

(4.79), Norway (4.70), and Malaysia (4.68), and low score in some countries such as Portugal (4.16), Italy (4.18), and China (4.24). As for Japan, the score (4.44) is almost same as the average.

15.4.3 Increase of Nonconformity to Institution

As Fig. 15.11 shows, sense of belonging to institution (3.84) is lowest among three items. Three countries such as the UK (3.16), Norway (3.42), and Australia (4.43) are low considerably.

Japan's score (3.67) is lower than the average, and the score this time has become lower compared to that in 1992. The reasons for it are probably made due to worsening work environment during these years: decrease of research time; increase of administration and teaching time; decrease of academic freedom and faculty autonomy.

There is direct correlation between 'perceived changes in working conditions in higher education' and 'considered major changes in Job' (Table 15.3). Question: 'Since you started your career, have the overall working conditions in higher education and research institute improved or declined?' In Japan, the score of 'working conditions in higher education was deteriorated' (64 %) is the worst one next to U.K. (68 %), far below the total average score (37 %). Question: 'Within the last 5 years, have you considered a major change in your job?' One of Japanese academics' answer to this question is 'to an academic position in another higher education within the country' and score (50 %) is higher than the average (28 %) and even the highest among all academics in 18 countries.

As Fig. 15.12 (to work outside higher education) shows that in Japan's share of 'yes' (22.4 %) is 4th lowest following to China (6.9 %), Hong Kong (15.6 %), and Italy (18.9 %). The Japanese academics want to work inside higher education. On the other hand, the academics in some countries such as Korea (46.2 %), Australia (45.4 %), the U.K. (41.9 %), Finland (41.6 %), and Norway (35.0 %) want to work outside higher education.

Table 15.3 Working conditions and job change by country

	Working conditions		
Country	Improved	Deteriorated	Job change to another HE institute
China	62	11	12
Malaysia	56	11	42
Argentina	55	13	10
Korea	51	13	27
Mexico	49	20	32
U. S.	37	24	45
Portugal	37	41	18
Brazil	37	44	28
Hong Kong	30	44	27
Finland	27	35	20
Canada	22	40	30
South Africa	21	48	29
U. K.	15	68	40
Norway	14	47	27
Japan	13	64	50
Italy	13	56	16
Germany	11	60	37
Australia	10	59	39
Total	33	37	28

Source: CAP Survey 2007/2008

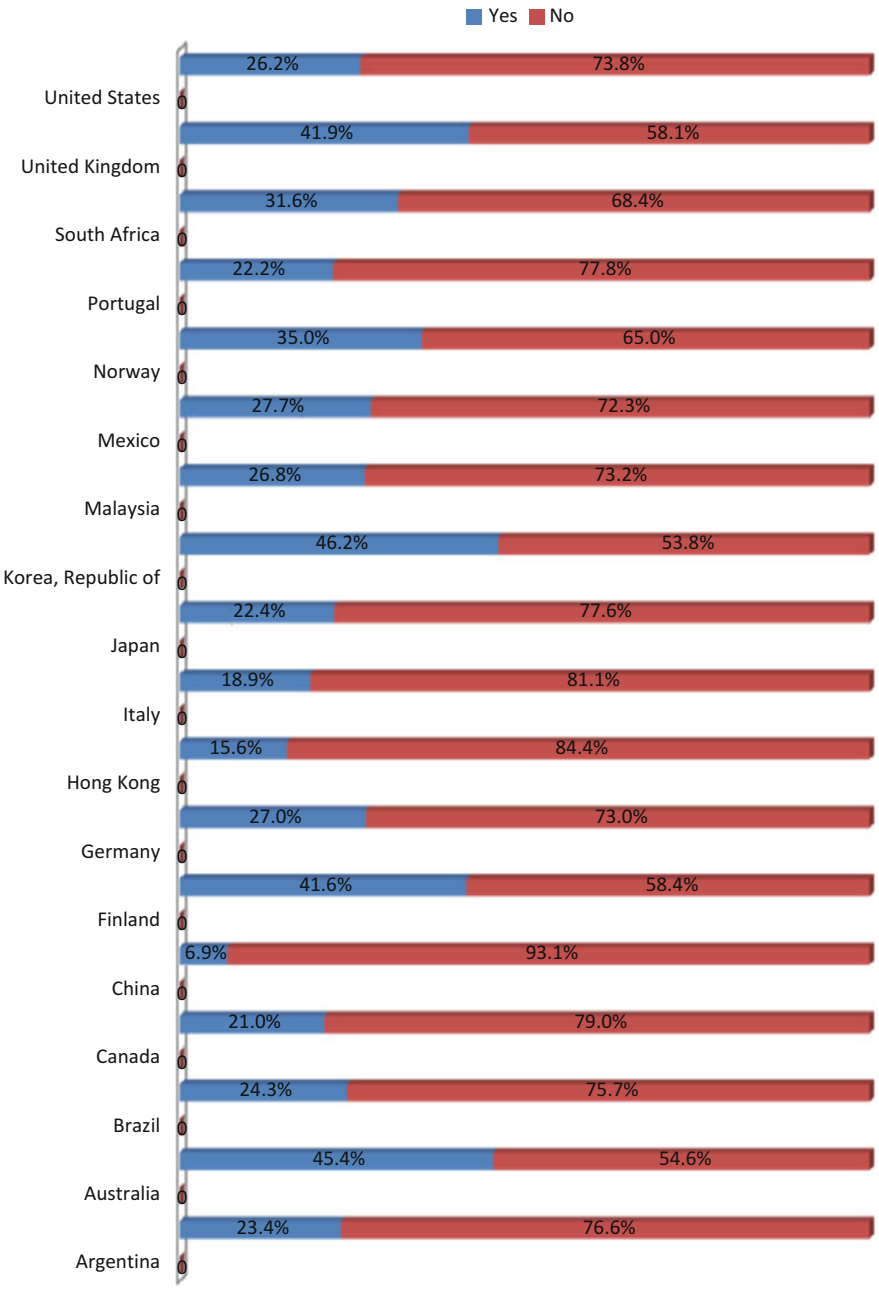

Fig. 15.12 To work outside education (Source: CAP Survey 2007/2008)

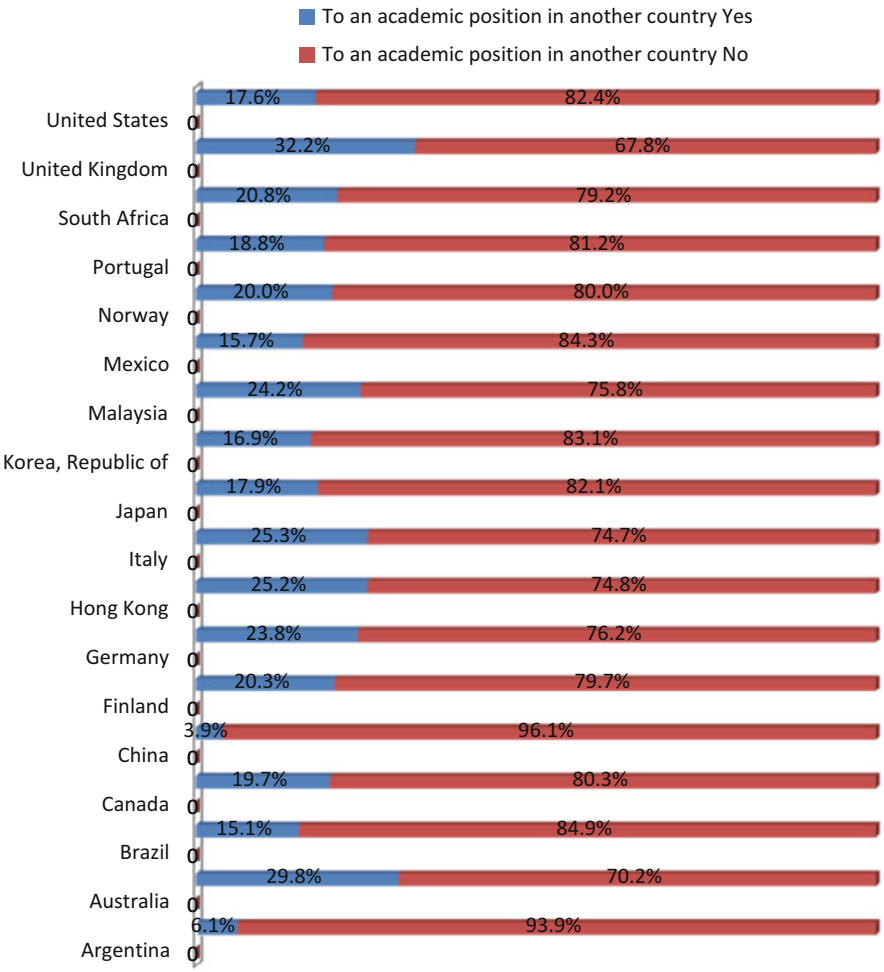

Fig. 15.13 To an academic position in another country (Source: CAP Survey 2007/2008)

As Fig. 15.13 shows, the positive response to 'to an academic position in another country' is high in some countries such as the U.K. (32.2 %), Australia (29.8 %), Italy (25.3 %), and Hong Kong (25.2 %), while it is low in some countries such as China (3.9 %) and Argentina (6.1 %). Japanese academics' response (17.9 %) is sixth lowest and so they do not have active intention to go another country.

If we see the trend with focus on age, 'yes' are higher among academics below 40 years old (62.5 %), 41~50 years old (61.7 %), and 51 years old and above (40.3 %). Latent mobility is higher in academics below 50 years old, especially those below 40 years old (Table 15.4).

Accordingly, Japanese academic wants to go an academic position in another institution by the reason of deteriorated working conditions, even though he/she has

Table 15.4 Consideration of major change in job

	Age		
Consideration of major change in job	~40	41~50	51~
To an academic position in another higher education/research institute within the coutry	65.2 %	61.7 %	40.3 %
To an academic position in another country	22.2 %	24.6 %	13.0 %
To work outside higher education/research institutes	27.8 %	31.8 %	15.7 %

Source: CAP Survey 2007/2008

high sense of belonging to discipline. Deteriorating sense of belonging to institution suggests declining passion to teaching instead of high passion to research in the time of rising universalization.

15.5 Possibility of Keeping High Academic Productivity

As we noted in our discussion of the knowledge functions and the academic profession's vision, academic productivity forms a very important aspect of academic work, because increased productivity in both teaching and research is presumed to enhance social development. In this context, productivity is a barometer of academics' activities in all systems in the CAP study, even if those in countries participating in the two surveys are working in somewhat different environments.

In the past 3 years, academic staff produced on average the following products (Table 15.5):

The top ten countries in the total ranking of 18 countries are as follows: (1) Korea, (2) Japan, (3) Italy, (4) China, (5) Germany, (6) Hong Kong, (7) Norway, (8) Argentina, (9) Canada, and (10) Malaysia.

As for the total ranking, Korea has achieved a major breakthrough from 11th in 1992 to top in 2007. It is difficult to understand why the U.S. and the U.K. are near the bottom despite their frequent recognition as leaders in research productivity (Ben-David 1977; LondonTimes 2008).

Japan was ranked first in the 1992 survey (Arimoto and Ehara 1996). So Japan has almost kept its leading position over the past 15 years, even though its overall working conditions have declined, as discussed above. Incidentally, in the 1992 survey, the top 10 consist of Japan, the Netherlands, Sweden, Germany, Chile, Israel, the U.S., the U.K., Brazil, and Australia (Arimoto and Ehara 1996, p. 172).

As Table 15.5 shows, the Japanese academics have high productivity in 'scholarly books you authored or co-authored' (1.59) (ranking 1) and other items. In the case of article, for example, countries ranked at the top level are as follows: Korea, Hong Kong, Japan, Germany, and Italy. On the other hand, countries ranked at the bottom level are as follows: Mexico, South Africa, Malaysia, U.S. and Brazil.

Japanese academics have been active in terms of academic productivity. Why is it possible? Probably, following some reasons are working manifestly and latently.

Table 15.5 Publication: responses to the question 'How many scholarly contributions have you completed in the past 3 years'

Country	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 scholarly conference		Professional article written for a newspaper or magazine	
Argentina	0.55	7	0.34	9	4.76	13	2.38	2	7.06	6	1.56	6
Australia	0.28	17	0.19	18	7.07	7	1.47	8	5.72	9	1.31	11
Brazil	0.55	8	0.25	13	4.60	14	1.54	7	5.54	12	1.62	4
Canada	0.35	16	0.29	12	6.24	9	1.45	10	8.15	1	1.36	9
China	0.85	4	0.84	1	8.54	6	1.43	11	2.58	18	0.97	16
Finland	0.38	15	0.33	10	5.24	12	1.18	15	4.50	15	1.34	10
Germany	0.41	13	0.49	4	8.74	4	2.32	3	6.92	7	1.80	3
Hong Kong	0.48	10	0.44	7	9.55	2	1.61	6	7.50	4	2.25	1
Italy	0.96	3	0.49	5	8.63	5	1.64	5	7.53	3	1.87	2
Japan	1.59	1	0.46	6	9.23	3	1.21	13	5.43	13	1.02	15
Republic of Korea	1.03	2	0.67	2	10.64	1	2.63	1	7.59	2	1.06	14
Malaysia	0.67	6	0.34	8	4.24	16	1.46	9	5.60	11	1.07	13
Mexico	0.41	12	0.21	16	2.34	18	0.60	18	3.14	17	1.27	12
Norway	0.54	9	0.25	14	5.3	10	0.72	17	4.80	14	1.59	5
Portugal	0.70	5	0.58	3	5.52	11	1.75	4	7.40	5	1.38	8
South Africa	0.44	11	0.19	17	2.97	17	0.81	16	3.43	16	0.64	18
United Kingdom	0.39	14	0.31	11	6.30	8	1.23	12	5.84	8	0.79	17
United States	0.23	18	0.23	15	4.28	15	1.20	14	5.65	10	1.48	7
Total	0.63		0.41		6.52		1.46		5.63		1.36	

Source: CAP Survey 2007/2008
Left side score is the mean values. Right side score is rank
'Scholarly books authored or co-authored' (0.61);
'Scholarly books edited or co-edited' (0.21);
'Articles published in an academic book or journal' (4.26);
'Research report/monograph written for a funded project' (1.11);
'Paper presented at a scholarly conference' (5.41);
'Professional article written for a newspaper or magazine' (0.89);
'Patent secured on a process or invention' (0.08);
'Computer program written for public use' (0.10);
'Artistic work performed or exhibited' (1.23);
'Video or film produced' (0.16);
'Others' (0.59)

- Climate of research orientation: As it has become clear in the past and present surveys, a traditional climate of research orientation is internalized strongly in Japanese academics.
- Function of reward system stressing research in the process of recruitment and promotion; In the process of recruitment, much weight is put on both quality and quantity of research production. Academics' research orientation is still strong under the reward system of research orientation, even though weight of teaching, service, and administration and management is increasing recently.
- Characteristics of graduate school with focus on research than teaching: Academics are trained in the doctoral course in graduate school which has a tradition al climate stressing research orientation.
- Effects of emerging World ranking of universities and colleges: International trend of focusing on research productivity more than teaching productivity of academia as well as academics is emerging since 2003 when London Times and Shanghai Jiao Tong University initiated World ranking of universities and colleges (Kobayashi et al. 2005; Arimoto 2011).
- National policy of Science and Technology Basic Law and relevant COE project, which stress research orientation of academics as well as institutions: Science and Technology Plan was introduced in 1996 and based on it a series of national projects of COE have been introduced since 2002 to form internationally competitive institutions in terms of research productivity (MEXT 2007; Arimoto 2010a, b, c).

However, these traditions and climates are now reconsidered as is seen in the following reasons.

First, introducing the national policy that stresses FD (faculty development) for teaching orientation more than research orientation, there is possibility of declining research productivity in future (Arimoto 2005, 2010a, b, c). This trend will be accelerated by increasing universalization process of higher education, in which more than 50 % of 18-year old cohort is expected to enter universities and college. At the same time, necessity of many academics' commitment into teaching will bring about separation of research oriented university and teaching oriented university.

Second, related to the first, time allocation to research decline, while that to teaching increase. 'How many hours do you spend on the following activities in a week?' In Japan, the average hours per week spent on all academic activities is 51.0 h which is among the highest reported along with countries such Korea (53.2), Canada (50.6), and Hong Kong (49.6), while the average is relatively small in the group of countries with the lowest proportions, such as Norway (35.3), Malaysia (36.5), Argentina (38.1), and Brazil (38.8) (Table 15.6).

Japan's academic staff spend 10.2 h per a day if we divide 51.0 (hours) by 5 (days), while their counterparts in Norway spend only 7.1 h. In other words, the latter spends only 70 % of the former. It is interesting to note that the hours per week in Japan spent on teaching increased slightly from 19.8 h in 1992 to 20.4 h in 2007 while those spent on research decreased from 21.6 to 16.6 h during the same period.

Table 15.6 Time budget when classes are in session (arithmetic mean of hours per week)

	AR	AU	BR	CA	CH	FI	DE	HK	IT	JP	KR	MY	MX	NO	PT	ZA	UK	US	Avg
Teaching	13.9	17.6	19.8	20	19.7	17.2	13.9	19.8	18.8	20.4	21.1	17.7	22	12.7	20	20.7	18.3	21.2	18.6
Research	15.9	13.9	9.3	15.9	13.6	16	15.6	14.9	17.4	16.6	18.1	7.3	8	13.8	12.7	8.8	12.1	12.4	13.5
Service	2.4	2.9	2.5	3.8	1.9	2.2	5.7	3.7	2.5	3.9	4.7	2.6	1.7	1.6	1.4	2.7	1.6	4.6	2.9
Administration	3.7	8.8	4.6	8.1	5.1	4.8	4.5	7.9	4.3	7.2	6	6.5	8.6	4.9	4.8	7	9.6	7.7	6.3
Other academic activities	2.3	2.9	2.5	2.8	1.6	2.3	3.1	3.3	2.4	2.8	3.3	2.4	4.1	2.3	2.2	2.7	3.2	2.8	2.7
Total hours per week	38.1	46.2	38.8	50.6	41.9	42.5	42.9	49.6	45.4	51	53.2	36.5	44.4	35.3	41.1	41.9	44.8	48.7	44

Source: CAP Survey 2007/2008

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

Table 15.7a Preference in teaching/research 2007 (%)

	AR	AU	BR	CA	CH	FI	DE	HK	IT	JP	KR	MY	MX	NO	PT	ZA	UK	US	Avg
Primarily in teaching	7	7	8	6	11	14	12	9	2	5	3	8	21	2	8	18	11	22	10
In both, but leaning towards teaching	36	23	42	26	42	21	21	28	21	23	29	44	40	15	39	35	22	34	30
In both, but leaning towards research	50	40	42	54	42	38	43	52	65	57	61	43	34	54	44	37	44	34	46
Primarily in research	7	29	7	14	5	27	24	11	12	14	7	4	5	29	9	9	23	10	14

Table 15.7b Preference in teaching/research 1992 (%)

	AR	AU	BR	CA	CH	FI	DE	HK	IT	JP	KR	MY	MX	NO	PT	ZA	UK	US	Avg
Primarily in teaching			20					11		4	5		14				12	27	13
In both, but leaning towards teaching			42					35		24	40		45				32	37	36
In both, but leaning towards research			36					46		55	50		37				40	30	42
Primarily in research			3					8		17	6		4				15	7	9

Source: CAP Survey 2007/2008

Third, international competition for promoting academic productivity is becoming severer and in this context Japan's status is forced to decline relatively. In fact, within 15 years many countries shifted to research orientation so as to promote research productivity. 'Regarding your own preferences, do your interests lie primarily in teaching or in research?' For the 18 countries in the 2007 CAP survey, the average response rate for the items on professional interests is as follows: 'Primarily in teaching' (10 %); 'In both, but leaning towards teaching' (30 %); In both, but leaning towards research' (46 %); 'Primarily in research' (14 %) (Table 15.7a, 15.7b). In the 1992 survey, it was as follows: 'Primarily in teaching' (13 %); 'In both, but leaning towards teaching' (36 %); 'In both, but leaning towards research' (42 %); 'Primarily in research' (6 %).

If we compare the relative strength of the teaching orientation (first and second items) and research orientation (third and fourth items) for the 2 years, the result is as follows: in 2007, 40 % expressed at least an inclination towards teaching and

Table 15.8a Preference in teaching/research 2007 (%)

	AR	AU	BR	CA	CH	FI	DE	HK	IT	JP	KR	MY	MX	NO	PT	ZA	UK	US	Avg
Teaching	43	30	50	32	53	35	33	37	23	28	32	52	61	17	47	53	33	56	40
Research	57	69	49	68	47	65	67	63	77	71	68	47	39	83	53	46	67	44	60

Table 15.8b Preference in teaching/research 1992 (%)

	AR	AU	BR	CA	CH	FI	DE	HK	IT	JP	KR	MY	MX	NO	PT	ZA	UK	US	Avg
Teaching			62					46		28	45		59				44	63	50
Research			39					54		72	56		41				55	37	51

Source: CAP Survey 2007/2008

60 % an inclination towards research; in 1992, the former was 50 % and the latter was 51 % (Table 15.8a, 15.8b).

Clearly, internationally, the orientation towards teaching has decreased and the research orientation increased during these 15 years. Thus we find an international trend towards an increased inclination to research even though some mature higher education systems are undergoing a shift from the mass to the universal stage of development (Trow 1974).

15.6 Concluding Remarks

In general, the following are some of the most salient results that can be highlighted at this time.

- Average age construction of Japanese academics is the most aging among 18 countries and it is problem for the academic community, especially for the recruitment of younger staff, though academic productivity is high thanks to this aging professors.
- Gender problem is to be improved as soon as possible to the level of catching up with at least the average ratio of 30 % in OECD countries.
- It is recognizable that the mobility of academics is increasing recently, especially those below 50 years old, but even so it is not sure that this trend has a positive connection with high academic productivity, since it was usually caused by the type of compulsory mobility. In this context, it is true to note that the 'opened structure' of academic marketplace has not been realized sufficiently.
- Many academics are now complaining about the institutions they belong to because of the deterioration of academic environments including facilities, personnel affairs, management, less research time and money, and working conditions. Especially, academics below 50 years old desire to go other institutions. This trend may effect upon academic productivity in future, although it has been keeping internationally high level thus far. To raise GDP-ratio of public expenditure to higher education is necessary at minimum.

– Given these observations, it is understandable that Japanese academic career reflects complicatedly Japanese academia as well as society. The existence of the 'opened structure' testifies the fact of considerably high academic productivity, and on the other hand the existence of the 'closed structure' testifies some problems as follows: aging of academic staff population; high portion of full professorship; unemployment problem of post-doctors; compulsory mobility; gender problem; worsening work environment; younger academics' strong complaint, stress, and desire to go another institutions.
– Japanese academics' high research productivity has been kept constantly for 15 years thanks to some supportive reasons related to the traditional climate in spite of worsening environment. Nevertheless, maintaining such high research productivity exhibits a sign of decline due to some reasons discussed.

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Chapter 16
Academic Advancement and Gender: A Comparative Analysis

William K. Cummings and Olga Bain

16.1 Introduction

The 'glass ceiling effect' has been taken seriously by many as a characterization of the barriers women (and minorities) encounter as they seek advancement in career ladders towards top professional and managerial positions in their workplaces. The report by the U.S. GAO issued in October of 2010 highlights persistent gender pay inequality in pay and promotion to top managerial positions, particularly for working women with children in the U.S. Over the past 7 years the proportion of women in the managerial ranks did not change (39–40 %), and female managers still earn only 81 % of what their male counterparts receive (up only 2 % over the past decade). In terms of advancement to top managerial posts, only 13.5 % of the chief executive officers of corporations are women, and when the spotlight shifts to the CEO's of Fortune 500 corporations only 2.7 % are women.

These reports come on the heels of new data that indicate that the share of doctorates awarded to women in the U.S. is increasing each year: from 37 % in 1991 to 46 % in 2011 (Survey of Earned Doctorates). Among U.S. citizens and permanent residents, women earned the majority of doctorate degrees each year since 2002. So the issue of the glass ceiling for academic women may appear puzzling. U.S. higher education enables women to earn advanced degrees and position themselves competitively in the academic labor market, but how do these women actually fare in initial placement and subsequent advancement to senior rank? According to the U.S. National Center for Education Statistics, the proportion of full time faculty who are women is 43 %, while the proportion of full professors who are women is only 26.9 % for 2009 (NCES 2010). Furthermore, the proportion of women in the academe in the recent years have gradually increased, while the proportion of full

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professors who are women remained stable. Meanwhile, a disproportionate number of U.S. women are finding academic employment in non-tenured fixed-term positions (Gappa et al. 2007).

Is the U.S. experience unique or are there parallel patterns in other countries? (Lie et al 1994) For the period circa 1990, Bain and Cummings (2000) compiled indicators on gender and academic advancement for 25 countries. In all 25 of these countries, women were a minority of the profession. In 16 of these countries women were less than one quarter of the profession. And in ten of the 25 academic systems for which data were available, less than one of every 10 full professors was a woman.

Since that time in many countries there have been impressive societal changes external to higher education that would seem logically to improve the position of women in higher education. These include movements promoting equal employment rights for women including in the academic marketplace. In several nations, this advocacy has led to important legislation and other related measures such as the Japanese government setting a target for the inclusion of women in the national university sector of the Japanese higher education system. At the same time, there have been changes inside higher education such as steps to improve the transparency of academic recruitment and promotion that may or may not have had some impact on women's advancement (Tierney and Bensimon 1996).

The external changes are sometimes portrayed as converging global trends that are more or less equally pervasive across all societies and thus are leading to similar structures in all higher educational systems. In contrast to this convergence perspective is the argument that the respective higher educational systems or groups of systems are constructing distinctive approaches.

This paper drawing on the new data seeks to update the earlier analysis:

- Are women more prevalent in academia than they were 15 years ago?
- Are women more prevalent in the senior ranks than they were 15 years ago?
- What in general are the determinants of women's advancement in academe?
- What national variations are evident in the determinants? Might it be said that external or internal factors are more salient, and is there a convergence in determinants or the persistence of divergence?

16.2 Sources of Data

The primary data source for the aforementioned early 1990s indicators was 'The 1992 Carnegie International Survey of the Academic Profession' (Altbach 1997), supplemented by information from other national surveys. The primary data source for the analysis presented below is 'The 2007 Changing Academic Profession Survey.' Both surveys were conducted by international consortia of higher education specialists. Both used a common definition of the university (all academics with full or at least 50 % part-time jobs at 4-year universities), and both surveys used similar sampling designs with a rough goal of achieving a minimum effective

Table 16.1 Aggregate trends in women's advancement in academia by country

	% of Academics who are women		% of senior rank academics who are women	
Country	1992	2007	1992	2007
Brazil	39	47	18	47
China	24	37	11	31
Germany	17	29	5	19
Japan	8	9	6	8
Korea	13	18	11	18
Mexico	36	35	60	32
Norway	24	38	9	28
UK	21	49	5	40
USA	26	42	14	37

Source: Carnegie Survey 1992 and CAP Survey 2007/2008

(taking into account the design effect) sample of 800 academics in each participating country/system.

The two surveys had a similar purpose, and there was overlap in approximately 60 % of the survey items. The 1992 survey was conducted in 14 countries and the 2007 survey was conducted in 18 countries; nine of the ten countries that were in both surveys are the focus of the information presented in Table 16.1 above.

16.3 Methods

Descriptive analysis of the proportion of academics that have a senior rank and the proportion of those with senior rank who are women will be used to answer the first two research questions on aggregate trends.

Concerning the determinants of women's advancement (question 3), we will engage in a series of multivariate analyses where academic rank (senior = 1 and junior = 0) is the dependent variable and gender (female = 1 and male = 0) is the key independent variable, with additional independent variables progressively entered in such a manner as to clarify the determinants of advancement.

Our approach will be to enter into the successive equations sets of variables that, according to the current literature, influence the career advancement of both women and men. The sets of variables we have identified include personal, work and organizational, disciplinary, institutional, and societal factors as discussed below.

In these successive equations in so far as gender has a statistically significant negative relation to rank, it will be argued that, despite the importance of these other factors, there is female gender bias. If the relation (coefficient) of gender is insignificant (or significant but positive), it will be argued that there is no gender bias.

For the multivariate analysis, it is permissible to use either or both ordinary least squares regression (OLS) and logit regression. Logit regression tends to be pre-

ferred by statisticians as it minimizes the impact of heteroscedasticity in the independent variables—though in the analysis we have carried out we found essentially the same results with both of the multivariate procedures. For the main presentation we will use logit regression while for the initial country to country comparisons (summarized in Table 16.7), we will use OLS.

16.4 Results of Analysis

16.4.1 Aggregate Trends in Women's Advancement in Academia

Our initial interest is in two indicators of women's advancement in academia, getting a job in academia at a 4-year institution and obtaining promotion to the rank of full professor. Table 16.1 presents the trend for the nine countries that have comparable data for the early nineties and for 2007.

A broad conclusion is that women have made impressive advances in most of the countries for which chronological data are available both overall and at the professorial rank. For eight of the nine countries for which data is available both for 1992 and 2007, the proportion of women in academia has increased, and in 8 of the nine countries the proportion of senior rank academics who are women has also increased. Of course aggregate data is only part of the story. When the focus shifts to subsectors such as research universities the advances may be less evident. This cautionary note is especially applicable to the academic systems of more advanced societies.[1] Also it is notable that in one country (Mexico) women appear to have been proportionately more prevalent at the senior ranks in 1992 than in 2007.

16.4.2 The Determinants of Entry to and Success in Academia

While the relative position of women in academia has improved over the 15 year period from 1992 to 2007, nevertheless gender equality has not been achieved. There are a number of factors that are believed to have an impact, positively or negatively, on the position of women in labor markets including the academic labor market. Borrowing from the earlier Bain-Cummings model, these can be grouped into personal, organizational, professional, institutional, and societal factors. We will first review each of these factors, and then examine their import.

[1] According to the CAP survey to be introduced below, in some of the emerging countries such as Argentina, Brazil, and Malaysia women appear to be outpacing men in the academic marketplace.

16.4.2.1 Personal

Foreign-Born Systems vary widely in their openness to academics that are foreign born as well as foreign trained. Where systems are open, it expands the range of talent that can be considered when making new appointments. Given this increased selectivity it might be presumed that foreign-born academics might be more qualified than the native born and hence would experience more rapid mobility. On the other hand, the foreign born may be handicapped in terms of the personal contacts that are useful in academic work, and they may also lack some of the personal and communication skills that are essential for maximizing communication in the classroom and in academic publications.

Family Status The academic career is highly competitive and demanding, particularly in the early years when new members have to prepare new courses and also engage in attractive research that leads to publications. These challenges tend to occur at the very same time that most young people consider marriage as well as child-birth (McElrath 1992). Those who actually decide to build families tend to experience considerable strain, finding they do not have as much time to devote to their work as their colleagues (Ward 2004; Perna 2001; Sax et al. 2002). This may lead to downward mobility or other adjustments that narrow opportunities.

Cultural Capital The academic job involves the management and development of knowledge, and individuals who come from homes with educated parents are more comfortable with these occupational demands.

Training An important factor influencing women's (and men's opportunities) is the relative success in completing high quality professional training including attendance at a prestigious graduate school, completion of high impact research, obtaining an advanced degree, and spending time as a post-doctoral student in a prestigious research setting (Tiechler 1996).

Experience In virtually any career, one of the most important determinants of advancement is how long the individual has been in the labor market. Bain and Cummings (2000) in their previous research found that women were a relatively new presence in academia and thus were more concentrated in the lower academic ranks. The small numbers of women who had more lengthy experience were in fact achieving advancement on par with their male colleagues.

16.4.2.2 Organizational

Tenure Track Systems vary widely in the predictability of job security with some offering all academics a stable job whereas others may rely heavily on fixed-term contracts and/or part-time contracts for many academic appointments. Academics who obtain these 'contingent' jobs are likely to feel insecure and may have heavier workloads and lower pay (Gappa et al. 2007). To the extent academics have a con-

tingent job, they tend to be disadvantaged in the competition for advancement. In general women are more likely to be contingent faculty than men.

Non-Academic Work Experience Arguably for some fields, especially the more professional fields such as education, law, business, and engineering there would seem to be advantages to spending part of one's career in a practical or applied role. This experience might enhance one's ability to convey relevant knowledge and establish useful research links with outside entities. On the other hand, extensive time outside of academia may make it difficult for an individual to adapt to the somewhat unique work demands of academia.

Time Budget One of the best predictors of how well an individual fares in work is the amount of time they put into it (Bellas and Toutkoushian 1999). And in academia where academic research is highly valued as a precondition for advancement, particularly critical is the amount of time that individuals devote to research (Porter and Umbach 2001). These generalizations apply equally to men and women.

Research Productivity The outcome of time devoted to research is, hopefully, the completion of high quality academic publications. An individual's research productivity has bearing both on the likelihood of initially securing an academic job and on the speed of advancement (Xie and Shauman 1998). Again this generalization applies equally to men and women.

16.4.2.3 Professional

Field The academic field that an individual is in can influence their opportunities in a variety of ways (Becher 1989). Women who find themselves in fields with many other women are more likely to receive psychological support as well as professional support.

Expansion of Field Just as with the expansion of systems, the differential expansion of fields can have an impact on opportunities for women. Women tend to favor certain fields over others—education and psychology rather than economics, biology rather than physics. If these fields are the growth areas in system expansion, then the opportunities for women will be enhanced.

Institutional Type Higher educational systems are composed of a variety of subsectors and layers (Cummings 1999). A crucial differentiating factor influencing women's opportunities for advancement is whether the employing institution is a research or a teaching institution. The former place greater stress on the research accomplishments of faculty and on the obtainment of research funding; keeping with those goals, the research institutions offer relatively more support for research and for obtaining research funding. Women insofar as they are somewhat new to the system may not have as strong a network as men, and hence may be at a disadvantage in gaining positions in research institutions (Aquirre 2000).

16.4.2.4 Institutional and/or Societal

Academic Models The modern higher educational institution traces its origins to the Western Medieval university, an institution owned by the church and run by clerics who without exception were males (Clark 1987). The trend towards secularizing the majority of IHE is relatively recent as is the trend towards welcoming women to become members of the academic profession. Indeed as late as 1900, women were simply ineligible for all academic posts in the UK. Ben-David (1977) has argued that there are no more than a handful of models for the organization of academic work including specifically the Germanic, French, English, and American variants. Others might add the Mediterranean, Japanese, and Soviet models. Arguably the more recently founded models are more gender open whereas the classical European models, often unknowingly have instituted practices that are gender biased. One example is the number of rungs in the academic hierarchy (Tiechler 1996); where there are many as in the UK system, the result is a relatively small number of senior posts thus stiffening the competition for promotion and potentially reducing the probability of a woman becoming a professor.

Gendered Culture Arguably virtually all contemporary societies have a masculine bias (Lie and O'Leary 1990; Chamberlain 1991), but this appears to be strongest in several of the East Asian nations and in several Middle Eastern and African societies. Japan and Korea influenced by Confucianism historically asserted that the place of a woman was in the home as mother and wife rather than in the labor market.

System Inclusiveness Systems that welcome students from diverse social backgrounds are also likely to be open to faculty from diverse backgrounds, and to the extent female faculty gain entry to the academic profession their prospects for advancement to senior positions are enhanced. A reasonable indictor of the inclusiveness of a system is the percentage of the tertiary level age cohort that attend higher education.

System Expansion It is difficult for an aspiring academic, male or female, to obtain an academic job if the higher educational system has a stable size, whereas in expanding systems new jobs are continuously opening (Reskin and Roos 1990). Systems may expand because they are becoming more inclusive or simply because the population is rapidly increasing. Among the major systems of today, China has experienced a 400 % increase in the number of academic jobs over the 1992–2007 period whereas the number of jobs in Japan has been essentially flat. Other systems range between these extremes. Expansion alone is no more favorable to men than to women, but in combination with other factors may enhance the prospects for aspiring female academics.

Egalitarian Culture Societies differ widely in the extent to which ethnic and socioeconomic characteristics of individuals are used in personal evaluations and the distribution of rewards. To the extent such evaluations are stressed, it may be that the social hierarchy in academia is steep with relatively fewer senior positions. Also it may be that such positions are relatively closed to more marginal groups including

women. One indication of the relative egalitarianism of a society is the relative equality of the distribution or wealth and/or income.

System Maturity Systems differ in their degrees of self-sufficiency. Those that have been supported by advanced economies for a reasonable period of time are likely not only to have expanded but also have developed the capacity to train future generations of academics. Where this capacity exists and a significant proportion of academics are home grown, the academy may encounter pressure to more rapidly promote individuals to senior ranks. In contrast would be the academic systems of emerging economies that may be promoting the rapid expansion of higher education, but relying significantly on external systems for the training of the new recruits.

Systemic Policies Favoring Women Public policy can also have an influence on women's opportunities. Japan, a country with a surprisingly low percentage of women academics, has instituted laws and regulations requiring national universities to increase their proportion of women academics to a minimum of 30 %. Several of the Scandinavian countries have similar regulations (Smeby and Try 2005). In contrast would be countries such as the U.S. that have broadly phrased laws supporting equal employment rights but which do not specify particular targets. It might be surmised that the former approach is more favorable in opening up opportunities for women.

16.4.2.5 Interactions

Distinct from the direct impact of each of these variables on academic advancement is the possibility that particular variables in combination have a significant impact. For example, we will show below that being female is negatively correlated with holding a senior rank. We will also show that having a doctorate is positively correlated with holding a senior rank. There is additionally the possibility that women who hold the doctorate have a higher probability of advancement than women; without if so, we can say that there is a significant interaction between being female and holding a doctorate. We propose at different stages in the analysis below to examine the interaction of gender with all of the other independent variables of interest.

16.4.3 2007 Basic Multivariate Model

Our analytic strategy for identifying the determinants of senior rank follows essentially the same approach as our earlier work on the 1992 data-set. First we considered the relation of the core set of personal variables to senior rank (Table 16.2), and this suggested that having a highly educated father, obtaining a doctorate, and

Table 16.2 Advancement and personal variables

Variables in the equation	B	S.E.	Wald	df	Sig.	Exp(B)
Female	–0.383	0.032	141.209	1	0.00	0.682
Foreign born	–0.323	0.036	80.872	1	0.00	0.724
Children home	0.096	0.016	37.716	1	0.00	1.101
Care	–0.251	0.046	29.322	1	0.00	0.778
Father tertiary	0.236	0.032	54.433	1	0.00	1.266
Doctorate	0.74	0.03	591.228	1	0.00	2.095
Experience	0.126	0.002	3984.579	1	0.00	1.134
Constant	–2.142	0.043	2505.625	1	0.00	0.117

Source: CAP Survey 2007/2008
Cox = .250 Nagel = .334

lengthy experience were all positively related to senior rank. In contrast, being female, foreign born, and having dropped out of the labor market to provide care to a relative were all negatively related to obtaining a senior position. The one somewhat surprising finding was the positive relation between having children at home and achieving senior rank.

Next when we added several variables reflecting the organizational environment (Table 16.3), virtually all of the above relations remained, with the exception that the children at home variable became insignificant. Additionally, being in a tenure track position, collaborating domestically, and having a strong publication record all had significant positive associations with senior rank. In contrast, working at a research university, having worked outside of higher education, and collaborating internationally were negatively related to gaining a senior position. Interestingly the number of hours an academic devoted to research had no relation to advancement. Controlling for these other factors, being a woman continued to have a significant negative influence on achieving senior rank.

Next we supplemented the basic model (the combination of personal and organizational factors) by adding the interactions of being female and each of the constituent variables as reported in Table 16.4.[2] Once these interactions were introduced into the equation, 'the sign for female as such became positive' (but not significant) whereas the direction of the signs for all of the other variables was unchanged. In nearly all of the analysis that follows, the sign for female remains positive, adding weight to our fundamental conclusion that being a woman as such is not a hindrance to advancing to senior rank.

[2]The interaction variables were computed by multiplying the gender variable times each of the other independent variables. For example gender with values of 1 and 0 times doctorate with values of 1 and 0 ends up with three products of 0 and one product of 1, the latter being the combination of being female and having a doctorate.

Table 16.3 Advancement with personal and organizational variables

	B	S.E.	Wald	Sig.	Exp(B)
Female	–0.373	0.035	113.773	0	0.689
Foreign Born	–0.151	0.042	13.196	0	0.86
Children at home	0.017	0.017	0.99	0.32	1.017
Care	–0.218	0.05	19.352	0	0.804
Father has tertiary education	0.166	0.035	22.867	0	1.18
Doctorate	0.4	0.037	116.749	0	1.491
Experience	0.121	0.002	3127.166	0	1.128
University sector	–0.308	0.037	67.862	0	0.735
Hours per week for research	0	0.001	0.006	0.939	1
Collaborate with domestic partner	0.1	0.038	6.926	0.008	1.105
Collaborate with international partners	–0.186	0.04	21.614	0	0.83
Ln of articles	0.321	0.019	292.177	0	1.378
Outside	–0.082	0.04	4.133	0.042	0.921
Tenure track	0.633	0.034	355.326	0	1.883
Constant	–2.272	0.058	1527.192	0	0.103

Source: CAP Survey 2007/2008
Cox = .272 Nagel = .364

Table 16.4 Advancement with personal and organizational

Variables plus interactions with gender	B	Wald	Sig.
Female	0.063	0.311	0.577
Several variables omitted from table display	–0.066	3.465	0.063
FemChild	–0.185	3.26	0.071
FemCare	0.227	9.026	0.003
FemxDoctor	–0.007	4.85	0.028
FemxRes	–0.154	3.945	0.047
FemUniv	–0.141	3.58	0.058
FemDCollab	–0.064	2.707	0.1
	–2.447	1153.367	0

Source: CAP Survey 2007/2008
Cox = .274 Nagel = .366

Concerning the interaction variables, the combination of being female and having a doctorate was positively associated with advancement whereas the combination of being female and working at a research university was negatively associated with advancement. This pattern of results suggests that research-oriented work environments may throw up obstacles to female advancement, while females who obtain a doctorate enjoy a relative advantage over their sisters without doctorates as well as over all men.

16.4.4 The Import of Academic Field

Building on the above model we added dummy variables reflecting the several academic fields (in Table 16.5). There were some variations by field in terms of the proportion of academics in senior ranks. Specifically there are proportionately more senior rank positions in the humanities, business-law, and engineering; and fewer in the life sciences and medicine. But introducing these field variables did not add much to the explanatory power of the equation (e.g. the increase in the adjusted R-squared after adding the academic fields was less than 1 %).

We also considered the interactions of gender with the respective fields, but these were largely insignificant and added little to the adjusted R-squared. For example, there was only a weak suggestion that women who specialized in business-law or physical sciences were less successful in achieving advancement than men. Hence for subsequent steps in this analysis, we dropped the field and field interaction variables.

16.4.5 Similarities and Differences in National Patterns

If the global processes of convergence are as strong as some suggest, then the above conclusions on the determinants of women's advancement would apply equally to all of the systems under investigation. However, as we illustrate below in Table 16.6, there is considerable variation between systems—specifically, (a) the proportion of academics holding a senior rank vary widely by country, (b) the above model when applied at the country level varies considerably across countries—from slightly over 10 % of the variance in the case of Japan to nearly 60 % of the variance in the case of Norway, and (c) the variables that are most salient also differ by country.

16.4.6 National Equations

To explore the universality of the basic model, we decided to compute and compare national regressions. For this we decided to use ordinary least squares regression (OLS) as the associated statistics enable a better grasp of the variables that are most influential in accounting for senior rank—specifically with OLS, we have access not only to the indicator of statistical significance but also to the standardized regression coefficients.

First we looked at the basic model without interactions, and then we added the interactions which we report in Table 16.6. Influencing the strength of explanation is the variance in the dependent variable, so in the second column of Table 16.6 we indicate by country the proportion of each sample that hold senior rank. In most of the countries the proportion is 50 % +/− 15 %. Two exceptions are Argentina and Japan, and thus it is not surprising that the adjusted R-squared for these two countries is low.

Table 16.5 Advancement's relation to basic set, research, field, and selected interactions

	B	S.E.	Wald	df	Sig.	Exp(B)
Female	0.113	0.113	0.986	1	0.321	1.119
Foreign Born	–0.079	0.051	2.463	1	0.117	0.924
ChildrenHome	0.049	0.021	5.289	1	0.021	1.051
Care	–0.09	0.08	1.272	1	0.259	0.914
Father Tertiary	0.183	0.045	16.179	1	0	1.201
Doctorate	0.302	0.048	40.091	1	0	1.352
Experience	0.125	0.003	2106.332	1	0	1.133
University	–0.262	0.047	30.786	1	0	0.77
Outside	–0.079	0.041	3.741	1	0.053	0.924
Tenure Track	0.634	0.043	217.676	1	0	1.886
Research Hours	0.002	0.002	1.361	1	0.243	1.002
Collaborative Dom	0.168	0.048	12.31	1	0	1.182
Collaborative Intl	–0.184	0.04	20.785	1	0	0.832
Ln Articles	0.359	0.023	240.731	1	0	1.432
FemxForBorn	–0.122	0.091	1.783	1	0.182	0.886
FemxChild	–0.074	0.035	4.33	1	0.037	0.929
FemxCare	–0.172	0.103	2.805	1	0.094	0.842
FemxFatherT	–0.052	0.071	0.536	1	0.464	0.95
FemxDoctor	0.254	0.076	11.194	1	0.001	1.29
FemxExper	–0.007	0.005	2.434	1	0.119	0.993
FemxTenTrack	–0.009	0.069	0.016	1	0.898	0.991
FemxRes	–0.006	0.003	4.075	1	0.044	0.994
FemUniv	–0.164	0.078	4.452	1	0.035	0.848
FemDCollab	–0.134	0.075	3.212	1	0.073	0.875
FemLnArt	–0.076	0.039	3.744	1	0.053	0.927
Humanities	0.178	0.058	9.281	1	0.002	1.195
Social Sciences	0.103	0.066	2.452	1	0.117	1.109
Business Law	0.221	0.06	13.631	1	0	1.248
Life Sciences	–0.071	0.068	1.087	1	0.297	0.931
Physical Sciences	0.118	0.058	4.065	1	0.044	1.125
Engineering	0.235	0.057	17.001	1	0	1.264
Medicine	–0.306	0.061	25.47	1	0	0.737
Constant	–2.556	0.077	1092.425	1	0	0.078

Source: CAP Survey 2007/2008
Cox = .277 Nagel = .370

The overall pattern for the national equations is similar to that for the international equation—experience is often prominent as is tenure track appointment, number of articles, and having a doctorate. In only one country, Mexico, is being a woman a liability. In the case of two emerging systems—Portugal and S. Africa, after controlling for other factors, women have an advantage. The interactions of female with father's education, tenure track, and having a doctorate were also relatively prominent.

Table 16.6 Summary of national equations

Country	Senior rank %	Adjusted R-Squared	Most important predictors of advancement
Argentina	31	0.1	Experience-FemChild-FemFor + FemArt
Australia	20	0.318	Experience + Articles-FemUniv
Brazil	59	0.131	Articles-Father + TenureT + FemFath
Canada	71	0.331	Experience + Child-Care + FemTenure-FemU
China	57	0.464	TenureT + Doctorate-Father + Articles + FemFath
Finland	27	0.34	Doctorate + TenureT + Experience + Articles
Germany	39	0.464	Experience + Doctorate + Children + FemExp
Hong Kong	45	0.447	Experience + TenureT + Articles
Italy	62	0.306	Experience-FemU + ForBorn + IntlCol
Japan	87	0.102	Experience + TenureT + Articles
S. Korea	64	0.396	Experience-TenureT + Child
Malaysia	23	0.441	Experience + Doctorate-FemDoc-Care + Articles
Mexico	72	0.414	Experience-Female + Children + FemExp + Articles
Norway	58	0.667	TenureT + Doctorate + Experience-FemT
Portugal	20	0.303	Experience + TenureT + Female + Articles
South Africa	62	0.125	Experience + Female-FemDoc-FemFather
U. Kingdom	43	0.279	Doctorate + TenureT-FemTenure + Articles
U.S.	64	0.391	Experience + TenureT + Articles-ResHrsIntCol

Source: CAP Survey 2007/2008

On the other hand, there are some interesting variations in national patterns. Specifically, beyond recognizing the prominence of experience in several of the countries 'having a doctorate' was strongly associated with advancing to senior rank (Finland, Norway, Germany, the UK, and Malaysia). In several others, having a 'tenure track position' was associated with senior rank (the US, S. Korea, Japan, Hong Kong, and Portugal). 'Producing numerous articles' was associated with senior rank in Australia and Brazil. 'Family factors' were somewhat more prominent in Argentina, Mexico, and S. Africa. And the remaining countries—Italy, China, and Canada—had patterns that could not be easily grouped with the others.

On the assumption that these groupings might be the best way to characterize national differences, we created dummy variable for each and added these dummy variables along with their interactions with gender to the basic equation. This equation had a Cox R-squared of .303 (Nagel of .345) that is a marginal improvement on the basic equation. However, all of the dummies were negatively associated with senior rank, thus did not improve our insight into the determinants of academic advancement.

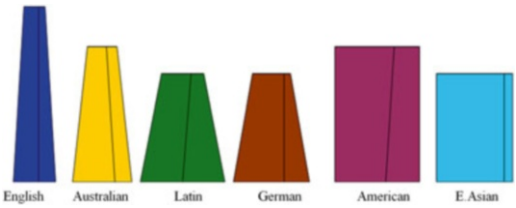

Fig. 16.1 Contrasting institutional types

16.4.7 Institutional (and Country) Impact

In the analysis of the 1992 data we and others argued that institutional differences were important, but it may be that the institutional differences are not as clear cut today. For example, China which once followed the Soviet higher education model has adopted many of the features of the U.S. model; similarly Canada has minimized some of its Anglophone features in favor of U.S. practice. And across Western Europe, the pressure of ERASMUS has led to some convergence in national types. Nevertheless we explored this dimension by grouping selected countries in terms of institutional affinities.

These affinities are, as depicted in Fig. 16.1, (a) the vertical dimension of the number of academic ranks ranging from the E. Asian and German systems with three to the English system with six; (b) the horizontal dimension of the proportion of academics in each rank which is somewhat pyramidal in the English and German cases, and relatively equal in the US and East Asian cases; and (c) the prevalence of women in the respective ranks. These three principles led to six types in the 2000 analysis, e.g. US, Australian, English, German, East Asian, Latin American, and for this study we have added the Chinese institutional type.[3]

All of the institutional types have a significant association with senior rank, with the Latin, East Asian, and Chinese types having a positive coefficient and the Australian, English, and German types having a negative coefficient. Additionally the adjusted R-squared (cox) increased from 28 to 32 %. This finding suggested the value of further exploration of system types. Hence we computed the interactions of female with each of these types and entered them into another equation (Table 16.7).

Looking at Table 16.7, we can infer that East Asia has relatively more positions at Senior Rank, and while relatively few women currently have senior positions in East Asia, the institutional type is relatively open to the advancement of women. By way of contrast, in Latin America a relatively high proportion of positions are senior, women are relatively plentiful in academia, and women have reasonable access to these senior positions. China is somewhat similar to Latin America. In contrast with the above three settings, women appear relatively disadvantaged in the UK, Germany, and Australia. The U.S. type appears to be gender neutral.

[3] As the China was not part of the 2000 analysis and it does not resemble the Japanese and Korean patterns, we decided to create separate dummy variables for the Chinese and East Asian cases.

Table 16.7 Advancement's relation to institutional types with interactions

	B	S.E.	Wald	df	Sig.	Exp(B)
Female	0.179	0.141	1.617	1	0.204	1.196
Foreign Born	0.151	0.059	6.431	1	0.011	1.163
ChildrenHome	0.062	0.022	7.601	1	0.006	1.064
Care	−0.107	0.083	1.647	1	0.199	0.899
Father Tertiary	0.079	0.049	2.629	1	0.105	1.082
Doctorate	0.512	0.052	97.553	1	0	1.668
Experience	0.131	0.003	2160.215	1	0	1.14
University	−0.037	0.058	0.403	1	0.525	0.964
Outside	−0.09	0.059	2.291	1	0.13	0.914
Tenure Track	0.68	0.046	217.761	1	0	1.973
Research Hours	−0.003	0.002	2.071	1	0.15	0.997
Collaborative Dom	0.217	0.05	18.756	1	0	1.242
Collaborative Intl	0.169	0.044	14.712	1	0	1.184
Ln Articles	0.335	0.025	183.865	1	0	1.397
Femx ForBorn	−0.129	0.104	1.547	1	0.214	0.879
Femx Child	−0.084	0.037	5.101	1	0.024	0.92
Femx Care	0.034	0.108	0.099	1	0.753	1.034
Femx FatherT	−0.002	0.075	0.001	1	0.981	0.998
FemxDoctor	0.213	0.083	6.543	1	0.011	1.237
FemxExper	−0.008	0.005	2.943	1	0.086	0.992
FemxOutside	−0.157	0.093	2.869	1	0.09	0.855
FemxTenTrack	0.007	0.074	0.008	1	0.928	1.007
Femx Univ	−0.311	0.091	11.602	1	0.001	0.732
FemxRes	−0.005	0.003	2.409	1	0.121	0.995
Femx DCollab	−0.135	0.079	2.919	1	0.088	0.874
FemxLnArt	−0.046	0.042	1.202	1	0.273	0.955
US Type	0.368	0.114	10.34	1	0.001	1.445
Australia Type	−1.669	0.133	157.946	1	0	0.188
English Type	−0.205	0.089	5.312	1	0.021	0.815
German Type	−0.81	0.099	66.764	1	0	0.445
Latin Type	0.937	0.073	163.853	1	0	2.553
EastAsia Type	0.878	0.09	95.407	1	0	2.406
China Type	1.332	0.072	343.35	1	0	3.788
Femx US	0.285	0.17	2.824	1	0.093	1.33
Femx Australia	−0.121	0.218	0.307	1	0.58	0.886
Femx English	0.224	0.14	2.573	1	0.109	1.251
Femx German	0.08	0.188	0.18	1	0.672	1.083
Femx Latin	−0.034	0.11	0.094	1	0.759	0.967
Femx EAsia	0.285	0.187	2.325	1	0.127	1.33
Femx China	0.07	0.114	0.377	1	0.539	1.073
Constant	−3.333	0.09	1360.331	1	0	0.036

Source: CAP Survey 2007/2008

The focus on institutional types offers much promise, and in future work it would be desirable to formulate alternate types such as a Francophone model or a post-Soviet model.

16.4.8 Percent of Positions That Are Senior Rank

While the concept of institutional type has appeal conceptually, there is a more efficient way to illustrate its relevance to this study. One of the above dimensions is the proportion of academics that hold senior rank; it should be obvious that the relative prevalence of senior rank openings directly influences the likelihood that an individual academic will advance to senior rank. Keeping that in mind, we constructed the variable, Percent of Positions in the System that are Senior Rank which, as noted in Table 16.6, ranges from Japan with 87 % to Australia and Portugal with 20 %.

Senior Rank and its interaction with female were added to the basic equation, and this new equation realized a Cox Adjusted R-Squared of 35 % (Nagel of 46 %), an impressive 8 % advance in explained R-squared over the basic equation. Thus we can say that systems vary widely in the prevalence of senior rank and this relative prevalence has a strong impact on the likelihood of an individual advancing to senior rank.

Senior Rank and its Interaction with Female was also considered. The adjusted R-Squared is about the same. The sign of Fem*Senior Rank is positive and significant suggesting women are more likely to advance in systems with a relatively high proportion of positions that are senior rank. However, when this interaction is introduced the sign of Female alone shifts to negative (though insignificant).

16.4.9 Societal Level Factors

It has been suggested that societal level features might have an impact on gender and advancement, including Inclusiveness, Expansion, Egalitarianism, System Maturity, and Emerging System. We developed indicators for each of these features as elaborated in Appendix. Some of these system level factors were related to each other—inclusive positively with egalitarian and mature and negatively with expanding and emerging, expanding positively with emerging and negatively with inclusive and mature, egalitarian positively with inclusive and emerging—but most had weak to negligible zero-order relations with gender and advancement.

When the system level factors were added to the basic model (leaving out emerging economies as it is essentially the obverse of mature economies), they increased the adjusted R-squared by about 4 % above the level of the basic equation (cox up to .300 and nagel up to .400). Most of the societal level factors were ‘statistically significant,’ and the direction of their signs was interesting. As expected, in the more

mature and more egalitarian societies the probability of an academic holding senior rank was greater, but the probability was less in the more inclusive and expanding societies. In that the more mature societies also tend to be more inclusive, this statistical outcome is surprising.

There may, of course, be limitations in our operationalization of these concepts, but it turns out that these system level factors added no more to our explanatory quest than the aforementioned institutional types. Additionally as we have noted some of the statistical patterns were counter-intuitive. For these reasons, we think of the approach relying on societal level factors as simply providing an alternate (and possibly inferior) perspective for examining of the link between gender and advancement.

16.5 Summing Up

As a general rule, the key to academic advancement is a doctorate, a tenure track job, experience, and academic research productivity. Children at home is not a big liability, but breaking career to look after children or adults is. Better educated parents have a positive effect, especially in the developing world.

There are fewer senior rank opportunities in top tier institutions, and this has a negative impact on the advancement of both men and women. There also fewer opportunities in the life sciences and medicine for both men and women. Research collaboration contributes, with international collaboration more important in advanced countries while domestic collaboration is more important in the emerging countries.

Women have made impressive advances in the academies of most of the countries for which chronological data is available both overall and at the professorial rank. For all of the nine countries for which data is available both for 1992 and 2007, the proportion of women in academia has increased, and in eight of the nine countries the proportion of full professors who are women has also increased.

While overall Females are not as advanced as men, the difference can be explained away by the liabilities females face (as seen in interactions). In several systems females do as well as men or even better, once the interactions are considered; Mexico is a notable exception.

Academic advancement and in particular female academic advancement appears to be shaped by the institutional culture of academies. Some systems have more positions relative to the size of the population—Finland, S. Korea, Norway, and the U.S. are the most expanded. Some systems have a greater proportion of senior positions than others—Japan, Canada, and Mexico are notable. Some systems may be more gender biased than others—Mexico and possibly some of the Western European systems.

These differences that were internal to national systems had a greater impact on the likelihood of individual advancement than did the differences external to national academic systems, such as recent system expansion, system inclusiveness, egalitari-

anism, and economic maturity. The implication is that the key to enhancing prospects for advancement including the prospects for women lies more within academic systems than without.

These differences are important and deserving of further inquiry, but what stands out most from this analysis is the extent of agreement across academic systems in the criteria for advancement of men and women—with the prominent emphasis on experience and productivity.

Appendix

Table 16.A.1 Variables Included in 1992 total, 2007 total, 2007 Country Specific Regressions (Those marked with * will be excluded from Country Regressions)

Variable	Details
Professor	Respondent has senior rank
Gender	Female as 1, male as male as 0
Foreign Born	Foreign born as 1
Children at Home	Children at home as 3 for 3 or more, 2, 1, 0
Care	Care as 1
Father has HE	Yes as 1
Ph.D. or equivalent	Doctorate as 1, other as 0
Seniority (experience)	Number of years employed in higher education
Position at Research U	Yes as 1
Outside Employment	Yes as 1
Tenure Track Position	Yes as 1
Research time	Self-report of hours spent on research per week when classes are in session
Collaborative Dom	Yes as 1
Collaborative Intl	Yes as 1
Product	Self report of academic articles published over the past 3 years. The natural log of the total score is used in the analysis.
Humanities	Literature, language, arts, and philosophy
Social Sciences	Anthropology, economics, geography, political science, and sociology
Business and Law	Business and Law
Education and Psychology	Education and Psychology
Life Sciences	Biology, agriculture, and veterinary sciences
Health	Medicine, nursing, and public health
Engineering	Engineering, technology, and computer science
Natural Sciences	Physics, chemistry, mathematics
American type*	A dummy variable including the United States
Australian type*	A dummy variable including Australia
English type*	A dummy variable including the United Kingdom and Hong Kong
German type*	A dummy variable including Germany

(continued)

Table 16.A.1 (continued)

Variable	Details
Latin type*	A dummy variable including Argentina, Mexico and Brazil
East Asian type*	A dummy variable including Japan and Korea
China type*	A dummy variable including China
Fem*	Female * Indicated variable

Appendix. Institutional and Societal Operations

Country	Historical	Inclusive (% cohort in HE)	Expanding (# HE Enrollees 2005/1985)	Egalitarian (based on Gini Index of Income)	Mature	Emerging economy
Argentina	French	65	433 %	1	0	1
Australia	English	72	314 %	2	1	0
Brazil	French	24	250 %	1	0	1
Canada	English, American	62	297 %	2	1	0
China	Russian, US	20	1837 %	2	0	1
Finland	German	92	248 %	3	1	0
Germany	German	55	178 %	2	1	0
Hong Kong	English	31	399 %	2	0	1
Italy	French	66	180 %	2	1	0
Japan	Japanese, US	55	167 %	3	1	0
S. Korea	Japanese, US	85	250 %	3	0	1
Malaysia	English	32	1268 %	2	0	1
Mexico	French	24	304 %	1	0	0
Norway	German	80	270 %	3	1	0
Portugal	French	56	417 %	2	0	0
South Africa	English	15	200 %	2	0	0
United Kingdom	English	60	275 %	1	1	0
United States	US	83	220 %	2	1	0

[1]For inclusive 0–30 = 1, 31–50 = 2, 51–70 = 3, 71–100 = 4
[2]For expanding 0–200 = 1, 201–300 = 2, 301–500 = 3, and 501 plus = 4

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Chapter 17
Demographics, Career and Academic Self-Understanding: A Comparative View

Jesús F. Galaz-Fontes, Akira Arimoto, Ulrich Teichler, and John Brennan

17.1 The Analytical Approach

The views and activities of members of the academic community are certainly strongly influenced by the regulatory and institutional conditions of higher education in the respective country and, at a more general level, by the broader features of the country itself where the institutions of higher education are located. Although higher education transgresses borders easily in terms of universal knowledge, willingness to collect information from all over the world, frequent international cooperation and mobility and widespread values of cosmopolitism, we note strong national influences as far as governance and management, funding, regulations as regards careers, as well as quantitative-structural policies and regulations are concerned. As a consequence, a substantial proportion of the analyses undertaken in the framework of the comparative study "The Changing Academic Profession (CAP)" have addressed the

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national differences according to the regulatory system and institutional settings, as well as their consequences for the academics' views and activities (see Locke et al. 2011; Teichler et al. 2013; Wolhuter et al. Chap. 6 in this volume).

This volume, in contrast, raises the question of how far academics vary between the different countries in terms of three general and closely interrelated matters. In the first place, basic demographic aspects are dealt with. Social background, gender and family issues are all considered. Largely a reflection of the prevailing conditions of the country where the academics live and work, these factors are nonetheless an important influence on their work and, therefore, are increasingly the subject of public and institutional policies. Secondly, several issues dealing with academics' careers are considered. Age, career stages, professional trajectories in other higher education institutions and mobility are relevant dimensions for understanding the ways by which academics become themselves in a very specific manner. Finally, the chapters in this volume also address matters in which an academic's values and choices play a major role. Altogether, the academic profession is a profession, like other expert professions, where the daily life is not highly controlled by rules, supervisors and routines, but rather leaves a broad room for manoeuvre for decisions to be taken by the individual professional, and this is even more strongly reinforced in the case of higher education by the widely shared conviction that "academic freedom" is a precondition for academic creativity. Therefore, the academic personality is addressed here: values, attitudes, inclinations, strategic options, etc.

This does not mean that the values and choices which play a role in the life of academics are purely "individual". There are national differences, for example, in the social role of women and men, the distinction of social strata and their influences across generations, the expectations of what careers should look like, the "work-life balance", the self-understanding of an academic, etc. In principle, we would like to make a series of distinctions, (i) between rules and regulations imposed on higher education from outside and those set internally, (ii) between rules and regulations on the one hand and, on the other hand, general norms and values which could also be differentiated between those emerged outside higher education (but affecting higher education) and those emerged inside higher education, (iii) and finally between all the rules and norms, no matter whether externally or internally originated, which the academics surveyed are exposed to on the one hand and the individual academics' responses and reactions to them on the other hand. Practically, however, no clear distinctions of these kinds can be made in the analyses of the academics' views and activities as reported by the academics themselves in response to a standardized questionnaire. Certainly, however, this analysis aims at paying attention to differences between countries, but in this case with emphasis on other factors than those of regulatory and institutional settings.

The majority of the chapters in this book focus on academics' views and the activities of academics in individual countries. Some pay attention to more than a single country, and some address issues explicitly in a comparative way across many or all countries included in the CAP study (Arimoto Chap. 15; Lin and Shen Chap. 13; Aiello and Pérez-Centeno Chap. 12; Höhle and Teichler Chap. 14; Cummings and Bain Chap. 16, all in this volume). The chapters focussing on a

single country provide in-depth information and discuss in detail the specific features of the academic and social environment relevant for academics' views and strategic options without explicitly examining how similar or different these features are in comparison to other countries. In contrast, the chapters providing comparative information explicitly provide less explanatory detail by country.

This does not mean, however, that the individual authors of this volume only draw from expert knowledge on higher education and the academic profession in their own country. Many scholars in the CAP study have a broad knowledge in this domain in various countries, and various activities were undertaken in the framework of the project for mutually enhancing the expertise on higher education and the academic profession in the various countries including, for example the exchange of information in more than a dozen international workshops (see for example RIHE 2006, 2008, 2009, 2010; Kogan and Teichler 2007; Locke and Teichler 2007; Locke et al. 2011; Fernández-Lamarra and Marquina 2012; Bentley et al. 2013; Shin et al. 2014; Huang et al. 2014). However, the authors of the chapters of this volume tend to discuss findings in detail as regards a single country or a few countries which they know very well.

This concluding chapter aims at providing information, as far as it is available in the CAP study, about the range of differences according to the major themes addressed in this volume. In interpreting and explaining these differences, it will draw from the various chapters selectively. However, the wealth of observations and explanations presented in the various articles will be highlighted. As the various articles differ in their approaches and the thematic priorities, it is not possible on this basis to provide explanations consistently across all countries. In some thematic areas, this synthesis of reflections on the various articles will have to come inadvertently to the conclusion that in-depth comparative explanations will remain a task for future analysis.

17.2 Social Background

Education is expected to offer individuals an opportunity to enhance their competences and to be professionally and socially successful with the help of their competences and efforts; thus, education is a mechanism in society with a strong meritocratic component. We also note compensatory policies in many countries for enhancing the opportunities of those learners who have less-than-average likelihood of educational success due to their socio-biographical background. But, altogether, high parental income and high parental educational attainment continues to increase the chances of educational success. As a consequence, large proportions of persons in professions requiring a high level of educational attainment – such as most prominently the academic profession – have parents with relatively high income and educational attainment.

In the CAP survey, academics were asked to state their father's and their mother's highest educational level, because this seems to be more readily compared across countries than occupational category or level of income. Actually,

- the proportion of respondents whose father had entered or completed tertiary education ranged from half or more in Japan (54 %), the U.S. (53 %) and Canada (50 %) to less than one third in Malaysia (22 %), China (26 %), Mexico (30 %) and Portugal (32 %);
- similarly regarding mother from 48 % in the U.S. to 12 % in Malaysia, 14 % in China and 15 % in Mexico; and
- regarding both parents from 39 % in the U.S. to 9 % in Malaysia, 12 % in China and 13 % in Mexico.
- in reverse, the proportion of those whose parents experienced at most primary education or even had no formal education ranged, regarding the father, from 10 % in Japan to 44 % in Mexico and, regarding the mother, from 9 % in Japan to 56 % in Malaysia (CAP survey, August 2011 data set).

These figures, however, cannot be viewed as comparing the level of social selectivity. Rather, they reflect strongly the extent of higher education expansion of the parents' cohorts in the respective countries, as well as their general economic situation.

In some countries, data were collected directly or indirectly about the academics' ethnic background. For example, 15 % of the respondents in Canada indicated that they were visible minorities/non-whites. In South Africa, where most whites have English and Afrikaans as the first language, 78 % of the academics named one of these two languages as their first language as compared to 22 % of the total population (Wolhuter et al. Chap. 6 in this volume).

Foreign citizenship at birth and international mobility prior to study in higher education can also be viewed as largely determined by parents or preceding generations. In the CAP survey, however, academics were asked about citizenship and residence at birth. On the one hand, 37 % of the academics in Australia and 34 % in Canada had been foreigners at birth in contrast to 0 % in China and Korea (CAP survey, August 2011 data set). Thereby, the chapter on Canada points out how misleading the – often published – data on current citizenship can be: as already stated, 34 % of academics in Canada had been non-Canadians at birth. As only 10 % were non-Canadians at the time the survey was undertaken (see Metcalfe et al. Chap. 7 in this volume), the figures suggest that more than two thirds of the foreigners at birth officially became Canadians over time.

While parental education is an important factor for the next generation's access to high levels of educational attainment and thus to entry to academic professions, it is not generally viewed as a differentiating factor for varying success within the academic career. This issue is only mentioned in one of the articles as not playing any role for the frequency of publications (Lin and Shen Chap. 13 in this volume).

17.3 Gender

Gender differences provide the issue of socio-biographic background most extensively discussed in this volume, and this reflects how widely this theme is taken up in higher education policy debates. Actually, the proportion of women varies

strikingly in the CAP across countries (see for example the discussion in Arimoto Chap. 15, as well as in Cummings and Bain Chap. 16 in this volume), ranging

– from less than one fifth in Japan and Korea
– to more than half in Argentina and Australia.

Authors of various chapters in this volume agree that relatively high percentages of women in academia are not consistently an indication of a low degree of inequality in this respect. Rather, these authors point out that in some countries a high or increasing proportion is due to a relatively low attractiveness of the academic profession, at least in major sectors of higher education in countries like Portugal and Mexico (Santiago et al. Chap. 10, and Gil-Antón et al. Chap. 5 in this volume); moreover, these authors indicate a disadvantaged situation of many women among the academics employed of their country – occasionally even described with terms such a "segregation", "glass ceiling", etc.

Actually, the proportion of women is lower in most countries in high-ranking academic positions than in lower-ranking ones, thus indicating inequality of gender in the process of career progression. As the patterns of ranks vary substantially by country, a more valid comparison can be offered by comparing the proportion of women according to ranks. Accordingly,

– the share of women among senior academics (full professors and associate professors) at universities responding to the CAP questionnaire is only 13 % in Korea, 14 % in Japan, almost one fifth in Germany, the Netherlands and Hong Kong and roughly between one quarter and two fifth in other advanced countries, while relatively high in emerging countries (between 33 % in Argentina and 46 % in South Africa);
– in all countries except for Japan and South Africa, the share of women among junior academics at universities is higher than among senior academics, i.e. ranging from 14 % in Japan and 20 % in Korea and less than 40 % in Germany and the Netherlands to more than half in Australia (63 %) and Argentina (54 %) (see Teichler et al. 2013, p. 79).

In various chapters of this book, women are reported to be more often in lower-ranking academic positions, more often short-term and part-time employed, less often represented in science ("laboratory", "hard" fields), less often having a preference for and actually being involved in research, to publish less and to be less satisfied with their professional situation. If controlled by status and field and some other factors, females "do as well as men or even better" in some countries, with substantial differences remaining, though, in Mexico and a gradual difference in some European countries (see Cummings and Bain Chap. 16 in this volume).

It might be added that the above stated figures refer to universities, being defined here as institutions both serving research and teaching more or less evenly. The differences between the situation of women at these institutions and women at other institutions of higher education, i.e. institutions predominantly concerned with teaching, are not consistent across countries. Here comes into play the factor that these institutions differ in many countries according to the composition by field of study as well as to the composition by academic ranks.

17.4 Family

About four fifths of the academics surveyed in the framework of the CAP survey report that they are married or have a partner. The respective proportion ranges from 94 % in Korea to 71 % in Brazil.

In most countries, the majority of partners or spouses are employed. This figure is highest in China (92 %), Portugal (89 %), Norway (82 %) and Finland (79 %), while the mean across countries is 63 % (the percentage refers to all having a partner or spouse). In contrast, the respective percentage is only 25 % in Japan and 36 % each in Korea and the Netherlands.

In more than half of the cases, the employed partner or spouse is an academic as well (34 % on average across countries among those having a partner or spouse). This proportion ranges from 66 % in Norway and 58 % in Mexico to 6 % in Japan and 18 % in Italy.

56 % of the respondents on average across countries report that they have one child or more living at home. This percentage is highest in Korea (94 %) and China (74 %) and, in contrast, quite low in the U.S. (33 %), Mexico (40 %) and the United Kingdom (41 %).

15 % of the academics surveyed on average across countries state that they have interrupted their employment in order to provide home care for children or elder relatives. This proportion is exceptionally high in Korea (36 %), Norway (35 %) and Australia (28 %) (all these data from CAP survey, August 2011 data set).

More in-depth analyses in some countries indicate clear gender differences as regards family life:

- More female academics than male academics do not have a partner or spouse.
- More women with a partner or spouse than men do not have children.
- More women than men interrupt their employment for family reasons.

The impact of the family setting on academic work and life is hardly discussed in the articles of this book. Only in one article, the hypothesis is put forward that the relatively normal family setting is not supportive of the often assumed work ethics, i.e. such a devotion to work that the weekly working hours are likely to surpass clearly those of typical employees and workers (Wolhuter et al. Chap. 6 in this volume).

17.5 Age and Duration of the Academic Career

The authors of various chapters in this volume state the average age or the distribution of academics according to various age brackets. For example, the percentage of CAP respondents being older than 50 years is reported in one chapter (Arimoto Chap. 15 in this volume): ranging from 56 % in Japan and 55 % in the U.S. to 14 % in Malaysia and 9 % in China. Also, the CAP data set suggests that the average age

is slightly higher than 50 years in the U.S., Japan and Italy, but only about 40 years in China, Malaysia and Portugal.

This information, however, is hardly revealing as regards a "young" or an "over-aged" academic profession. One has to bear in mind that the academic profession differs substantially between the countries surveyed, as will be discussed below, according to the entry age to an academic profession, the status of doctoral candidates as students or employees, the employment of young staff as regular staff or auxiliary staff (the latter in most cases not included in the CAP survey), the ratio of junior staff to senior staff, and the typical age at retirement.

Thus, the average age of senior academics at universities (at other institutions of higher education, the entry to senior positions differs substantially) is the most valid measure in this respect. It varies from 56 years in the U.S. to 49 years in other advanced countries. It is somewhat lower on average in emerging countries – reflecting later stages of expansion of higher education – where the figures range from 54 years in Argentina to 43 years in China.

One might add as well that various chapters in this volume refer to the retirement age as well. This seems to be 60 years in some countries, 65 years in other countries and even higher again in other countries. In some countries the retirement age is a fixed line, while in some countries, an extension of the contract beyond the usual retirement age is possible. Finally, there are countries without any fixed retirement age for academics.

As in most countries surveyed, a doctoral degree has become an entry qualification to middle-ranking academic positions at universities, and for a senior position, the age at the award of a doctoral degree might be an interesting reference figure. The university professors surveyed in CAP name an average age of doctoral award of 30 years in Germany, 31 years in the United Kingdom, between 32 years and 35 years in the majority of advanced countries surveyed and slightly higher in Finland and Norway. The average age of the doctoral award is higher in emerging countries: between 35 years in China and 40 years both in Argentina and Mexico (Teichler et al. 2013, p. 81).

17.6 Career Stages at Universities

The career stages and career trajectories for the academic profession differ so much by country that any comparative description is bound to provide an incomplete and somewhat distorted picture. Yet, some information has been gathered in the CAP questionnaire that helps to put the academic careers on the map.

First, it is often said that a doctoral degree has been more or less a "must" for becoming a university professor in a senior rank (here defined as equivalent to full and associate professor positions in U.S. terms). Actually, already more than 90 % of university professors providing in Germany and the U.S. information in the framework of the Carnegie survey in the early 1990s were doctoral degree holders

(a few professors have not a doctoral degree, for example in the area of fine arts, or a few exceptional "practitioners" promoted to a university profession).

In the meantime, Australia, Hong Kong and Korea, still reporting a lower proportion in the Carnegie survey, have moved to this level; the same holds true for Canada and Finland; more than three quarters of university professors are doctoral degree holders in the United Kingdom and Norway. The only exception among advanced countries is Italy, where only one third of university professors responding in the CAP survey are doctoral degree holders; a rapid change, however, is underway, visible by the fact that almost two-thirds of junior academics in Italy are doctoral degree holders. In emerging countries, a doctoral degree is on the way to becoming a "must" in Brazil, is held quite often in Malaysia (72 %), but is only held by about half of the university professors in Mexico, China and South Africa and clearly less in Argentina (31 %) (Teichler et al. 2013, p. 81).

The international variety of academic careers is most clearly demonstrated in the CAP survey by the different proportion of academic staff at universities in senior and junior ranks. Among advanced countries, the proportion of employed academics positioned in ranks of full professors and associate professor is

- by far highest in Japan (81 %) as well as in Korea (77 %) and also relatively high in Canada (64 %) and Italy (62 %),
- half in the U. S. and the Netherlands (50 % each),
- somewhat lower in Norway (43 %), Hong Kong (34 %) and the United Kingdom (32 %), and
- finally less than a quarter in Australia (23 %), Finland (20 %), Portugal (19 %) and Germany (15 %) (Teichler et al. 2013, p. 32).

Various features have been taken into consideration to understand these differences:

- Funding of the doctoral stage: In Japan, Korea, Canada and the U.S., most doctoral candidates are self-paying students, students being awarded a fellowship or auxiliary personnel for teaching or research (all categories not addressed in the CAP survey), while hardly anybody is an employee in the university; in contrast, many doctoral candidates in other countries are full-time or part-time employees at universities expected to do both productive work as well as learning and working on the dissertation.
- Dividing lines between regular employment and other modes: In some countries, many junior academics (also among those holding a doctoral degree) at universities are paid on a honorarium basis, are officially auxiliary staff or are paid directly through funds of research contracts, and thus do not count as regular junior academics, while in other countries even many short-term and part-time junior academics are officially counted as academic staff.
- Junior academics as support staff for professors: the ratio of junior to senior academics tends to be high, and many junior academics are understood not to be relatively independent academics (as, in some countries, assistant professors), but rather juniors closely linked to seniors (for example in the framework of a

chair system) and assisting the seniors in research teams or in their respective teaching area. We note in many countries that the ratio of junior academic positions to senior academic positions is higher in the science and engineering fields than in the humanities and social sciences. This is mostly due to the fact that more junior academics in the former groups of fields spend a substantial proportion of time on research – often collaborative research and often coordinated by senior academics.

– Selectivity of academic careers: In some countries, many university graduates have the chance of being professionally active in academia for a while and examine whether this would be their desirable and feasible career choice, but this opportunity for the many is linked with high selectivity up to a senior position; this holds true for example in Germany (see Höhle and Teichler Chap. 14 in this volume). In some countries, in contrast, most of those embarking on a junior academic position stay in academia, but this stability of an academic career is based on the condition that only few graduates in the respective country have a chance of embarking on a junior academic position (or only few want to embark on a junior academic position) at the outset.
– Share of senior positions in the overall academic work: Finally, even if all doctoral study, work based on honoraria, auxiliary employment, etc. is counted as academic work, countries differ substantially in the extent to which academic work is expected to be undertaken by senior academics. Overall, the share of academic work expected to be done by seniors is high in countries such as Japan, Korea and Italy.

The situation is somewhat different in most emerging countries (see for example Leal et al. Chap. 2; Balbachevsky Chap. 3; Pang et al. Chap. 4; Gil-Antón et al. Chap. 5, all in this volume). Some time ago, and often still today, academic positions are filled by persons with a masters-level degree or even with a bachelors-level degree. There might be a probationary period of a few years, and permanent employment would start for those already in a junior career position. Academics have a chance to be promoted step by step and eventually reach a full professor position. They might be given the opportunity of acquiring an advanced degree along with their academic work, or they might even get periods of leave to work on advanced qualifications. Only recently, moves can be observed in these countries – often only in the most prestigious sectors – towards a model of the doctoral degree as the entry qualification.

The employment conditions of junior academics at universities are another important measure of the international variety of academic careers. Notably, short-term employment is highly relevant in this context:

– In advanced countries, 62 % of junior academics at universities on average across all countries (measured as arithmetic mean for the countries included in this calculation) are short-term employed. This proportion ranges from 86 % in Korea, 82 % in Canada, 79 % in Germany and 74 % in Norway through to about half in the U.S., Australia and Norway to about two fifths in Japan and the Netherlands to finally only 28 % in the United Kingdom. A comparison with data

of the Carnegie survey undertaken in the 1990s suggest that short-term employment was already on a similar level in some countries, but has grown somewhat thereafter in Australia and substantially in Japan and Korea.

– In the emerging countries participating in the CAP survey, only 26 % of junior academics at universities on average across countries are short-term employed. Actually, the respective rate is only 6 % in Malaysia, 8 % in South Africa and 15 % in Brazil. In these countries, permanent employment starts in junior positions from the outset or after a short probationary period. Short-term employment of junior academic staff is not common in Mexico (35 %), but widespread in Argentina (68 %) (Teichler et al. 2013, p. 89).

Germany is an example of short-term employment of junior academics embedded in a highly selective academic career and a chair system. 99 % of those recruited prior to the award of a doctoral degree and working on both their dissertation and other professional assignments, are short-term employed over the first at most 6 years. Among the few junior academics without a doctoral degree who even are employed at universities more than 6 years after graduation, only 19 % have transferred to long-term/permanent employment. Among those awarded a doctoral degree and starting or continuing employment in academia, 90 % have a short-term contract in the first years after the doctoral award. More than half phase out to other sectors of employment within the next 5–6 years, while almost half of those remaining in a middle-ranking position (in the CAP survey also classified as junior position) attain a long term/permanent contract. Irrespective of the duration of contracts of those awarded a doctoral degree, there are hardly any tenure-like transitions from junior or middle ranks to professorial positions in Germany corresponding to associate or full professor ranks; rather, candidates have to apply for publicly announced vacant professor positions (see Höhle and Teichler Chap. 14 in this volume).

It might be added here that permanent employment was customary for senior academics at universities in most countries until recently. In the meantime, some countries have moved towards increased short-term employment of senior academics. Thus, the respective mean rate across advanced countries in the CAP survey is 14 % and across emerging countries is 20 %.

The CAP survey did not explicitly address the processes of stepping from junior to senior positions at universities. We know from other sources that in some countries academics can be promoted within a university from junior to senior ranks on the basis of the assessment of the individual candidate's achievements and potentials. In other countries, senior positions are announced and open to competition for many candidates. In some countries, special procedures exist of setting an entry qualification above that of a doctoral degree, such as an advanced degree of a *Habilitation* or the establishment of a national list of candidates for professor positions.

Finally, the CAP survey provided information suitable to address another element of continuity or change in the processing of career progression in academia, namely the similarity or difference of major functions during the junior and senior stages of the academic career. Actually, the CAP study asked the academics to esti-

mate the time spent on various functions both when classes are in session and when classes are not in session. In aggregating the responses to the whole year, one could estimate that both university professors and junior academic staff at universities spend on average across advanced countries 30 % of their working time on teaching and teaching related activities; the respective figure for emerging countries are 36 % for professors and 39 % for junior staff. Thereby, the patterns differ substantially between individual countries as regards the similarity or difference of functions according to academic rank (Teichler et al. 2013, p. 104):

- Junior academics are clearly more strongly embedded in teaching activities than senior academics in six cases: Malaysia, Australia, Hong Kong, the Netherlands, the U.S. and Portugal.
- The proportion of time spent by junior academics and senior academics on teaching and related activities is similar in four advanced countries (Canada, Italy, Korea and the United Kingdom) as well as in almost all emerging countries.
- Junior staff are clearly less active in teaching and more involved in research in four advanced countries: Norway, Japan, Finland and Germany.

In many countries, achievements in research are highly important for advancing to a professorial position, but junior academics have to be active in teaching as much or even more than professors. In four countries, however, where the notion of the Humboldtian idea of the "unity of research and teaching" leans towards a preference for research (see Arimoto 2014), most junior academics in these countries have limited teaching assignments during the junior career stages in order to qualify further for a higher level of research.

17.7 Career and Employment at Other Institutions of Higher Education

Most chapters in this volume address the total academic profession as included in the survey "The Changing Academic Profession": i.e. all regularly employed academics (full-time or part-time, but anyway based on a regular employment contract) at institutions of higher education offering at least bachelor programmes (i.e. excluding institutions of higher and tertiary education offering only shorter and possibly more vocational programmes) in 19 countries (or more precisely 18 countries and the Special Administrative Region of Hong Kong). In some instances, a distinction is made between professors or senior academics (those holding a university professor or an associate professor position equivalent to the staff structure in the U.S.) and junior academics or junior academic staff (all other academics). And in five chapters, the distinction between types of higher education institutions is a major issue. This issue is the main focus of the analysis addressing the Netherlands and is also highlighted with respect to Brazil, Germany, Malaysia and Portugal.

In the previous section as well as in some other publications on the findings of the CAP survey, a distinction is made between universities and other institutions of

higher education. The two types are defined in these analyses of CAP as institutions more or less equally concerned with teaching and research versus those predominantly concerned with teaching. Actually, other institutions of higher education were not included in Argentina, Canada, Hong Kong and Italy and were hardly referred to in the analysis due to small numbers of respondents in South Africa and the United Kingdom. This is because in these countries no or only few bachelor-awarding institutions can be identified as clearly distinct from universities more or less equally concerned with teaching and research. In contrast, we observe a clear formal distinction between universities and other institutions of higher education according to the above criteria (teaching only and teaching/research) in Finland, Germany, Malaysia, the Netherlands, Norway and Portugal. In addition, differences exist between sectors of higher education with a strong research dimension and those with a clear dominance of teaching without being so clearly divided institutions as in the previous categories. Rather, distinctions were made by the persons responsible for the national surveys according to varying criteria in the cases of Australia, Brazil, China, Japan, Korea, Mexico and United States.

The previous section focussed on academics at universities. Those at other institutions differ very much on many issues of careers, at least in some countries. As a consequence, academic careers are only comparable across all the countries in the university sector. To take some examples: Only 41 % of senior academics at other institutions of higher education in Finland are doctoral degree holders as compared to 92 % of those at universities; the respective figures for the Netherlands are 17 % and 83 %. The teaching load of university professors at German universities is only about half of those at other institutions of higher education in Germany. In some countries, more or less all professors at other institutions of higher education have spent their junior career phase at universities, because the former institutions do not have a training function for young scholars, for example no right of awarding a doctoral degree.

Therefore, this section will provide information on the extent of similarity or difference between senior academics at other institutions of higher education and those at universities. Only some key themes will be addressed which also played a role in the previous section. The analysis will include only those 12 countries for which information on the two institutional sectors is available in the CAP survey.

In seven of the 12 countries addressed here, most professors at other institutions of higher education have also been awarded a doctoral degree. The respective proportion of doctoral degree holders is at most about 10 % lower than at universities. In contrast, as already discussed above, a doctoral degree is only held by a minority of senior academics at other institutions as compared to a clear majority at universities in Brazil (39 % vs. 93 %), Mexico (19 % vs. 52 %) and China (15 % vs. 47 %) (according to the CAP survey, August 2011 data set).

In the majority of countries, the composition of academics according to junior and senior ranks is similar to that at universities. Only in the case of Germany, more than two-thirds at other institutions are senior academics in contrast to 15 % at universities (Teichler et al. 2013, p. 32). A closer view, however, suggests that there are middle-rank positions at other institutions of higher education in some countries where academics have a more independent and regular function than most junior

academics at universities, but have a less reputed and less highly paid rank than positions at universities equivalent to associate professorship (see van der Kapap and de Weert Chap. 9; Santiago et al. Chap. 10; Höhle and Teichler Chap. 14, all in this volume).

In eight of the 12 countries, fewer junior academics at other institutions of higher education are employed short-term than junior academics at universities. The differences are striking in Finland (12 % vs. 50 %), Germany (41 % vs. 79 %), the Netherlands (17 % vs. 41 %) and Brazil (5 % vs. 15 %); in the first three countries, these findings indicate a stronger selective junior training function at universities. In contrast, short-term employment of junior academics is slightly more frequent at other institutions than at universities in China, Malaysia, Portugal and the United States.

As regards short-term employment of senior academics, the situation is completely different. Malaysia is the only one of the 12 countries where short-term employment is clearly more frequent at other institutions than at universities (29 % vs. 8 %). In about half of the countries, short-term employment is just slightly more frequent at other institutions than at universities. In contrast, the countries which embarked in recent years on a policy of decreasing permanent employment of university professors did not pursue similar changes for professors at other institutions of higher education; as a consequence, short-term employment is clearly more frequent among university professors in Finland (34 % as compared to 8 % at other institutions of higher education) and somewhat more frequent in the Netherlands, Australia, Japan, Korea and Mexico (Teichler et al. 2013, p. 89).

The percentage of time spent by senior academics at other institutions of higher education on teaching is 42 % on average in the 12 countries for which information is available. The respective percentage of time is 32 %, i.e. 10 % lower, on average across countries among university professors. This difference is most pronounced in Germany (51 % vs. 29 %), Malaysia (46 % vs. 31 %), the U.S. (41 % vs. 28 %) and the Netherlands (45 % vs. 32 %). In contrast, this difference makes up for less than five per cent in Portugal, Australia, Norway and Japan (Teichler et al. 2013, p. 104).

17.8 Mobility

It is widely assumed that mobility of academics is desirable: changing the institution of higher education might be eye-opening; recruiting academics from various institutions might indicate meritocratic emphasis instead of local favouritism; work outside academia for some years might make academics more aware of potentials to make academic practices socially relevant; international mobility might ensure exposure to high quality academic environments somewhere else and contribute to intercultural understanding. Yet, there are also issues at stake which put mobility in a less favourable light: for example, the academic career is viewed as less stable if mobility is on the agenda; mobility might be enforced, if career progression does not go smoothly.

The CAP survey aimed at establishing at how many institutions, educational and otherwise, academics have been employed since the award of the first degree. Some articles of this volume present this frequency for all respondents. As inter-institutional mobility is more frequent in some countries in university careers than in careers at other institutions, as this mobility is most frequent in early stages of the career, and as the likelihood of having been mobile is increasing with the length of employment, the following presentation of data focusses on senior academics and makes a distinction according to institutional type.

University professors on average across countries have been employed at four institutions since the award of their first degree. In four countries, this figure is five or even higher in Italy and in the three Latin American countries included, i.e. Argentina, Brazil and Mexico. In contrast, the figure is lower than two – that means less than one institutional change on average in three countries: China (1.4), Malaysia (1.5) and the Netherlands (1.8). University professors report altogether a surprisingly high figure of having been employed at institutions other than higher education institutions and research institutes or having been self-employed: 1.2 institutions on average; that means that 40 % of the employment different from the current one had been outside academia. This figure is highest among university professors in Argentina and Australia.

Professors at other institutions of higher education on average across countries also have been employed at four institutions. Mobility has been very high among respondents in Portugal (5.1), Brazil (3.4) and Mexico (5.3) and, in contrast low in China (1.3) and Malaysia (1.6). Employment at institutions outside academia is slightly higher among these respondents (1.4 on average across countries) than among university professors (all data according to CAP survey, August 2011 data set).

The picture differs only moderately if one looks at the proportion of senior academics who never had been inter-institutionally mobile within academia (i.e. among institutions of higher education and possibly research institutes). No inter-institutional mobility at all in academia is reported by 70 % of university professors in China, 65 % in Malaysia, 63 % in Portugal and 56 % in the Netherlands in contrast to only 5 % in Argentina, 8 % in Germany and 13 % in the U.S. The respective proportion among professors at other institutions of higher education is 78 % in China and 53 % in the Netherlands in contrast to 14 % in Australia.

Practices vary as regards the extent to which inter-institutional mobility is encouraged. In Germany, for example, universities do not hire persons as professors who had been employed immediately prior at the same institution and do not promote internally from a second-ranking to the highest-ranking professorship, and other institutions of higher education require professors to have had at least 3 years of professional practice outside higher education (see Höhle and Teichler Chap. 14 in this volume). In some countries, however, “inbreeding” (possibly also called “localism” or “endogamy”; see Santiago et al. Chap. 10 in this volume) is widespread. Inbreeding is often viewed as challenging meritocratic career opportunities and possibly undermining quality; this is a widely debated theme notably in Japan and Korea (see Arimoto Chap. 15 as well as Shin et al. Chap. 11 in this volume). An

in-depth analysis, however, does not confirm the widely held views that inbreeding is likely to lower academic productivity (Shin et al. Chap. 11 in this volume). However, further analyses might have to make distinctions between institutions according to academic quality and reputation. In some countries, the most successful academics might be those who spend their whole career at a single highly prestigious university. In contrast, inter-institutional mobility might contribute to academic mobility, if the academics were not at such an institution from the outset.

International mobility varies substantially by country. If foreign citizenship at birth is taken as an – by no means un-controversial – indicator, we note a mean of 11 % across countries. Thereby, as already pointed out above, the rate of foreign-born academics is especially high in Australia (37 %) and Canada (32 %), i.e. countries with active immigration policies, and, in contrast, marginal (i.e. at most one per cent) in Argentina, Brazil, China and Korea (according to CAP survey, August 2011 data set).

The country of the award of the doctoral degree is often taken as well as an important indicator for the mobility of academics. Among academics surveyed holding a doctoral degree only few of those, who are currently employed in the United States, have been awarded the doctoral degree in another country (3 %), and the same holds true for doctoral degree-holders in Japan (4 %). Relatively low rates are also reported for China (6 %), Germany (7 %), Finland (8 %) and Italy (9 %). There are some additional countries where getting a doctoral degree in another country seems to be below world average, i.e. Brazil (13 %), the Netherlands and the United Kingdom (14 % each) and Argentina (17 %). In contrast, the award of the doctoral degree in a country different from that of current employment is most often reported by academics in South Africa (82 %), Hong Kong (71 %) and Malaysia (60 %) and also relatively often in Korea and Mexico (40 % each), Canada (33 %), Portugal (29 %) and Australia (26 %) (ibid.).

Various in-depth analyses have been undertaken in the framework of the CAP study on modes of mobility during the life course (see notably Huang et al. 2014). One example might be reported here. 40 % of university professors on average across countries have spent – since the award of the first degree – at least 1 year in a country that is neither the country of their first degree nor the country of their current employment. This percentage ranges from 62 % of university professors in Hong Kong, 56 % in Australia, 52 % in Brazil and 50 % in Norway to 12 % in China, 27 % in the Netherlands and 29 % each in Argentina and Portugal. The respective average across countries is 28 % for junior academics at universities, whereby the highest figures are reported for Hong Kong (46 %), Japan (42 %) and Brazil (41 %) and lowest for China (3 %), Portugal (12 %) and Argentina (13 %) (see Teichler et al. 2013, p. 86).

It might be added here that study abroad or acquiring the doctoral award abroad is the king's route to academic success in some countries. This is reported notably for Malaysia and Korea (see Pang et al. Chap. 4 as well as Shin et al. Chap. 11 in this volume).

17.9 Academic Values

The range of varied academic values is characterized in this book frequently with the terms "identity", "commitment" and "job satisfaction". Actually the authors of the various chapters referred to five themes most frequently, all of which have been addressed in the CAP questionnaire: time devoted to academic work, preference given to teaching versus research, affiliation to discipline and institutions, consideration of a possible job change, and overall job satisfaction. Comparative information will be provided subsequently regarding these five themes. Other themes have been addressed only occasionally in the chapters of this book, for example major conceptual thrusts in teaching and research, time devoted to teaching versus research, compatibility of various functions in the overall academic work, involvement in direct external and internal service functions, assessment of the working conditions, and various issues linked to job satisfaction.

University professors often have been viewed in the past as devoting substantially more time to academic work than is expected from any ordinary employee and worker, but one is not certain anymore whether this still holds true. According to the CAP survey, university professors in advanced countries report that they spend 47 weekly hours on average across countries on their job. In comparing those eight countries, which were included in the Carnegie survey in the early 1990s and in the CAP survey about 15 years later, we note an average decrease from 52 h to 49 h. According to the CAP survey, the weekly working hours of university professors are more than 50 on average in Hong Kong (53 h), Germany and Korea (52 h each). In most advanced countries, they are higher than 45 h, and lower figures are reported in the Netherlands (44 h), Portugal (41 h) and Norway (38 h). In emerging countries, 40 h or slightly more are reported in Malaysia and South Africa, while figures are lowest in Argentina (33 h) and Brazil (34 h), where a considerable proportion of part-timers are included, and in China (37 weekly hours). If we consider 40 weekly hours as a normal weekly work load, we note a commitment to work of about 130 % in a few advanced countries, about 110–120 % in the majority of advanced countries and a work load close to normal work schedules in a few advanced countries but most emerging countries.

In most countries, junior academics at universities work less than university professors. On average across countries junior academics work 4 h less per week, i.e. 43 h, where this difference is partly due to more frequent part-time employment of junior academics. Senior academics at other institutions of higher education state, also on average across countries, that they work 4 h less than university professors, i.e. 43 h, and junior academics at other institutions of higher education work another 3 h less than professors at these institutions and of junior academics at universities, i.e. 40 h on average across countries (see Teichler et al. 2013, p. 100).

Asked whether they are more interested in teaching and research, around three quarters of academics surveyed in the CAP questionnaire on average across countries state that they appreciate both functions, whereby 46 % lean more towards research and 30 % more towards teaching. Only 14 % have a clear preference for

research and 10 % for teaching. In combining a clear preference and the dominant leaning towards one function, we note an overall clear dominance of research (more than 65 %) in eigth advanced countries (Australia, Canada, Germany, Italy, Japan, South Korea, Norway and United Kingdom), somewhat of a dominance (more than 50 % and up to 65 %) in three economically advanced countries (Finland, Hong Kong and Portugal) and Argentina, and, in contrast, a dominance of teaching in almost all emerging countries as well as in the U. S. (56 %) (see Arimoto Chap. 15 in this volume). As one might expect, research plays a stronger role among university professors (53 % on average across countries) than among professors at other institutions of higher education (37 %). The preferences of junior staff are similar on average to those of professors at the respective institutional type (see Teichler et al. 2013, pp. 120–123). As one might expect, some chapters point out that a research orientation is more widespread in science and engineering than in the humanities and social sciences.

Altogether, we note, in comparing the results of the Carnegie survey and the CAP survey, a slight shift on average towards a stronger research preference. But there are reports as well for some countries – e.g. Argentina and United Kingdom – that more targeted job assignments have spread over the years according to which some university professors should focus almost exclusively on teaching.

On average across countries, 89 % of the academics surveyed state that the affiliation to their discipline or field is important for them. 71 %, i.e. clearly fewer, state a similar affiliation to their department and 64 % – even fewer but still a clear majority – to their institution of higher education. These proportions, however, vary by country. Affiliation to the discipline is clearly less pronounced in Italy. The department and the higher education institution are more important for academics in the majority of emerging countries, as well as in Korea, than in other countries. In contrast, the departmental affiliation is relatively low in Italy, Portugal and Japan and is similar on average in these countries to the institutional affiliation. Finally, both departmental and institutional affiliation is both lowest in Germany (50 % and 43 %) and in the United Kingdom (54 % and 39 %; according to CAP survey, August 2011 data set).

The link between affiliation and preference for teaching and research is analysed across countries in one chapter of this volume. Accordingly, a high affiliation to the discipline is more or less equally expressed by those having a preference for research and those with a preference for teaching. However, high affiliation to the department or the institution is more widespread for those having a preference for teaching (see Aiello and Pérez-Centeno Chap. 12 in this volume).

The desire to make a major change in one's job can be interpreted as dissatisfaction or lack of loyalty to their current academic work and possibly its institutional setting. In response to a question in the CAP questionnaire, whether they have considered a major change of job within the last 5 years, 55 % of the academics surveyed on average across countries state that they actually have considered a major change. The respective proportion is clearly highest in the United Kingdom (79 %) and Australia (74 %), while it is exceptionally low in China (28 %) and Argentina (37 %).

In response to the four directions of possible change addressed in the questionnaire,

- 17 % state that they have considered moving to a management position in their institution. This has been considered by more than 20 % each in Malaysia, the United Kingdom, Brazil, South Africa and the U.S. One has to bear in mind, though, that this question is not a neutral one across countries, because a move toward a position of a dean or a vice-president might be considered in some countries as a move to a management position but in other countries as a shift of function within an academic position;
- 33 % on average across countries have considered moving to another academic position within the country of their current employment. This is stated most often by academics in Japan (51 %) and in the United Kingdom (50 %) and least frequently by academics in China (13 %), Argentina (15 %) and Italy (16 %). The high proportion in Japan is certainly surprising, because inter-institutional mobility in academia is generally viewed as low;
- moving to an academic position in another country has been in the minds of 21 % of the respondents on average across countries. This is stated relatively often by academics in the United Kingdom (35 %) and Australia (33 %), but hardly at all by those in China (4 %) and Argentina (6 %);
- finally, moving out of academia for work in other sectors has been considered by 30 % on average across countries, among them more than 40 % in Australia, Korea, Finland and the United Kingdom on the one hand and only 7 % in China on the other hand.

Altogether, the desire to move away from an academic position in one's current institution certainly might be fuelled by dissatisfaction and fading loyalty, but too many other factors come into play to interpret the responses primarily in that way: going to another academic institution in the same country or somewhere else can be a normal step of career enhancement; moving to an administrative position in the same institution might be academically motivated and an indication of institutional loyalty; considering or not considering moves might be strongly influenced altogether by national norms of encouraging and discouraging inter-institutional mobility in academia.

Finally, the authors of the various chapters of this book seem to agree that the overall job satisfaction is a key feature in the analysis of academic values. Job satisfaction on the one hand reflects the way the individual sees her or his conditions, the professional role and the opportunities of acting successfully and meaningfully, and on the other hand, job satisfaction is generally viewed as a major source of motivation and thus a stimulus for work. This can be most influential in a profession like the academic profession, where the character of work can be so much determined by the professionals themselves.

In almost all the countries addressed in the CAP survey, the majority of academics state that they are overall satisfied with their current job. 67 % on average across countries have chosen the scale points 1 or 2 on a scale from 1 = Very high to 5 = Very low. Satisfaction is most often expressed by academics in Mexico (87 %) and also

relatively often by academics in Korea (76 %), Canada (75 %) and the Netherlands (74 %). In contrast, satisfaction is less often stated in the United Kingdom (46 %), Portugal (50 %) and South Africa (51 %).

Already previous studies in this area have shown that senior academics are more likely to be satisfied, because they have more influence and independent work, have a higher prestige and status, and are more likely to be in a secure employment situation. Moreover, prior studies have indicated that research activities often contribute to academics' satisfaction. Therefore, one might expect a higher degree of satisfaction among academics at universities than at other institutions of higher education.

Actually, the available data show that senior academics at universities are on average across countries clearly more often satisfied than junior academics at these institutions: 74 % as compared to 60 %. The respective proportions for other institutions of higher education, in contrast to the expectation expressed above, hardly differ: 72 % as compared to 60 %.

Job satisfaction is clearly most often stated, as already reported above, in Mexico: 87 % of the university professors and a similar proportion of the other academics are satisfied with their current job. Across the subgroups, respondents in Korea, Canada and the Netherlands are highly satisfied, while those in the United Kingdom (for example only 49 % of the university professors) and South Africa (53 % of the university professors) are less often satisfied. In some countries, we note clear distinctions according the sub-groups. While university professors in Argentina belong to the very often satisfied ones (81 %), junior academics of this country belong to the least satisfied ones (49 %). In Malaysia, academics at other institutions of higher education are more frequently satisfied than those at universities. Junior academics at universities in Japan more often state satisfaction (81 %) than other academics in this country. Finally, junior academics at other institutions of higher education in Germany (36 %), Australia (43 %) and Portugal (44 %) are clearly less often satisfied than other academics in their respective country.

In the various chapters of this volume, we do not note a consistent pattern across disciplines. Those in scientific fields are more highly satisfied than those in humanities and social sciences in Malaysia (see Pang and et al. Chap. 4 in this volume), while hardly any difference is observed in this respect in Finland (Aarrevaara and Dobson Chap. 8 in this volume). According to several country reports, women are less satisfied than men with their current job. Finally, those preferring research and those spending substantial proportions of their time in research are more satisfied on average than those leaning towards teaching.

Finally, it is worth pointing at some more in-depth analyses as regards satisfaction. First, among highly productive scholars (in terms of the number of publications), many are highly satisfied on the one hand and many highly dissatisfied on the other hand (see Lin and Shen Chap. 13 in this volume). Obviously, some of the most successful academics have very high expectations regarding their professional environment and express dissatisfaction at the discrepancy between high expectation and the perceived reality. Second, the more academics express a strong affiliation to their discipline, to their department and to their institutions, the more highly they are satisfied with their job (see Aiello and Pérez-Centeno Chap. 12 in this volume).

17.10 Some Concluding Observations

The world-wide debates on higher education, e.g. on expansion of higher education, "knowledge society", "world-class universities" or "academics under pressure" suggest that higher education faces similar challenges all over the world and moves in similar directions. Also in the project "The Changing Academic Profession", emphasis is placed on select themes where similar issues seem to be at stake across countries: a growing strength of management, an increasing expectation on higher education to be visibly relevant, and a growing internationalisation.

The chapters in this volume, in fact, indicate similar trends to a certain extent. For example, a reduction of inequality by gender, an enhancement of the employment and work situation of junior academics, and a growing role of the doctoral award for academic careers in countries where it has not been a "must" in the past. There are noteworthy distinctions as well for which the analyses in this volume did not examine changes over time. For example, academics often have highly educated fathers and mothers, and a substantial proportion of their partners and spouses are academics as well. But altogether, a persistence of distinctions in the context, the norms and actual values, views and activities of academics according to country seems to dominate the scene. To take the same examples: the share of women among university professors varies by country between 13 % and 46 %, the proportion of short-term employed junior academics at universities between 86 % and 6 %, and the share of university professors holding a doctoral degree between 99 % and 31 %.

The differences between countries seems to be in part influenced by respective regulations and policies, in part by norms and expectations outside or inside academia, in part by the different stages of economic and academic development, and obviously by different ways by which the academics themselves react to their conditions and shape themselves and their professional role. There is not a single factor out of these bundles of factors which is dominating the scene.

A common element across countries is certainly the fact that academics have a long period of learning prior to embarking on an academic career, and subsequently they go through a long period of concurrent enhancement of competences and productive work before they are understood to be fully-fledged and influential members of the academy. In many countries, the early stages have become risky, highly selective and not quite as transparent as in the past. We observe moves in many countries towards at least a higher transparency and regularity. But again, differences are striking: at what age and stage of the career regular employment begins, at what stage permanent employment spreads, how many major career steps are institutionalized, to what extent mobility between institutions is stimulated or discouraged, and whether promotion to professorial positions is dominated by a logic of individual screening and promotion or by a logic of open competition.

There are many indications that the regulations and policies, the traditional norms and similar factors have quite an influence on the strategic decisions the individual academics actually take. Yet, academics do not turn out to be just reacting to

the prevailing conditions, pressures and expectations. For example, on average across countries 11 % of senior academics at institutions more or less equally concerned with teaching and research state that they have a clear preference for teaching and 30 % lean more towards teaching; in reverse, 7 % of academics at institutions predominantly concerned with teaching have a clear preference for research and 36 % lean towards research. Or if one looks at differences between individuals within a country, one notes, for example, that academics react quite differently to the increasing expectations to be visibly relevant. Some underscore theoretical and methodological enhancement without concern about relevance, others believe that both care for theory and relevance is compatible, others accept a dominance of application, others again understand relevance as taking actively a critical approach vis-à-vis the dominant expectations, etc.

In contrast to the varying conditions and expectations as well as to the varying academics' values, views and activities, the academics' degree of satisfaction with their current situation is quite similar between countries. On average, senior academics are clearly more highly satisfied than junior academics across countries – a finding which strongly reflects differences in employment conditions and to a lesser extent some work conditions, such as autonomous decision-making. But it is noteworthy that the average statements of senior academics from the individual countries seldom differ substantially from the average across countries, and the same holds true for junior academics. Only academics of three countries (those in Mexico positively and those in the United Kingdom and South Africa negatively) differ consistently across sub-groups of institutional type and rank.

Both the varied responses to conditions and expectations as well as the overall relatively high degree of satisfaction across most countries suggest that academics might view themselves to be a profession "under pressure", but certainly not as strongly steered profession. Values and strategic options might be "mainstream" to the prevailing conditions and expectations in many instances, but there is obvious room for other options and strategies.

17.11 Postscript: Limitations and Potentials of an International Comparative Survey of the Academic Profession

The various chapters of this volume have shown that we can see various features of higher education in a new light, if comparable information is available on other countries. Comparative research often is characterized as a 'gold mine', which opens our eyes. It can tell us a lot about features of our own national system. Is this a more or less worldwide phenomenon which we cannot attribute to specific circumstances? Is this one of the typical options? Is this fairly unique? What alternatives exist, might be feasible and could lead to improvement?

It would be misleading, however, to argue that the survey of the academic profession that constituted the basis for this book used an ideal methodology, that its instrument was more or less perfect, and that the analysis performed surpassed the constraints of our daily experiences and our national analysis. Some limitations experienced in this comparative study should be mentioned here at the end, in order to put the achievements of this study and specifically this book, in a realistic perspective and in order to stimulate further improvement of research in this domain.

First, we must state that the composition of the almost 20 countries participating in the survey is not perfect in representing the variety of higher education systems in the world. Participation of countries also depended on the fact of whether we knew higher education researchers in the various countries who could undertake such a study and whether scholars of the respective countries were successful in raising the necessary funds. The study would have been more well-rounded if more of the small academically successful countries, e.g. Sweden and Switzerland, additional countries representing influential models, e.g. France, and more large countries, e.g. India and Russia, had been included.

Second, the collaboration of about 100 scholars from almost 20 countries turned out to be valuable in stimulating ideas, which a much smaller research project most likely would not have stimulated. However, a large team of scholars from many countries presents significant challenges. For example, the complex setting often leads to delays of some segments of the research projects; some publications are only available some years later, when one ideally would like to have already a new survey. Moreover, data sets on so many countries often are interpreted superficially: it becomes obvious that the interpreting scholars have in-depth knowledge of some of the countries addressed, but lack interpretative potential as regards the findings from many other countries.

Third, any comparative survey has to make strategic decision as regards the target group to be surveyed. In this study, the decision was made to survey employed (possibly part-time) academics at institutions of higher education providing study programmes which lead at least to a bachelor degree. As regards many objectives of the study, this can be viewed as the best possible option. In analyzing the biographies and careers of scholars, such a definition, though, has its limitations. It would have been interesting, as well, for this theme to analyze the views, activities and professional situation and life-path of persons who are on the margin of the system – i.e. doing academic work without being employed for it (i.e. many doctoral candidates, academics funded through fellowships, lecturers paid for individual courses, etc.) or stepping in and out of academic careers (for example, there are sectors of higher education in some countries, where work experience outside academia is an advantage or even a requirement for a subsequent academic career).

Fourth, international comparative projects of this kind vary regarding the amount and kind of coordination. In highly coordinated projects, particularly when they are funded from a common source, efforts are made to agree to do all analyses according to a similar conceptual and methodological approach. In contrast, comparative

projects may be a 'loose federation' of scholars. This project belongs to the latter type. As a consequence, the authors of each chapter of this volume shaped the analyses according to their preferred conceptual frameworks and their preferred operational approaches. This certainly has led to an interesting variety and towards a bouquet of creative ideas, but this makes it difficult for the reader to compare the findings from different countries by reading across the respective country chapters.

Finally, a general survey of the academic profession has to face the problem that a broad range of themes has to be covered in a single questionnaire. Although agreement was reached to design a questionnaire which required the respondent to spend as much as about 1 h, the number of questions for each individual was bound to remain small. Altogether, about a dozen themes were addressed, and at least half of them were treated as thoroughly as the theme of this volume, i.e. the biographies and careers of academics. Thus, similar volumes as this one have been published on academics' situations vis-à-vis governance and management, also on the internationalization of higher education, on the expectations for the relevance of academic work, on teaching and research, and finally on academics' professional satisfaction. As a consequence, however, this volume has been based on a range of information on biography and careers which ideally should have been wider.

In spite of such sub-optimal conditions, the scholars participating in this international project "The Changing Academic Professions" are convinced that the project has elicited valuable findings worthy of in-depth analyses in various respects. The results have inspired scholars from various regions and countries to employ a modified version of the questionnaire for further analyses. Altogether more than 500 book and journal articles have been written and published in the meantime on the findings of the initial project or its successor. The list of publications starting from preparatory reflections to analyses undertaken various years later is published in this volume as Appendix A.

Moreover, many scholars participating in the project decided to undertake a similar survey 10 years later, i.e. in 2017. This new project should provide the opportunity to measure change over time and address new issues which have arisen recently. But this new project also aims at learning from the experiences of the previous one and at improving the conceptual framework, the project design, the modes of operation and the thrusts of analysis. Among other new additions, a special survey on the early years of the academic profession is envisaged. This will allow the researchers to include young academics involved in a mix of learning and academic work who are not in regular academic positions as well as to widen the range of themes addressed by the questionnaire regarding the biography and career of academics.

Academic work tends to be an unlimited process of searching for improvement. The authors of this volume hope that it contributes to the better understanding of the biographies and careers of academics. But they also hope that, in the process of analysis and writing this book, they have developed ambitions for improved future analyses.

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Appendix
A New Bibliography of Publications of the Project "The Changing Academic Profession" (CAP) and Related Projects

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This bibliography comprises books and articles which were written in the framework of the international comparative project "The Changing Academic Profession" (CAP) between 2004 and 2015. It also includes publications generated in the framework of regional projects and national projects which employed a similar questionnaire survey as the one developed in the CAP project, notably "Academic Profession in Europe: Responses to Societal Challenges" (EUROAC) and "The Changing Academic Profession in Asia" (APA), as well as surveys undertaken in Russia and Slovenia.

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