
The Early Career Paths and Employment Conditions of the Academic Profession in 17 Countries

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The expansion of higher education systems, new demands on institutions and growing pressures on resources have become common trends across most developed countries. They bring increased expectations of academic staff and appear to lead to greater differentiation in their work roles and activities. At the same time, the backgrounds of some academics are changing and they are developing new specialisms and interdisciplinary collaborations, becoming more mobile domestically and internationally and, for some, the profession is becoming increasingly insecure. The *Changing Academic Profession* study has produced a rich set of data on the preparation of academics for their roles and the individual circumstances of their working lives, among other aspects of the profession. Respondents to the survey reported on the degrees they have attained, the countries in which they studied for them, the age at which they qualified and the nature of the doctoral training they received. This paper explores the early career paths of academics, makes initial comparisons between different higher education systems and begins to explore how some of these national systems interrelate with each other through academic mobility. Respondents also reported on the disciplines they studied and now teach, the number of institutions worked in and their contractual conditions and income. These data give an indication of the various degrees of flexibility and mobility required of – or chosen by – academics in the early and later stages of their careers and the stability, or perhaps rigidity, of different higher education systems and national career patterns. The data also supplement other evidence of the employment conditions and remuneration of scholars in an increasingly globalised academic labour market.^{1,2} The conditions of academic work are explored through analysis of the views of survey respondents on the facilities, resources and

personnel needed to support it and the degree of research collaboration undertaken. Academics from the 17 countries in the study seem more content with the physical and technical resources provided by their institutions than the personnel and funds available to support teaching and research. Finally, it is suggested that the propensity for collaborative or individual research may be partially related to national differences in academics' mobility during their training for the profession.

Introduction

The expansion of higher education systems, new demands on institutions and growing pressures on resources have become common occurrences in developed countries. These trends bring increased expectations of academic staff: to be more highly qualified, international in outlook, dynamic and useful to the wider society. They also appear to lead to greater differentiation in academics' work roles and activities, as distinctions emerge between different disciplines, types of institutions within national higher education systems, and grades or ranks in the profession. At the same time, the backgrounds of some academics are changing and they are developing new specialisms and interdisciplinary collaborations, becoming more mobile domestically and internationally and, for some, the profession is becoming increasingly insecure.

The *Changing Academic Profession* (CAP) survey has produced a rich set of data on the preparation of academics for their roles and the individual circumstances of their working lives, among a range of aspects of the profession, some of which are covered by other contributors to this special issue of the *European Review*. Respondents to the survey reported on the degrees they have attained, the countries in which they studied for them, the age at which they qualified and the nature of the doctoral training they received. The first part of this paper deals with the early career paths of academics, makes tentative comparisons between different higher education systems and begins to explore how some of these national systems interrelate with each other through academic mobility.

Respondents to the (CAP) survey also reported on the number of institutions worked in and their contractual conditions and income. These data give an indication of the various degrees of flexibility and mobility required of – or chosen by – academics in the early and later stages of their careers and the stability, or perhaps rigidity, of different higher education systems and national career patterns. These data also supplement other evidence of the employment conditions and remuneration of scholars in an increasingly globalised academic labour market.

The circumstances of academic work are also explored in the paper through analysis of the views of survey respondents on the facilities, resources and personnel needed to support their research and teaching activities. Finally, the degree of respondents' research collaboration with academics at other institutions

within the same country and with international colleagues is evaluated. To provide a historical perspective where relevant, comparisons are made with the earlier Carnegie Foundation international study of the academic profession,^{3,4} undertaken in 1992, and including nine of the 17 countries that have provided data for the CAP study so far.

The early career paths of academics

Countries vary widely in their structure, provision and support of higher education and this is reflected in the early career paths of academics, the qualifications obtained, the country of study and their experiences of doctoral degree training. This paper concentrates mainly on academics' doctoral training as the data linked to First, Second and Postdoctoral degrees are less easily comparable due to differences in each country's higher education system. Some of these differences will be discussed in this paper.

Degrees obtained

Differences in higher education systems are reflected in the qualifications that academics claim to hold. Finland and Norway, for example, are the only countries where more respondents report holding a Second degree than a First degree. Before the Bologna Process introduced a three-cycle higher education qualification system, parts of continental Europe did not have a First degree 'stopping off' point, and students progressed to a Master's (i.e. a Second degree in terms of the CAP survey) without gaining a Bachelors degree, hence the apparent low proportions of those respondents with a 'First degree'. The number of academics in the UK and Germany who report having a Second degree is lower than most of the other countries surveyed. Once again this can be explained by differences in higher education systems. In some disciplines in the UK, for example, students have been able to progress directly from a first degree onto a doctoral program, although this has become less common.

Table 1 focuses on doctoral degrees. It should be noted that not all respondents who reported obtaining a doctoral degree identified their academic rank.

The responses suggest that more mature higher education systems (e.g. Canada and the US) tend to have a higher proportion of academics with PhDs than the emerging/rapidly expanding systems (e.g. Mexico and Argentina). Apart from one country, the percentage of junior staff holding a doctoral degree is lower than among senior staff. Italy is the only country where the percentage of senior academics holding a doctoral degree is lower than that of junior staff because doctoral programmes were not established until 1980 and the second cycle of the Bologna Process was introduced in 2000. The differences between the proportions of junior and senior respondents obtaining a doctoral degree

Table 1. Percentage of respondents obtaining a doctoral degree, by country and seniority

	MX	AR	CH	MY	FI	IT	BR	NO	PT	AU	UK	DE	JP	HK	US	CA	KR
All Staff	29	32	32	37	45	48	58	60	72	73	73	78	78	82	83	92	97
Senior Staff	36	37	49	73	86	34	75	85	97	92	90	98	78	93	91	94	98
Junior Staff	14	29	17	29	33	69	38	37	82	72	80	67	76	73	71	88	97

Country key: AU = Australia; AR = Argentina; BR = Brazil; CA = Canada; CH = China; DE = Germany; FI = Finland; HK = Hong Kong; IT = Italy; JP = Japan; KR = South Korea; MX = Mexico; MY = Malaysia; NO = Norway; PT = Portugal; UK = United Kingdom; US = United States of America.

appear widest in Finland, Norway, Malaysia and China. This is because, within these systems, individuals can train for the doctorate whilst holding a junior post at a university. In Norway and Finland, for example, doctoral candidates are not given the formal status of 'student' and are therefore considered junior members of academic staff and included in the country's sample. In South Korea and Canada, it seems that holding a doctorate has virtually become a minimum threshold for new entrants to the profession. In several other mature systems, this also appears to be true for senior positions.

Given the emergence of a global higher education market, the internationalisation of students and academic staff has become more widespread. In the majority of countries, those obtaining their First degree from another country are less than 15% of the total. Of the six countries with more than 15%, four are Commonwealth countries (Australia, Canada, Malaysia and the UK) and one (Hong Kong) was a British territory until 1997. Latin American and Asian countries (China, South Korea, Japan, Brazil, Argentina and Mexico) tend to have the smallest proportions of academics with First degrees from other countries (although Italy has the second lowest proportion). Hong Kong is the only territory that has a minority of academics who obtained their First degree from within the territory.

Table 2 shows the proportions of those respondents in each country who obtained their doctoral degree in the same country. Again, it should be noted that not all staff who reported where they obtained a doctoral degree also identified their academic rank.

Hong Kong and Malaysia are the only two countries where less than 50% of academics surveyed obtained their doctoral degrees within the country in which they are currently working. For senior members of staff in these two countries the percentages are even lower (17% and 28%). In Malaysia, universities prefer to employ senior members of academic staff that have obtained their PhD abroad, especially if they have studied for a Masters and First degree locally. This is

Table 2. Percentage of respondents obtaining a doctoral degree in the country of current employment

	HK	MY	KR	MX	CA	NO	AU	PT	IT	AR	UK	BR	FI	DE	CH	US	JP
All Staff	26	37	55	59	68	68	74	74	82	83	85	86	91	91	94	94	96
Senior Staff	17	28	53	66	67	83	61	66	71	77	87	84	91	91	93	93	95
Junior Staff	35	47	59	40	68	47	75	81	92	87	82	92	90	91	95	94	100

Table 3. Country where doctoral degree obtained: percentage of respondents in selected countries

Hong Kong									
Hong Kong	Japan	Germany	China	Other	Canada	Australia	UK	US	
27	1	2	2	3	6	10	22	29	
Malaysia									
Malaysia	Canada	Japan	Other	Australia	US	UK			
40	1	2	4	5	11	37			
Korea									
Korea	UK	China	Other	Japan	Germany	US			
57	1	1	2	4	5	30			
Mexico									
Mexico	Italy	Japan	Germany	Brazil	Canada	UK	US	Other	
59	1	1	1	1	2	5	12	18	

especially true in science and technology related fields, where studying abroad is believed to broaden networks and prevent parochial cultures. As the paper discusses in detail below, Hong Kong attracts large numbers of academic staff who have trained elsewhere, predominately within the United States (see Table 3).

Apart from Mexico, Norway and the UK, the percentage of junior staff holding a doctoral degree from the country in which they are currently employed is higher than it is for senior members of staff. This suggests that doctoral students in these countries obtain junior posts within the national higher education system in which they have been trained. In Finland, Germany and the US

there is less than a 5% difference between senior and junior staff obtaining their doctoral degree in the country of current employment. As discussed below, this reflects the nature of these countries' higher education systems as attractors and/or retainers of both students and staff.

Only Hong Kong and Malaysia have a minority of academics who obtained their Doctoral degrees within the country, and the vast majority of the remainder obtained them in the UK and the US.

Those working in the US, Finland, Australia and the UK are more likely to have obtained their Doctoral degree and their First degree from the country in which they are currently working. Most academics working in Japan and China have obtained their First, Second and Doctoral degrees within their country of current employment. Finland and Italy are not far behind.

We might summarise the characteristics of academic flows between (and within) national higher education systems as follows:

- (a) 'Study abroad' – the movement of individuals out of a national higher education system to undertake doctoral training abroad before re-entering the system for postdoctoral study and/or employment.
- (b) 'Magnetic' – the flow of academics to a higher education system for study, work or both.
- (c) 'Self-contained' – the internal movement of academic staff from study to employment within a single higher education system.

Countries can display one or more of these characteristics. For example, the US and UK higher education systems attract individuals to study and work whilst also exhibiting a strong self-contained domestic labour market. The influence of North American universities as 'people attractors' is well documented.^{5–8} North American institutions are 'open and flexible, provide superior scholarship and salaries' and are thus 'extraordinary global attractors of talent'.⁶ 'Foreign doctoral assistants have become essential to American research; the United States is the main site for postdoctoral places and short-term academic visits, and also draws later career migration'.⁶ Welch describes the US and the UK as major 'producers and exporters of academic labour'.⁸ Yet, there is also a large majority of academics who complete their training in these countries and remain employed within the national system.

In other countries, one characteristic tends to predominate. In the case of Korea and Mexico this is 'Study abroad'. It appears that significant proportions of Korean and Mexican academics study for their doctorates outside of these countries (mainly in the US) and then return to take up academic employment and, in the case of Korea, postdoctoral study. In the survey, 99% of Korean academics listed their current country of citizenship as the Republic of Korea. Ninety-eight percent of academics working in Korea completed their first degree

in the country, whilst only 55% had undertaken doctoral studies within Korea. Eighty-nine percent of Korean academics had completed postdoctoral study within the country, which suggests an outward movement at the doctoral level. This situation has been driven by the limited educational choices and a strong public demand for the best education possible, which has not been satisfied domestically.⁹ In Mexico, barely 1000 students were enrolled in Mexican PhD programs in 2001 compared with 45,000 in the US.¹⁰

The international recruitment of staff in Hong Kong makes it a major importer of talent: the dominant academic flow can be characterised as ‘magnetic’. However, the high proportion of doctorates obtained outside the country is a significant reduction from the earlier Carnegie survey. Nevertheless, the majority of Hong Kong academics who originated in mainland China obtained their doctorates in the US or elsewhere.¹¹ Japan, China and Italy are examples of ‘self-contained’ systems with the majority of academics stating they completed their studies in the country in which they are now working. These countries are either more ethnically homogeneous, do not use English as a language of instruction, and/or have a relatively small range of other countries to draw upon that speak their language.⁶

Age when degrees obtained

Academic respondents in English-speaking and Asian countries obtained their First degree at a younger age than their counterparts in continental Europe and Latin America. However, in 14 of the 17 countries, the age range is only between 23 and 25 years of age. The variation among all countries in ages for First degrees obtained (4 years) is far narrower than for Second degrees (13 years) and Doctoral degrees (8.5 years). Those in the English-speaking countries, and especially the UK, completed their training earlier than other countries partly because the training is shorter. In England and Wales, for example, First Degrees have tended to consist of three years full-time study, and, throughout the UK, a Master’s programme is one year full-time study. Doctoral study is nominally three years full-time study. The duration between obtaining the First and a Doctoral degree is shorter for academics in Italy and Germany than for their counterparts in other countries, including the English-speaking countries. In Italy, for example, first degrees are long degrees and doctoral degrees have a fixed length of three years.

Preparation for the academic profession

The nature and quality of graduate and doctoral education has come under increasing scrutiny in recent years, not only as training for highly skilled occupations beyond the academy, but also for careers in the academic profession itself.¹² The forms, duration, funding and status of doctoral programmes vary

considerably. In many Western and Northern European countries (although not the UK), for example, doctoral candidates are regarded as junior or assistant researchers and not considered to be students, as mentioned above.

The majority of academics in each country chose their own research topic (Table 4). In all the countries, the vast majority of academics were required to write a thesis or dissertation. Significantly fewer respondents in China and Japan, however, were required to do this, it seems.

Higher proportions of academics in North and Latin America were required to take a prescribed set of courses than in Western Europe, where the master/apprentice model still holds sway (Table 5). In Italy, for example, doctoral schools were only introduced in the mid-2000s. Academics in Asian and Latin American countries were more likely to have received intensive faculty guidance about their research than those in most European countries. However, Portugal and Italy are the outliers, with 92% and 82% of respondents, respectively, reporting this. A minority of academics in all countries received training in instructional skills or learned about teaching methods. This is the subject of a common complaint made by doctoral degree holders and highlights not only the narrowness of the curriculum but also the fact that doctoral programs provide virtually no training in pedagogy and offer limited opportunities to teach.¹³

The proportion of respondents receiving a scholarship or fellowship ranges from 21% (Germany) to 81% (Italy), with no obvious pattern.¹⁴ Likewise, the range of those in receipt of an employment contract during their studies ranges from 5% in Japan to 64% in Norway (Table 6).

A majority of academics in Latin American countries were involved in research projects with faculty or senior researchers, with a massive 86% in Argentina (Table 7). In all countries, a minority served on an institutional or departmental (unit) committee. Together with the limited training in pedagogy, this general lack of concern with the service role of an academic skews preparation for the profession throughout the CAP countries towards research and research-related activities.

Respondents in Latin and North American and continental European countries reported having worked in more institutions since their first degree than their counterparts in Asian countries, despite the younger age at which the latter obtain this degree (Table 8). ‘Self-contained’ academic labour markets may be characterised by fewer moves between institutions, especially in those systems, such as Japan, where institutional ‘inbreeding’ has been prevalent.¹⁵

Employment conditions and pay

The diversity of higher education, and the academic profession in particular, is highlighted by the range of conditions of employment and the forms of

Table 4. Doctoral degree training: percentage of respondents agreeing, by country

	CH	AR	DE	JP	IT	NO	UK	FI	MY	PT	CA	AU	BR	KR	HK	US	MX
You chose your own research topic	53	58	58	60	61	62	64	68	68	69	74	75	79	81	84	84	88
	CH	JP	CA	FI	KR	MY	NO	IT	HK	PT	UK	US	AU	BR	MX	AR	DE
You were required to write a thesis or dissertation	79	83	90	93	95	95	95	96	97	97	97	97	98	98	98	99	100

Table 5. Doctoral degree training: percentage of respondents agreeing, by country

	DE	AU	UK	PT	MY	JP	IT	HK	FI	MX	CA	AR	NO	CH	KR	US	BR
You were required to take a prescribed set of courses	15	16	19	22	34	36	51	54	64	68	69	70	70	73	81	83	87
	UK	AU	DE	NO	FI	MY	CA	HK	JP	AR	KR	BR	US	CH	IT	MX	PT
You received intensive faculty guidance for your research	23	28	29	30	35	41	48	50	60	61	63	68	70	71	82	87	92
	DE	NO	PT	FI	AU	UK	JP	MY	BR	HK	CA	AR	CH	IT	KR	US	MX
You received training in instructional skills or learned about teaching methods	8	8	11	12	14	14	15	15	17	19	20	21	22	25	26	34	36

Table 6. Doctoral degree training: percentage of respondents agreeing, by country

	DE	CH	MX	JP	PT	HK	FI	BR	KR	AR	AU	UK	US	CA	MY	NO	IT
You received a scholarship or fellowship	21	31	38	49	52	57	58	64	64	66	67	68	72	73	73	73	81
	JP	IT	PT	BR	UK	MY	MX	HK	AU	CH	FI	KR	AR	US	CA	DE	NO
You received an employment contract during your studies (for teaching or research)	5	18	25	27	33	34	35	38	39	39	47	51	53	57	59	63	64

Table 7. Doctoral degree training: percentage of respondents agreeing, by country

	JP	UK	AU	DE	HK	MY	NO	US	BR	FI	CA	PT	CH	KR	IT	MX	AR
You were involved in research projects with faculty or senior researchers	21	36	40	41	42	44	44	50	52	54	56	56	58	59	67	71	86
	JP	KR	CH	PT	IT	UK	HK	AU	DE	FI	NO	BR	MX	CA	US	MY	AR
You served on an institutional or departmental (unit) committee	3	5	8	9	11	12	13	18	18	19	24	27	28	29	31	32	38

Table 8. Number of higher education institutions employed in since first degree/highest degree (median). Mobility between institutions

	CH	IT	MX	MY	PT	AR	AU	BR	DE	HK	JP	KR	NO	UK	CA	US	FI
Since first degree	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	
Since highest degree	1	1	1	1	1	2	2	1	2	2	1	2	2	2	2	2	

regulation of academic labour markets found in those countries participating in the CAP study. These conditions vary according to the history, resourcing and governance of the different national higher education systems.¹⁶ Academics can be civil servants, public employees or private employees and this can determine whether their employment is subject to public law (civil servants) or private law (employees). In several continental European countries, for example, academics are public officials subject to state law, often with the privilege of tenure (i.e. protection against dismissal) but without the rights to collective bargaining between their representatives (usually, unions) and their employers, or the ultimate sanction of strike action. In many other countries, however, academics have the legal status of an employee and a contract of employment that regulates their working conditions. In the UK, for example, even though higher education institutions are funded mainly through public expenditure and there is only one private university, these contracts are based on private law. Tenure was abolished in 1988 in universities, and had never applied in the polytechnics. A number of countries have recently transferred responsibility for the employment of academics from the state to institutions, including Italy and Japan, and this is having a significant impact on the nature and conditions of academic work.⁵

Within some national higher education systems – the US and Japan, for example – there is a mixture of public and private institutions and, although academics in both types may be employees subject to private law, the method of regulating the employment relationships may differ. For those working in public institutions, collective bargaining tends to predominate, while those in the private sector may be subject to the regulations of their employing institution, which can vary from one to another.¹⁷ Further disparity may be introduced through forms of individual bargaining between a member or groups of academic staff and an employer, whether a private or public institution.¹⁸ There is also evidence that the interpretation of tenure may be changing, even in those countries where it is

enshrined in law. The grounds for dismissal that may be proscribed, the categories of academic staff that are eligible for this status and the introduction of redeployment, voluntary redundancy and early retirement can all have an effect on the strength of tenure in practice.¹⁹

Modes and duration of employment

The CAP survey provides rich data on the modes and duration of employment of the respondents in the different countries. Because the CAP dataset has not yet been weighted, these data will need to be compared with statistical analyses of the national academic populations in each country. In a few countries, for example, part-time academics were not included in the sample, in some cases because of the difficulty of contacting them. The data from these countries have not been included in Table 9. Nevertheless, the remaining figures provide some indication of the degree to which the expansion and marketisation of higher education has introduced more varied and flexible employment conditions, particularly in the form of part-time and fixed-term contracts.

In the majority of countries, at least four out of every five respondents reported being employed full-time and, for nearly half of these nations, the proportion was closer to 19 out of every 20. It is possible, however, that full-time academics were more likely to respond to the survey than those on part-time contracts, due to being more accessible and having greater opportunity to complete the questionnaire. In the UK, for example, the official national data source reported the proportion of full-time academics as 67% in 2006/07²⁰ compared with the CAP response of 89%. Academic respondents from Asian countries were slightly more likely to report being employed full-time than most European and English-speaking countries. However, these responses also appear to overstate the proportion of the full-time academic population in Japan.^{21,22}

Table 9. Mode of employment of respondents, selected countries (%)

	AR	BR	DE	AU	UK	PT	HK
Full-time	51	55	82	86	89	94	95
Part-time employed	43	12	14	13	9	3	3
<i>% of part-time academics working more than 50% of full-time</i>	50	68	95	82	80	38	64
<i>% of part-time academics working less than 50% of full-time</i>	50	32	5	18	19	62	36
Part-time with payment according to work tasks	1	32	0	0	1	0	3
Other	5	1	4	0	1	3	0

Table 10. Contract duration: percentage of respondents, by country

Permanently employed	KR	AR	CH	HK	DE	FI	PT	AU	BR	US	CA	JP	NO	MX	UK	MY	IT
	5	6	28	34	36	38	48	50	56	58	71	75	75	79	84	85	
Continuously employed	NO	CA	MY	PT	HK	UK	FI	MX	AR	AU	US	JP	DE	BR	CH	KR	IT
	1	2	3	3	7	8	10	10	12	12	12	15	25	38	49	52	
Fixed Term	BR	JP	MY	UK	MX	CH	NO	CA	US	FI	AU	DE	KR	PT	HK	AR	IT
	5	9	9	9	11	22	22	27	29	36	38	38	43	45	55	72	
Other	KR	UK	AR	AU	BR	CA	CH	DE	JP	MX	NO	US	HK	MY	PT	FI	IT
	0	0	1	1	1	1	1	1	1	1	2	2	3	3	4	15	

Table 11. Research collaboration: percentage of respondents, by country

	FI	NO	AR	MY	KR	BR	MX	IT	HK	JP	DE	UK	PT	CA	CH	US	AU
Working individually/without collaboration on any research projects	16	22	31	31	36	38	38	47	51	51	58	59	61	68	69	74	79
	PT	JP	CH	DE	KR	MX	BR	US	IT	UK	HK	MY	CA	NO	AR	FI	AU
Collaborators on any research projects	44	62	73	74	75	76	78	78	82	82	84	85	86	87	88	88	89
	CH	JP	MX	PT	HK	MY	BR	US	KR	NO	AU	UK	AR	FI	DE	CA	IT
Collaborate with persons at other institutions in your country	37	51	54	54	55	55	61	61	65	66	67	67	69	69	70	72	77
	CH	JP	KR	BR	MY	PT	US	MX	AR	DE	AU	IT	HK	UK	CA	NO	FI
Collaborate with international colleagues	13	24	29	30	32	32	33	35	47	58	59	59	60	61	66	67	70

Argentina (51%) and Brazil (55%) had far fewer respondents employed full-time than in the other countries. Indeed, in Argentina, national data indicate that part-time academics now predominate, with only 13% working full-time at 40 hours per week, approximately 10% at 25 hours per week and 67% at 10 hours per week. This is due to expansion of the academic population, largely in the public sector, in response to growing student demand.²³ Brazil and Mexico also participated in the earlier Carnegie study and it is interesting to compare the results of the two surveys for these two Latin American countries. While the expanded private and philanthropic institutions in Brazil now account for the majority of academics without contracts (let alone part-time contracts),²⁴ the Mexican Government's improvement programme has led to an increase in the number of full-time appointments between the two surveys.²⁵ In 2007, nearly a third of respondents from Brazil reported being employed part-time with payment according to work tasks. Most of those working in private institutions in Brazil are likely to be working part-time, usually in the evenings, and will have no career plans or job security. Hardly any academics from other countries reported being employed part-time with payment according to work tasks.

For most countries with significant numbers of part-time academics in their sample, the mean percentage of the full-time equivalence was close to 50%, with only Argentina reporting substantially less than this. This is backed-up by national data.²³ (The percentage figures for China and Malaysia are higher, but the proportions of academics on part-time contracts are so small as to be insignificant.)

Only in Argentina and Hong Kong did a majority of respondents report being on fixed-term contracts (Table 10). In Argentina, this is a consequence of the 'test mechanism' for recruiting to an academic post, which is awarded for a fixed duration, at the end of which an open contest is called to refill the position.²³ Increasingly, though, universities are introducing renewable contracts, with the effect that over two thirds of respondents reported fixed term employment with permanent/continuous prospects (tenure track). Competition for tenured positions is also highly competitive in Hong Kong, although 'there is a recognized academic career path and reasonable security of employment'.²⁶ Nevertheless, 28% still reported being employed for a fixed duration without permanent prospects. The country with the highest proportion of respondents in this latter category, however, was Germany, with 33%, largely made up of junior or assistant professors or *wissenschaftliche Mitarbeiter*, who can spend long periods of dependence and uncertainty before becoming secure and independent scholars.²⁷ Even in countries, such as in North America and the UK, where the majority of existing academics are permanently employed, newer recruits may be less likely to be awarded permanent contracts because of recent policies on 'flexible' employment.

Pay

It is not surprising that those respondents from mature higher education systems (Hong Kong, Japan, North America and Europe) reported earning the highest salaries and those from emerging/rapidly expanding systems (Latin America, China, Malaysia and Korea) the lowest (Figure 1). Given the variations in costs of living, inflation, exchange rates, other possible benefits of employment (such as pensions, loans, travel and accommodation in some countries), it is difficult to draw firm conclusions on the basis of these data. However, the recent CIHE (Boston College²⁸) international comparison of academic salaries calculates the overall average monthly salaries of nine of the 17 countries in the CAP study and normalises these using the World Bank's purchasing power parity measures to produce a US dollar (\$) value. The rank order in Figure 2 is similar to the CAP findings (except Japan is ranked lower and Australia higher) although the salary levels are different to the CAP survey results due to normalisation. According to this analysis, overall average monthly salaries – for the nine CAP countries included – range from \$1182 in China to \$6548 in Canada. This produces a mean average of \$4143 per month for these nine CAP countries, with Canadian academics earning on average 5.5 times more than their Chinese counterparts.

The CIHE study is an example of a large scale comparator to the CAP data looking at approximately the same time frame and covering a majority of the same countries, but with normalisation for purchasing power. The authors of the CIHE study warn that these figures are not weighted according to the proportion

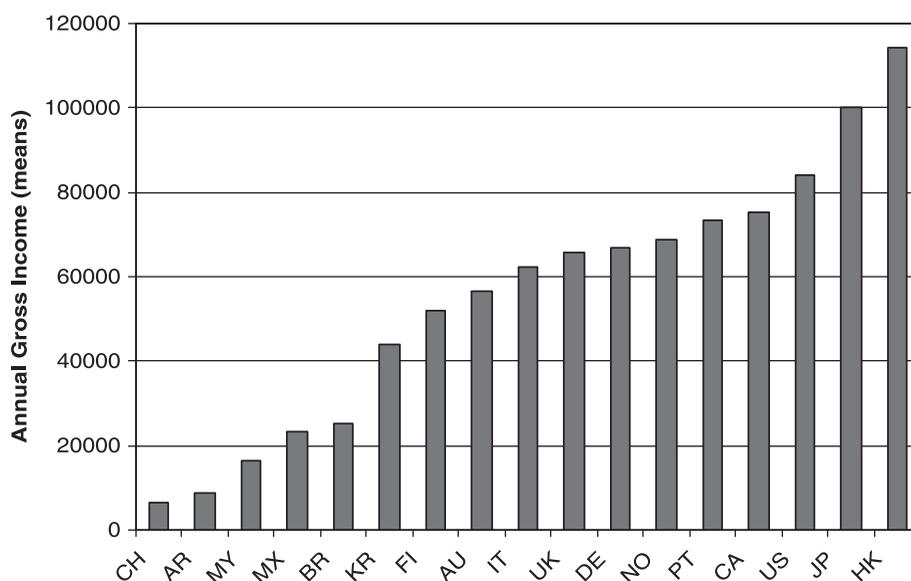


Figure 1. Annual Gross Income in US\$, by country (means).

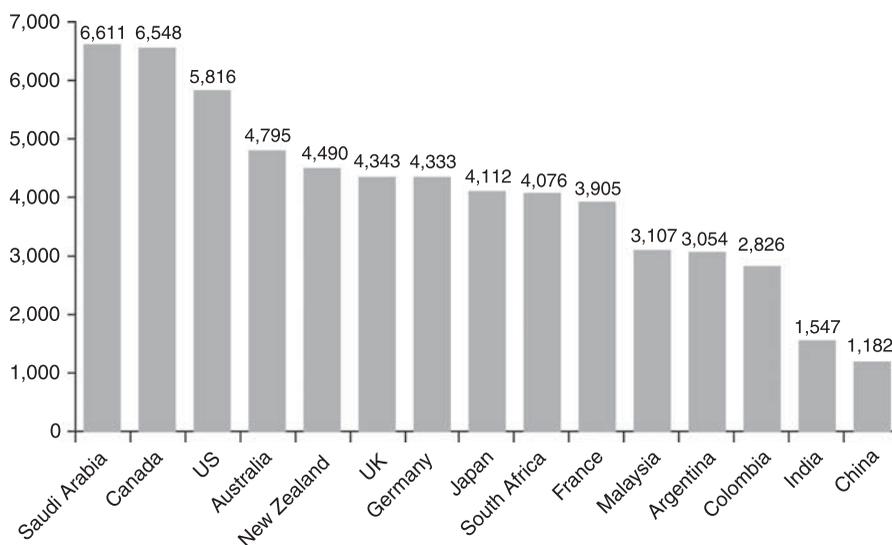


Figure 2. Overall Average Monthly Salaries in US\$ in 2005/06, by country.²⁸

of academics on each pay level. In some countries, such as the US, the proportion of those reaching the professorial grade is much higher than in the UK and Germany, for example. Likewise, as the CAP data are not weighted in order to achieve representative proportions of respondents on each grade, they can only offer an approximate indicator of the comparative salary levels among the CAP countries. Furthermore, salary levels on comparable grades may differ between public research universities and private institutions in the same country. The CAP survey also asked respondents about income from other concurrent employers and from self-employment. Those from Brazil needed to supplement their income from other employment to the highest level among all the countries in the study. However, US academics reported earnings from self-employment in excess of a quarter of their main salary – nearly four times more than the next highest country, Italy.

It is also worth pointing out that, in those countries with relatively high levels of remuneration, the intrinsic rewards of an academic role – such as a high degree of autonomy, interesting work and the esteem of other scholars – may be as important as, or more important than, pay and status.¹⁹ Senior academics, and especially those who manage to raise substantial research funds, may be able to negotiate increased control over their workloads and, to some extent, the nature of their activities. This diversity in working conditions across the CAP study makes comparison difficult within countries, let alone between national systems. The CIHE study, for example, found that differences between the top and entry level academic salaries within systems were not necessarily related to a country's economic development, and that pay differences (as distinct from overall academic

salary levels) in South Africa were greater than in North America, and greater in Argentina than in Germany and France.²⁸

Support for academic work and research collaboration

Given the importance of non-pecuniary rewards to academics, it is essential to consider the broader circumstances of academic work in this assessment of employment conditions.

Support for academic work

CAP respondents were asked to rate the levels of institutional support for academic work, including facilities, resources and personnel. Across all countries, the highest proportions of respondents rated telecommunications, libraries and computer facilities as excellent or very good. Research funding and research and teaching support staff tended to attract the lowest proportions of excellent or very good ratings. Academics in Argentina, Japan and Korea seemed to be less likely to be satisfied with institutional support for academic work, and those in Hong Kong, Norway, Germany and Finland were most satisfied. Compared with the earlier Carnegie study, academics in Hong Kong were also among the most satisfied in 1992, and Japan and Korea among the least satisfied.⁴ Today, computer facilities and library resources were viewed most favourably in many countries. Generally, in 2007, in those countries where there were consistent differences, senior staff were more likely to be satisfied with the institutional support they receive than their junior colleagues.

Research collaboration

The CAP study reveals the increasingly international and collaborative nature of the research carried out in higher education institutions. Developments in information and communications technologies – as well as cheaper and more accessible air travel – will certainly have made international cooperation more feasible. In some regions, multinational funding of research, such as the Framework Programme in the European Union, will also have contributed to this trend, together with national evaluative approaches and funding mechanisms that privilege and reward internationally recognised research, such as the UK Research Assessment Exercise. It would be interesting to investigate whether the proportions collaborating would be higher if only respondents who identify themselves as being active in research and publication were included in the sample.

Generally, it seems that respondents from all countries are more likely to be collaborating with others on research projects than working individually and alone (Table 11). In all but one country, China, over half the respondents were collaborating with colleagues at other institutions within the same country. In half the countries in the study, more than 50% of respondents reported collaborating with

international colleagues. Academics from Finland and Norway were most likely to collaborate with international colleagues and least likely to work on their own. In small but developed countries such as these, scholars in most disciplines will seek international visibility in order to be recognised and respected, even in their own country, which may be seen as too small or restricted a territory on which to build a scholarly reputation.⁵

Larger countries, such as Germany or France, may offer academics a more equal choice between national or international collaboration. However, few respondents in Japan and China reported collaborating with international colleagues and the same factors that discourage students from these countries from studying abroad may also be inhibiting them from working with foreign researchers. Only a third of US respondents reported collaborating with international colleagues, making that country 11th out of the 17 in the dataset. Just five per cent of respondents from the US had co-authored a publication with colleagues located in other (foreign) countries – the smallest proportion except for China – and only 7% had published in a foreign country – the lowest of all countries in the study. This insularity is also reflected in current citation patterns of US academics, and the finding from the 1992 Carnegie survey that far fewer Americans than respondents from other countries believed that a scholar must read books and journals published abroad to keep up with scholarly developments.²⁹

Concluding comments

The early career paths and employment conditions of academics are primarily influenced by the history, resourcing and governance of individual national higher education systems. The systems determine the modes of preparation and training for the academic professions, recruitment practices, employment legislation, labour relations, forms and patterns of remuneration and the status and security of different segments of the profession. However, as common forces begin to transform these systems – expansion, massification, internationalisation, globalisation, marketisation – we can begin to assess the balance of national particularities and global trends, of similarities and differences as experienced by academics in these systems and, in some cases, when moving between them. The CAP study provides insights into these similarities and differences, but the data need to be interpreted carefully in each national context as well as in their entirety before coming to firm comparative conclusions. This paper has made a start on this, but further analysis is required, by those with a deep understanding of each country's system and its particular circumstances as well as those willing to take broader, regional and global, overviews. The impact of regional developments, such as the creation of the European Higher Education Area, the European Research Area and increasing research and development targets also

needs to be assessed. Shifts in the flows – or circulation – of academics and students between and within the Southern and Northern hemispheres should be monitored for their impacts on developing countries' higher education systems and national capacities. The overall demand for, and mobility of, highly qualified expertise in all types of 'knowledge industries' may also impinge on higher education's capacity to attract – and retain – the 'brightest minds'. In conclusion, we highlight some connections between the aspects of employment reviewed in this paper and raise a number of questions for further examination.

First, the importance of national context is underlined when seeking to explain differences in levels of research cooperation between national respondents to the CAP study. It is reasonable to posit a link between the international mobility of academics during training and preparation for the profession and their current level of international research collaboration. It could be argued that contact with academics and students in a different national setting, and exposure to indigenous knowledge, possibly in a different language and culture, during a formative period in an individual's career, might develop a greater propensity to future international intellectual exchange. This may also be true of academics previously or currently working abroad. Indeed, several countries with a relatively high proportion of respondents who obtained a doctorate outside their country of current employment also reported high levels of collaboration with international colleagues. Hong Kong, Canada, Norway and Australia would be examples of this. Conversely, Japan, the US, China and Brazil report lower proportions of foreign doctorates and lower levels of international collaboration than other CAP countries. However, some countries with lower proportions of foreign doctorates also record higher levels of collaboration with foreign researchers, such as Finland, the UK, Italy and Germany. And some national systems with higher proportions of foreign doctorates are also characterised by lower levels of international research cooperation, such as Malaysia, Korea, Mexico and Portugal. In all countries, but perhaps particularly in the latter cases, a more detailed national analysis and interpretation is needed of whether, and under what circumstances, this link can be made. In particular, the different characteristics of the sciences, social sciences and humanities and the condition of national academic labour markets may have an effect on international mobility and collaboration.

Secondly, it also seems likely that the introduction of greater flexibility in academic employment conditions and the reform of traditional career paths will expand the potential for the international circulation of academic labour. Increasing fixed-term employment, including postdoctoral places and short-term academic visits, may open up opportunities for mobile academics. However, these opportunities are more likely to be for researchers than those seeking positions with responsibility for teaching and service, as well as research. As such, they are linked with the new divisions of labour between, for example, those on research contracts and those

employed only to teach. The opportunities are also more likely to be taken up by junior staff at a relatively early stage of their career who wish to broaden their experience and increase their value in the academic marketplace in the country of their host institution, their home country or elsewhere. The majority of regional schemes, for example, in Europe, are aimed at early-career researchers and are even closed to more experienced academics. These developments raise questions about the impact of increased international circulation of young contract researchers on the employment conditions of mid-career, less mobile academics with families, their career paths and progression, the fragmentation of academic activities and the increasing management and evaluation of academic work.⁵

Finally, it is clear from the data on academic inflows that institutional support for study (e.g. scholarships), employment (e.g. salaries) and research (e.g. facilities and funding) play an important part in attracting highly qualified academics from abroad, as well as from within a country. But there is a range of factors and issues beyond institutional control that can either facilitate or constrain mobility (or both at the same time): for example, similarities or differences between countries in pension schemes, national systems of social security and childcare provision (which can present barriers to female researchers in particular³⁰); information or the lack of information about these arrangements, the funding and other support available to facilitate movement, the recruitment procedures used in different countries and actual vacancies;³¹ language and cultural differences and the ascendancy of the English language in education and research; differences in salaries, status, workloads, career patterns, promotion procedures and tenure tracks;³² immigration policy and legislation on highly qualified workers, covering visas and work permits and the time and costs attached to applying for and obtaining these,⁷ including arrangements for foreign doctoral graduates wishing to take up postdoctoral or other academic positions.

These and other issues and questions need to be explored further, through the CAP survey data and other studies, to establish the changing career paths and employment conditions of academics in different national settings and the extent to which there is – or could be – a truly international academic profession.

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