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THE CHANGING ACADEMIC PROFESSION IN ASIA: THE FORMATION, WORK, ACADEMIC PRODUCTIVITY, AND INTERNATIONALIZATION OF THE ACADEMY

Report of the International Conference on the Changing Academic Profession Project, 2014

Organized by: Research Institute for Higher Education, Hiroshima University and Research Institute for Higher Education, Kurashiki Sakuyo University

Research Institute for Higher Education
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FOREWORD

The international conference on the changing academic profession project convened in Hiroshima City, Japan, January 24-25, 2014. It was jointly hosted by the Research Institutes for Higher Education at Hiroshima and Kurashiki Sakuyo Universities.

The theme of the conference was "The Changing Academic Profession in Asia: The Formation, Work, Academic Productivity, and Internationalization of the Academy." Two keynote addresses and eight presentations were made by university professors from seven countries and regions. The present volume is a collection of the addresses and papers presented at the conference.

Professor Akira Arimoto, Kurashiki Sakuyo University and Professor Emeritus Hiroshima University, was one of the main organizers of this event. His keynote address focused upon internationalization of the research-teaching-student learning nexus in the academic profession from an international, comparative perspective. The second keynote was given by Professor William K. Cummings, George Washington University in the United States. His address was titled "Strong States, Strong Systems."

In the first session, Professor Yuto Kitamura, The University of Tokyo, reported on the quality of teaching and research at higher education institutions in Cambodia. And Professor Futao Huang, Hiroshima University, summarized major findings from the international survey on the internationalization of the academy in Asia.

Professor Fengqiao Yan and doctoral student Lu Li, Peking University, reported on the formation of the academy in China in the second session. Then Professor Aida Suraya MD. Yunus, University Putra Malaysia, presented career prospects of Malaysian academics. Professor Pham Thanh Nghi, Vietnam Academy of Social Sciences, reported on academic career development in Vietnam. Professor Akiyoshi Yonezawa, Nagoya University, discussed academic profession in developed countries.

In the final session, Professor Robin Jung-Cheng Chen, National Chengchi University, and Director Ching-Shan Wu, Education Administration in Taiwan, discussed research productivity of higher education in Taiwan. Finally Professor Tsukasa Daizen, Hiroshima University, utilizing research data, commented on the career and productivity of the academic profession in six

Asian countries. Professor Yumiko Hada, Hiroshima University, briefly summarized those reports and made concluding remarks.

There was much discussion and questions among participants during the two days. It is unfortunate those exchanges could not be captured in this volume. Finally I want to express my gratitude to all of those who contributed to the conference.

February 2015

Fumihiro Maruyama
Director and Professor,
Research Institute for Higher Education,
Hiroshima University

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We would like to acknowledge the invaluable contribution of Professor Charles R. Barton, University of South Carolina Beaufort, USA, who edited all the manuscripts in this report.

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Keynote Speeches

Institutionalization of the R-T-S Nexus in the Academic Profession from an International, Comparative Perspective

Akira Arimoto*

Introduction

Higher education contains both the university sector, incorporating undergraduate and graduate education, and the non-university sector, comprising tertiary, post-secondary, and lifelong education. In this sense, the university functions as only one sector among these components of higher education. But even so, for about 800 years since its appearance in the 12th century as the medieval university, the university is thought to be responsible for higher education to a great extent by pursuing academic work including research, teaching and service, especially teaching. This fact suggests that the university is an important sector in the context of pursuing higher education through teaching. Academics, who are sorely responsible for the university's activities including academic work, have also been expected to be the main actors in conducting teaching for many years since the institutionalization of the medieval or pre-modern university.

The pre-modern university focused on its function of teaching activities, whereas the modern university has prioritized 'research' activities that were introduced in addition to teaching. Therefore the identity of academics was obliged to expand from a teaching role to a research one in which they are responsible for their own specialized disciplines. Research was included in the academic career through a series of processes of training academics in graduate

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courses, recruitment, promotion, and in-service training. Accordingly, academics in the modern university are apt to be involved in increasing conflict between teaching and research. Academics were forced to transform from a position of mere academics to integrate into the academic profession at the time when the institutionalization of research into the academic career was begun through graduate education.

With the intense development of the research function, academics possessing the traditional identity of teachers formed at the pre-modern university were forced to shift themselves to conform to the new identity of the academic profession possessing the dual role of researchers and teachers at the same time. However, in addition to this trend, the academic profession is now expected to transform to another phase, where the academic profession is expected to pay more attention to students as learners.

Universalization of higher education demands that diversified students be more involved in study rather than learning. The ideal of scholarship is expected to transform toward both teaching and study orientations, with a focus on the teaching and study process in the classrooms, and as a result to transform towards the research, teaching and study nexus (R-T-S Nexus). In reality, however, it is true that scholarship on research orientation persists throughout the world according to some international surveys on the academic profession.

Based on these considerations, this paper attempts to shed light on the given theme by analyzing the results gained from three international surveys of the academic profession: the Carnegie survey conducted in 1992, the Changing Academic Profession (CAP) survey in 2007, and the Academic Profession in Asia (APA) survey in 2012.[1]

1. Framework

The main role of the profession is to conduct academic work which is thought to be the most important activity in academia (Figure 1). Academic work consists of research, teaching, and service responding to knowledge's discovery, delivery, and application, respectively. Among these, research and teaching are two vehicles pursuing the most indispensable functions.

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[1] The author of this paper has published some articles from a viewpoint that development of ideal is important in 21st century higher education reforms (Altbach, 1996; Arimoto & Ehara, 1996; Arimoto, 1981, 1987, 1996, 2008, 2011; Locke, Cummings & Fisher, 2011; Shin, Toutkoushian & Teichler, 2011; Teichler, Arimoto & Cummings, 2013; Shin, Arimoto, Cummings & Teichler, 2013).

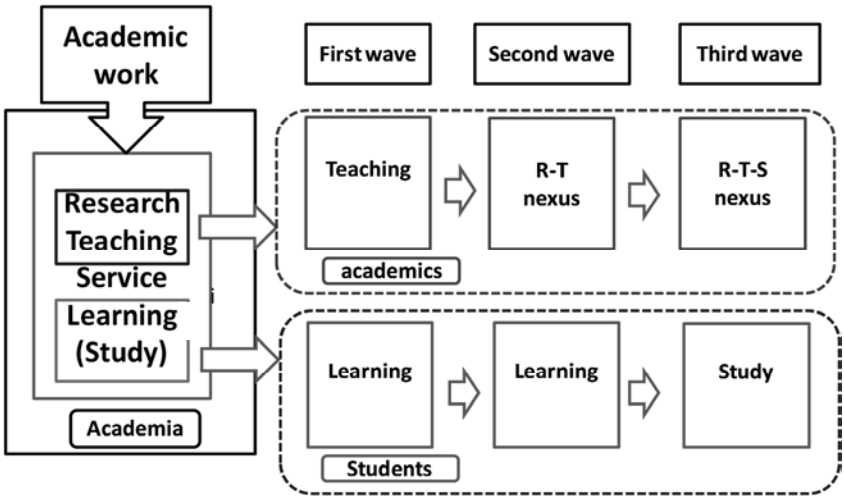

Figure 1. Relation between academic work and the R-T-S Nexus

> The main function of faculties is instruction, that is direct teaching of students. Instruction involves formal teaching of groups of students in classrooms, laboratories, studio, gymnasia, and field settings. (Bowen & Schuster, 1986, p.15)

> Faculties contribute to the quality and productivity of society not only through their influence on students but also directly through the ramified endeavors we call [research]. This term is used as shorthand for all the activities of faculties that advance knowledge and the arts. These include humanistic scholarship, scientific research in the natural and social sciences, philosophical and religious inquiry, social criticism, public-policy analysis, and cultivation of literature and the fine arts. (Ibid., p.16)

Academics' two functions of research and teaching, especially teaching, and students' function of study are core parts of the R-T-S Nexus coinciding to the Humboldtian ideal (Von Humboldt, 1910; Clark, 1997).

During the 800-year history of the university, one can distinguish three stages: the first mostly consisting of the medieval university; the second mostly the modern university; and the third mostly the present and future university. Teaching prevailed in the first, while research did so in the second. Learning prevailed in the first and second stages, while it is expected to shift to study. In the third stage, which is different from the former two with respect to the fact that student's super diversification is proceeding in relation to the universal stage of higher education development. As a result, it is partly necessary to enhance

faculty development (FD) at the side of the academic staff, and it is partly necessary to enhance students' active study at the side of their classmates (Arimoto, 2005). Accordingly, the academic profession is proclaimed to increase not only compatibility between research and teaching but also enhancement of the R-T-S Nexus.

In the context of this framework, an hypothesis is that the academic profession in the world including Asia and Japan is moving toward an ideal future direction based on a trend of the past twenty years. However, the contrary to this hypothesis, one is compelled to remark a tentative conclusion that it is moving toward a different, opposite direction. This paper discusses this discovery in more detail in the following sections.

2. Is the R-T-S Nexus institutionalized in higher education?

The concept of the R-T-S Nexus has developed well at the ideal level since the Humboldtian ideal was first described in 1910 (Von Humboldt, 1910). Burton R. Clark interpreted and developed it to the R-T-S Nexus concept (Clark, 1997). However, its real institutionalization into higher education has neither developed internationally nor in Japan based on the results of surveys conducted thus far.

(1) The current situation internationally

The current situation internationally is based on three international surveys on the academic profession: Carnegie, CAP, and APA.

Carnegie survey (1992)

In this survey, research and teaching were categorized into three orientations: research; research and teaching; and teaching (Arimoto & Ehara, 1996). The research orientation is also called the German type in some countries including the Netherlands, Japan, Korea, Germany, and Norway. The research and teaching (half and half) orientation is referred to as the Anglo-Saxon type in some countries including the United States, the United Kingdom, Australia, and Hong Kong. The teaching orientation is known as the Latin American type and includes Mexico, Chile, Argentina, and Brazil.

CAP survey (2007)

In the CAP survey, it is noteworthy that the research orientation increased,

whereas the teaching orientation decreased (Arimoto, 2011). The research orientation recognized in the past survey maintains this inclination at this time, while the other two types are moving toward the research orientation type. Concretely, one can recognize there are different movements among countries, because Mexico is still strong in the teaching orientation and on the other hand many Latin American countries such as Chile, Argentina, and Brazil are moving from the teaching orientation to the research orientation.

It is surprising to point out that the United States as a member of Anglo-Saxon countries is moving toward the teaching orientation instead of the research orientation together with other member countries such as the United Kingdom, Australia, and Hong Kong.

Summing up these trends, one can recognize the international academic profession has strengthened the research orientation, especially in the advanced countries. Developing countries are also moving toward the research orientation, although they are still fairly strong in the teaching orientation.

APA survey (2012)

In the APA survey conducted in Asian countries, all except Japan and Taiwan belong to the teaching orientation just as the Latin American type (Arimoto, Daizen & Kimoto, 2013). Based on this fact, it can be said that the Asian academic profession belonged to the Latin American type at the time of the Carnegie survey, and it will move to the research orientation of the German type in future as observable in the concrete trend of the Latin American type shifting from the Carnegie to the CAP survey.

(2) Current situation in Asia and Japan

Summarizing the previous three surveys from an international, comparative perspective, one can recognize the traits of the academic profession in Asia.

① Japan and Korea belonged to the German type at the stage of the Carnegie survey and still belonged to the German type at the stage of the CAP survey.
② Many Asian countries, except Japan and Korea, belonged to the Latin American type at the stage of Carnegie survey, still belonged to the Latin American type at the stage of CAP survey.
③ Japan was a German type at the stage of the Carnegie survey, and it is still a German type at the stages of the CAP and APA surveys.

(3) International commonness and heterogeneity

At the time of the Carnegie survey fifteen years ago, the academic profession worldwide showed three types in which the Anglo-Saxon type displayed an even orientation between research and teaching. In this regard, it is closest to the R-T-S Nexus as ideal type, although it still belongs to the stage of R-T, not to the R-T-S Nexus. Additionally, it can be said that it is questionable whether or not it has reached the point where the ideal type is demonstrated, since these surveys have no questionnaires which concretely ask about the problem of the R-T-S Nexus. At the time of the CAP survey, both the research and teaching, half and half orientation, and the teaching orientation types, exhibited a trend of convergence to the research orientation.

As far as the surveys on the academic profession in the world is concerned, it is probably true to say that it has not moved thus far to the R-T-S Nexus type as an ideal type of the 21st century. In light of the R-T-S Nexus type, convergence to research orientation (R) is strong while convergence to teaching (T) and much more to study (S) is weak. Of course, this result must be caused by the characteristics of questionnaires with a focus on the R-T level in these surveys.

It is a fact that the research orientation has been strengthened in the past fifteen years. However, one must pay attention to Mexico and the United States, because these two countries have showed their own particular movements toward directions that differ from other countries. According to the results of the Carnegie survey, Mexico was expected to move to the research orientation in the future just like other Latin American countries. However, it has not moved in that direction. It is also difficult to understand why the United States moved to the teaching orientation from the research and teaching, half and half, orientation despite the fact that it moved to the research orientation. Perhaps, the United States is one of the advanced countries with regard to initiating a future trend in the academic profession worldwide. Its trend in past years is important to forecast where many countries are going in the future.

(4) Where are we going in future?

As shown in Figure 2, a combination of a strong (+) and weak (–) research orientation and a strong (+) and weak (–) teaching orientation results in four types: A (+ +), B (+ –), C (– +), and D (– –), though D exists only theoretically. Every type has the following profile.

Type A: Modern University 2 (R-T orientation) equivalent to Anglo-Saxon type,
Type B: Modern University 1 (R orientation) equivalent to German type,
Type C: Medieval University (T orientation) equivalent to Latin American type,
Type Super A: An ideal university type (R-T-S Nexus) tentatively equivalent to the United States

Historically, the university is gradually shifting from Type C to Type Super A through Type B. However, it is interesting to recognize today, Type B is increasing instead of shifting to Type A and Type Super A.

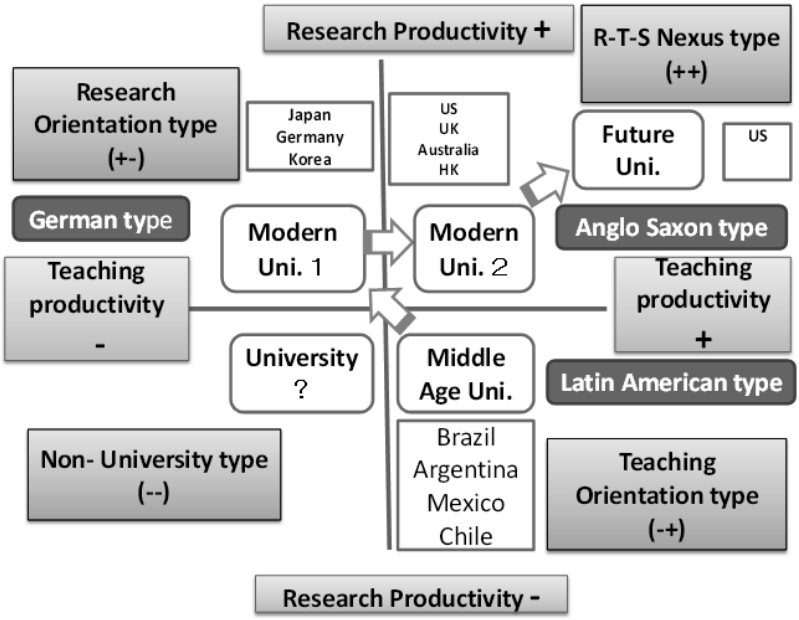

Figure 2. University's shift in relation to research and teaching orientation

3. Why has the R-T-S Nexus not been institutionalized thus far?

As mentioned previously this question has not been included in a series of international surveys on the academic profession so it is difficult to know whether the institutionalization has been realized or not. However, as far as the international surveys of the academic profession in the world with regard to the research and teaching orientations are concerned, one can say that the results

point out the trend of increasing research orientation and, at the same time, decreasing teaching orientation. Based on this fact, it is possible for one to say that a positive trend of increasing teaching and study orientation has not been recognized and as a result the R-T-S Nexus has not institutionalized thus far.

(1) Some reasons from an international perspective

One can hypothesize that there are some reasons why almost all countries have strengthened the research orientation.

Rising intense competition among countries

The research orientation is advantageous to many countries intending to raise their international competitiveness by way of enhancing research productivity. Enhancement of academics' research results in raising research orientation, research productivity, and research competitiveness within a university and also among universities in a given country so that it is able to raise its own international competitiveness. Evidence of this fact is that many countries thus far have tried a series of scientific and academic policies of selection and concentration to universities and colleges in order to enhance their research abilities (Altbach & Umakoshi, 2004; Marginson, Kaur & Sawir, 2011).

Impact of world university rankings

The research orientation is advantageous to ambitious universities increasing efforts to raise their institutional reputation by enhancing visibility in the field of research activities. Almost all universities in the world are competing to gain an eminent research position in terms of research productivity since 2003 when a series of university rankings were introduced on an international scale by the London Times, the World News & Reports, and Shanghai Jiao Tong University.

In general, research universities constitute as few as five percent of the universities in many countries situated at the top ranking of a university pyramid. Almost all universities ranked at the upper positions in the world rankings, for example in the case of London Times, belong to the category of research university, because the weight of research (60%) including research (30%) and citation (30%) is high (Times Higher Education, 2013).

According to the London Times' World University Rankings 2013-14, of the top ten universities seven were from the United States and three from the United Kingdom (Table 1). The former are California Institute of Technology,

Harvard, Stanford, MIT, Princeton, University of California, Berkeley, and Chicago, and from the latter they are Oxford, Cambridge, and Imperial College London. Of the top twenty universities as many as fifteen (75%) were from the former. From Japan, Tokyo and Kyoto at 23rd and 52nd respectively were ranked within the top one hundred (Times Higher Education, 2013).

Table 1. World university rankings 2013-14

1	California Institute of Technology (Caltech)	United States
2	University of Oxford	United Kingdom
2	Harvard University	United States
4	Stanford University	United States
5	Massachusetts Institute of Technology (MIT)	United States
6	Princeton University	United States
7	University of Cambridge	United Kingdom
8	University of California, Berkeley	United States
9	University of Chicago	United States
10	Imperial College London	United Kingdom
11	Yale University	United States
12	University of California, Los Angeles (UCLA)	United States
13	Columbia University	United States
14	ETH Zürich – Swiss Federal Institute of Technology Zürich	Switzerland
15	Johns Hopkins University	United States
16	University of Pennsylvania	United States
17	Duke University	United States
18	University of Michigan	United States
19	Cornell University	United States
20	University of Toronto	Canada

Effects of increasing visibility of academics

The research orientation is advantageous to academics in universities and colleges because they increase their reputation as researchers with high visibility and become not only recipients of various awards inside and outside their countries but also targets of head hunting for eminent researchers. Especially,

Japanese universities and colleges used to give high priority in the recruitment and retention processes to researchers with many publications. In this kind of climate, the research orientation is likely to be strengthened manifestly and latently.

Lack of balance between academic productivity

The research orientation is not necessarily welcomed by students who are the main actors in the universal stage of higher education, even though it is welcomed by countries, universities, and academics. In the universal stage of higher education, transformation from a decrease of the teaching orientation to an increase in the research orientation inevitably brings about a cause of teaching's decline because of a shortage of academics' commitment to the teaching and learning (study) process. As a result, it is clear that students' formation of scholastic achievement is unavoidably impeded by losing substantially a quality assurance of teaching as an original aim of undergraduate course education.

(2) Some reasons from an Asian perspective

It is accurate to say that the Asian trend is almost the same as an international trend with respect to the fact that the research orientation is now increasing as shown in the trends of various surveys. However, it is also undeniable that in Asia there are still many countries involved in the teaching orientation except the region comprised of Japan, Korea, Taiwan, and Hong Kong. The main reason for this is the fact that they are now developing countries.

Many countries in Asia are now shifting in line with the trend of the Latin American type. As was observed in the CAP survey, developing countries such as in Latin America have a strong tradition of the teaching orientation, and in spite of this tradition they are now shifting to the research orientation. As was observed previously from an historical perspective, academics worldwide shifted from the teaching orientation in the middle age university to the research orientation in the modern university. In this overview context, the Latin American academic profession is now in the midst of shifting from the middle age type to the modern age type. It is probably correct to say that many countries in Asia are also now shifting from the middle age type to the modern age type.

(3) Some reasons from a Japanese perspective

Historical background

Japanese universities have attempted to import models from advanced Western countries such as the United Kingdom, France, Germany, and the United States since the Meiji Restoration (1868) in order to establish an equivalent modern university system. As Shigeru Nakayama pointed out in *Birth of Imperial University*, some researchers at that time paid attention to academic disciplines at the outstanding chairs and departments in the United Kingdom, France, Germany, and the United States and imported them into the chairs in the Imperial University as much as possible (Nakayama, 1978). In this intensive selection process of academic disciplines, they attempted to import the research orientation in accordance with the German university model which formed a Center of Excellence (COE) in the world at that time.

As a result, a series of higher education policies have created an academic climate appropriate for Japan, in which not only the research orientation proceeded rather than the teaching one in the Imperial University, but also almost all universities in the national, local, and private sectors emulated the Imperial University in terms of the research orientation. This prototype of a national climate of the research orientation was established in the prewar period on the basis of the German model, and it is not an oversimplification to say that it has been maintained successively even in the postwar period until today by almost all institutions.

Higher education policy

Higher education policy in Japan has had for a long time a great effect upon Japanese academics' research orientation. The national government's higher education policy has promoted research orientation type universities ceaselessly throughout the prewar and postwar time since a series of policies were focused on encouraging the former imperial universities toward the research orientation and also focused as well on more or less encouraging the other institutions. However, this policy trend changed suddenly in 1991 when the University Council (UC) issued a report on the framework for the control of university foundation (UC, 1991). Ordinance of the MEXT which realized concretely the proposals of the report tried to abandon a research orientation policy abruptly in order to promote a teaching innovation policy and in addition to it a teaching orientation policy for academics.

However, in spite of introducing this kind of policy transformation, the

research orientation which had lasted for as many as 130 years since the prewar time lasted stubbornly without any visible change for either universities or academics. As previously mentioned this fact was attested to by a strong research orientation as shown by the Carnegie survey in 1992 and the CAP survey in 2007 (Altbach, 1996; Arimoto & Ehara, 1996; Arimoto, Ed., 2008, 2011).

Meanwhile, the author of this paper has asserted constantly the necessity of compatibility between research and teaching, proclaiming that policy emphasizing the teaching orientation while guaranteeing research orientation, instead of without it would finally bring about promotion of only a teaching orientation (Arimoto, 2008, 2010). He asserted the same kind of opinion when invited to a hearing session of the Central Council for Education (CCE) which was held immediately after its intermediate report of 2008 was issued. In 2008 CCE adopted some modifications related to his opinion about the nexus of the two orientations, although it did not guarantee an importance of the research orientation until then (CCE, 2008). In these circumstances, CCE in a 2012 report attempted to transform its opinion of placing weight on the research orientation or on the research and teaching nexus (CCE, 2012).

Prevailing pinnacle model

The pinnacle model prevailed as the most leading university model in Japan for more than one century since the Meiji Restoration. It consisted of Tokyo University (*todai)* and Kyoto University (*kyodai)* according to Burton Clark (Clark, 1983). Japan's pinnacle is thought to be related to the research orientation. This means Japanese universities conformed to the research orientation instead of the teaching orientation model just like German universities which were involved in the research orientation, even though it was a deviation from the Humboldtian model to which German universities were originally expected to conform as the ideal model for the first time in the world. Almost all universities were seized by an illusion that commitment to research was important to imitate even slightly with *Todai* which had been offered the highest prestige as a pinnacle of the university pyramid so they followed the same popular line.

In the postwar time, almost all universities in the national, local, and private sectors followed the pinnacle model until 1991 when UC issued a report in an attempt to propose a gentle framework policy on the university foundation (UC, 1991). It was issued in the midst of almost all academics being involved in the research orientation instead of the teaching orientation even at the universal

stage of higher education development, in which the R-T Nexus was necessary to cope with increasing student's super diversification.

4. What is problem related to institutionalization of the R-T-S Nexus?

Table 2 shows three stages of higher education development. Accordingly, we are now passing to a third stage which possess the following characteristics:

① Pattern of HE: Shift from mass to universal
② Social changes: Shift from information society to knowledge-based society
③ University type: Shift from modern university to future university
④ Enrollment rate: Shift from, ＜50% to ≧50%
⑤ Knowledge type: Shift from differentiated to much differentiated and scrap and build
⑥ Academic staff: Shift from teacher＜researcher to profession
⑦ Non-academic staff: Shift from developed gradually to profession
⑧ Student: Shift from learning oriented to study oriented
⑨ Scholarship: Shift from R-T orientation to R-T-S orientation
⑩ Role of HE: University＞tertiary education to university & tertiary education

Table 2. Three stages of higher education development

	First stage	Second stage	Third stage
Pattern of HE	Elite	Mass	Universal
Social change	Agricultural society	Industrial society→Information society	Knowledge-based society
University	Middle age university	Modern university	Future university
Enrollment rate	＜15%	＜ 50%	≧50%
Knowledge	Less differentiated	differentiated	Much differentiated & scrap and build
academic	teacher	Teacher < researcher	Teacher ＞Researcher→ FD→Profession
Non-academic	Under developed	Developed gradually	SD→Profession
student	learner	learner	Study oriented
Scholarship	T orientation	R-T orientation	R-T-S orientation
Role of HE	University	University ＞Tertiary education	University & Tertiary education

(1) Institutionalization of the academic profession: Its success and failure

If one focuses on various characteristics of academics, it is understandable that emerging modern universities brought about transformation from mere academics involved in teaching to the academic profession involved in teaching and research. Academics have become a profession since 1876 when graduate school was institutionalized in the United States for the first time in the world. Research was substantially included in the academic career for the first time in higher education history. The weight of researchers and scientists in academia has increased from this time. Transformation from mere academics to the academic profession was epoch-making not only in the United States where the graduate school system was invented but also in other countries worldwide that are confronted with many problems to resolve in relation to the research revolution.

Establishment of graduate school

University policy shifted from the teaching orientation, which had been developed for approximately six centuries since the middle age university, to the research orientation. This shift is attested to by the fact that at least leading American universities recruited in the later 19th century professors upon whom was conferred the Ph.D. degree by German universities. Institutions like Johns Hopkins University (1876), for example, established Ph.D. programs in their own graduate schools in addition to recruiting the graduates of German universities.

Shift from academics to academic profession

Academics shifted from those who taught almost all subjects as in the middle age university to those who taught their own specific discipline like contemporary university academics. In other words, the former is as it were at a non-profession level just like elementary school teachers, while the latter is at a profession level just like university teachers.

The aim of research achieved recognition around the later 19th century in the United States. Lawrence Veysey said "Looking back, it is clear enough that in the 1870's research played no important role in American higher education. Indeed, at that time the idea of a formal academic career was still in its infancy. It was in 1880 that Williard Gibs first was paid a salary by Yale. Ten years later research had become one of the dominant concerns of American Higher Education." (Veysey, 1965, pp.174-175). Academic researchers participated in

various kinds of academic associations established on the basis of specific disciplines so that specialization in specific disciplines increased at universities and colleges.

University presses

The University Press attached to an individual university published academic research outcomes as well as Ph.D. dissertations. This was an important development that was necessary for individual universities to achieve the status of research university and, at the same time, to take advantage of its own graduates' recruitment in the academic marketplace by raising their visibility.

> In 1878, two years after its founding, Hopkins president Daniel Coit Gilman reminded his faculty and trustees that [it is one of noblest duties of a university to advance knowledge, and diffuse it not merely among those who can attend daily lectures – but far and wide.] Whereupon he established a Publication Agency to produce scholarly journals to publish the results of faculty research; three years later it became the Johns Hopkins Press and moved into book publication in a serious way."(Axtell, 2006, p.531).

Accordingly, the first university press was established in the United States by Johns Hopkins (1881), followed by Chicago (1891), California (1893), Columbia (1893), Princeton (1905), Yale (1908), and Harvard (1913) (Ibid., p.531).

Sabbatical leaves

"The sabbatical leave is sometimes used by institutions to reward faculty members for past accomplishments. It is not necessarily given to all who apply." (Clark & Neave, 1992, Vol.3, p.1645) This system was introduced into universities and colleges once every seven years in order to enhance academics' research outcomes. Academics were expected to publish books and articles on the basis of research achievements made freely in universities other than their own and research organizations. In 1880, Harvard first granted sabbaticals on half-pay to its faculty members (Veysey, 1965, p.175). This expensive innovation had few early imitators, although by 1900 eleven colleges and universities granted sabbaticals (Oleson & Voss, 1979, p.292). This system was introduced in the United States in the later 19th century while in Japanese counterparts it has not been introduced well to reward faculty members until today, and so it has not been successfully institutionalized in the universities and colleges in Japan.

Publish or perish

"American universities in the last quarter of the 19th century began to emphasize their research function and to demand that their faculties [publish or perish] (or at least not flourish)." (Axtell, 2006, p.531) As a result of the prevailing research paradigm, an ethos, or norm of behavior, has functioned to bring about a compulsion: publish or perish. In other words, the academic climate has brought about the age of the research paradigm which makes academics be obsessed with the idea of research.

Academic department and chair system

Department and chair systems were established as professional groups consisting of academics specialized in individual academic disciplines. The department is one of two key innovations of graduate school and department in the United States. Parsons and Platt stressed that the department replaced the ascendancy of the Chair consisting of one professor in a field, which was popular in the European university. "The rise of departments tended to emphasize universalistic standards of performance and competence as distinguished from standards congenial to a single patron." (Parsons & Platt, 1973, p.111) Contrary to the United States, in Japan, the chair position (*koza*) was established for the first time at Tokyo Imperial University in 1893 (Meiji 26) and then spread throughout the country (Amano, 1997). Amano pointed out "It lacked clear aim to train the future academics and researchers of universities and higher education agencies. This brought into existence a scholar's training system with apprenticeship inside university and a segmentation like octopus pot among universities so that became causes of prevailing *gakubatsu.* As a result, academic world has been formed with weak vertical solidarity among academics." (Amano, 2009, pp.197-210).

Introduction of outbreeding

Leading American universities started controlling inbreeding in the later 19th century. For example, Harvard and Yale adopted a policy of recruiting graduates from other institutions at the proportion of one third percentage in accordance with the transformation from teaching to a research orientation, although in the 17th and 18th centuries, these traditional colleges adopted policies of recruiting one hundred percent of their academic staff from their own graduates (Pierson, 1952; Arimoto, 1981). It is remarkable that these institutions introduced outbreeding policies by themselves without any control from the national or local government. It was possible due to introduction of

the department system instead of the chair system which was mostly established later in the 19th century.

> While the history of departments stretches back to the eighteenth century, it was in the late nineteenth century, in particular, that most departments were created, coinciding with the explosion of knowledge which was being organized into more and more disciplines. (Clark & Neave, 1992, Vol. 2, p.1391)

On the other hand, leading universities in Japan introduced the chair system, and Tokyo Imperial University, for example, introduced it in 1894 for the first time (Amano, 1997, 2009). They tried to retain 100% inbreeding, and to the extent possible they still maintain a high inbreeding ratio even now, although they are gradually decreasing the percentage (Yamanoi, 2007; Asahi-Shinbunsha, 2013).

Table 3. Inbreeding of faculty by university

Ranking	Low	%	Economics	%	Literature	%	Science	%	Engineering, Science & Engineering	%
1	Tokyo	83.2	Kobe	55.6	Kyoto	77.3	Tokyo	66.5	Kyoto	75.8
2	Kyoto	81.2	Doshisha	50.0	Tokyo	68.7	Kyoto	56.0	Tokyo	70.0
3	Waseda	61.5	Kyoto	46.9	Waseda	68.2	Tohoku	42.0	Tokyo kogyo	69.3
4	Keio	55.8	Waseda	44.8	Tohoku	57.7	Osaka	40.2	Waseda	66.1
5	Soka	52.2	Meiji	41.7	Keio	56.6	Tokyo rika	35.4	Tohoku	61.3
6	Hitotsubashi	51.8	Tokyo	40.0	Hiroshima	55.6	Tokyokyogyo	33.3	Nihon	60.8
7	Nihon	48.3	Kyushu	36.8	Ryukoku	47.2	Kyushu	32.2	Osaka	58.2
8	Doshisha	43.9	Tohokugakuin	36.8	Osaka	43.7	Hokkaido	27.1	Kyushu	58.1
9	Hokkaido	39.2	Kanseigakuin	35.8	Kogakukan	41.0	Tokai	26.9	Waseda	56.9
10	Kyushu	30.7	Osakashiritsu	35.7	Kyushu	40.4	Nagoya	26.2	Nihon	56.2

Source: Asahi-Shinbunsha, 2013, p.191

Table 3 displays the inbreeding rate by Faculty (*gakubu*) in 2013, according to Asahi-Shinbunsha. *Todai*, together with *Kyodai*, have been thought to be most qualified Faculty of Law while possessing a high inbreeding rate. For example, as of 1977, 37-years ago, they had 100% inbreeding without recruiting any graduates of rival institutions (Konaka, 1978, pp.17-18; Arimoto, 1981, p.201). In 2013, *Todai*'s rate was 83.2%, followed by *Kyodai* with 81.2%,

Waseda 61.5%, Keio 55.8%, Soka 52.2%, and Hitotsubashi 51.8%. These six institutions exceed a 50% inbreeding rate. More than a 50% rate is also seen in other Faculties such as Economics, Literature, Science, and Engineering (Asahi-Shinbunsha, 2013; Arimoto, 2013).

If one hypothesizes that research orientation tends to result in the pursuit of outbreeding as much as possible, universities and colleges in the United States introduced it actively in the early stage of the modern university's emergence, while their counterparts in Japan successively reject it even until today.

World university rankings

University ranking has become popular today in the international context. University ranking was partially introduced in 1925 in the United States and generally introduced in the 1960's, and it has become popular today (Arimoto, 1981). The same kinds of trends appeared broadly in many countries other than the United States in the 21st century. For example, some agencies including the London Times, World & News, and Shanghai Jiao Tong University, are encouraging universities, research universities in particular, to become world class. The trends have had strong effects upon universities worldwide so that they have to respond to the pressure. Jung Shin pointed out universities' differentiation toward three types: world class, national level, and local university (Shin, 2013).

Reward system and research paradigm

A system including various kinds of awards has promoted and protected the research orientation. Many award systems are functioning inside and outside Japan. Awards became a symbol of the research orientation because the prestige of academics as well as institutions is raised by various awards including the Nobel Prize which is considered the ultimate. Provost Stephen Goldfield of Princeton described the effects of winning the Novel Prize this way. "It helps in recruiting undergraduates, it helps in recruiting graduate students, it helps in recruiting professors and keeping them, it helps in fundraising, it helps politically." (Axtell, 2006, p.100)

The research orientation was strengthened throughout the world due to the reasons previously mentioned and has become much stronger than expected. This phenomenon is called the research paradigm. Therefore, it is understandable that universities have plunged into the age of the research paradigm in the 21st century in accordance with increasing globalization as well as the knowledge-based society.

(2) Unsuccessful shift from academics to the academic profession

The description thus far means the fact that the academic profession has shifted from the status of mere academics to that of a profession. Compared to the medieval university, the modern university has shifted from faculty members teaching many subjects as teachers to faculty members teaching a few subjects of a specific discipline as researchers based on their research activities. This shift is evaluated greatly since modern academics are responsible for research, teaching, and services.

However, the challenge in the future university will be construction of a new profession to meet with the R-T-S Nexus perspective. If problems to be resolved from the 19th century to today were constructing an old profession to meet the R-T Nexus perspective, today's problem is shifting from making the profession of the 19th and 20th centuries into a profession new age apropos for the 21st century. If we view the academic profession in the 20th century from this perspective, it moved toward a research orientation without compatible research and teaching, even if professionalization was partially realized successfully. As far as this fact is concerned, it is undeniable that the professionalization of academics in the 20th century was not successfully realized.

(3) An impediment of the 21st century university's construction

The 21st century university will be vastly different from the 20th century type. Academics teaching to students will become more important due to the fact that access to the university shifts from a massification stage to a universalization one. The 21st century is the age of knowledge-based society in which change occurs constantly affected by knowledge's own characteristics of flexibility.

It is a society of uncertainty in which past, present, and future are discontinuous and so advanced sciences today cannot accurately predict the future. Even the most advanced discipline in the field of social sciences like economics cannot predict a discontinuous trend of the near future. Students are expected to have academic abilities sufficient for their lifelong careers even though they may live through such discontinuous society to the age of 90. How to cultivate such academic abilities in teaching and the study process is a problem for individual academics, as well as academia in general, who are responsible for this most important process in their academic work.

It is necessary for individual academic staff to conduct adequate teaching in order to ensure quality assurance of academic ability. It is also necessary for students to conduct learning which covers various kinds of activities in their daily life and study which are connected to their class room activities as core parts of the teaching and study process.

In this context, academics are required to guarantee research in both teaching and the study process. Without this guarantee, academics' discovery and invention gained in the most advanced research are not connected to their own classes so that it is difficult to construct teaching and the study process to the level that will bring about development of the student's active study leading to academic abilities such as creativity, problem solving, problem discovering, critical thinking, *etc* (Arimoto, 2013). How to meet the challenges created by the research paradigm, which is sorely involved in the R concentration level, and how to create the R-T Nexus level and finally the R-T-S Nexus level is the question to be answered.

Therefore, in the 21st century, various concepts and equipment for active study formation will not develop without a perspective of teaching and the study process, because it is related to academics' professionalization. For example, following are some of concepts and equipment related to students' active study: Syllabi, CPA, CAP, credit, strict evaluation, office hour, monitoring system, tutorial system, numbering of subjects, rubrics, debate, discussion, Socratic method, teaching portfolio, learning portfolio, evaluation of class by students, *etc*.

(4) An impediment of students' active study

A concept of active study is now developing meaning transformation from learning (*gakushu* 学習) to study (*gakushu* 学修) (CCE, 2012). It is not difficult to conceive that students' initiative to learn was realized to a considerable degree in the medieval University where teaching was important. However, teaching style was weighted mainly on a recitation of the contents taught by the classroom teacher and, of course, this style was quite different from that of the modern university in which research is institutionalized. Past teaching is different from present teaching which stresses study in an attempt to enhance the abilities of discovery, invention, creativity, and problem finding and solving.

The medieval university developed in an agrarian society based on continuous past, present, and future, and the aim of teaching was cultivation of

ability adaptable to such static society. The university system was very limited in terms of the teaching function because of its reflection of a simple reproduction proper to the agrarian society even though the university system was certainly working as a form of the teaching function.

On the other hand, in today's knowledge-based society it is absolutely difficult to adopt the teaching style of the agrarian society type, because it is increasingly confronted with the problem of how to cultivate students' creativity; problem finding and solving; and active study in the emerging process of students' super diversification at the universal stage of higher education. They are very diverse in socioeconomic backgrounds, gender, ethnicity, age, academic abilities, and field of study interests (Clark & Neave, 1992, p.1526). In addition, they are confronted with a rising uncertainty in society. In the knowledge-based society today, continuity between past, present, and future is increasingly weak so that students are expected to possess abilities to cope with an uncertain future. Perhaps this cannot be realized well unless academics' professionalization is pursued successfully. In this context it is clear construction of the 21st century type academic profession is necessary along with a construction of a university system to support it sufficiently. Without this innovation the teaching function conducted by the university and academics today will be absorbed into the sector of tertiary education.

Concluding remarks

A number of problems have been discussed in this paper. First, its framework hypothetically noted that the modern university's direction is from an ascription and particularism orientation to an achievement and universalism orientation and so generally it is now in the process of going from a closed structure to opened one. In reference to the framework, the academic profession as well as universities in the world are expected to construct their own characteristics oriented to openness rather than closeness in their development from medieval university through modern to future universities.

Second, from the perspective of "Is the R-T-S Nexus institutionalized in higher education?" international comparative studies of the academic profession conducted by Carnegie, CAP, and APA were analyzed. As a result, among three models: research orientation, research and teaching, half and half, orientation, and teaching orientation, which were gained from the Carnegie survey, the research and teaching, half and half, orientation model is considered to be closest to the R-T-S Nexus model. However, recent surveys such as CAP and APA

made clear that the academic profession worldwide concentrates on the research orientation which is apparently contrary to compatibility between research and teaching.

Third, the causes of strengthening research orientation worldwide were examined. There are some similarities among countries as follows: rising intense competition among countries; impact of university rankings; and the effects of the increasing visibility of academics. There are some reasons particular to individual countries due to their different systems and climates, although many reasons apply to Japan as well as Asian countries. From Japan there are some reasons such as historical background, higher education policy, and the prevailing *Todai* model. The fact that research orientation is strengthening according to these reasons throughout the world has caused a lack of balance between academic productivity to the extent that declining teaching orientation is increasingly appearing.

Fourth, there are some problems in the process of formation of the academic profession as follows: discovery of the graduate education system; institutionalization of various academic associations with various disciplines; establishment of sabbatical years and university presses; the publish or perish doctrine; constraint and acceleration of inbreeding; world university rankings; the reward system, *etc.* Due to these factors the 21st century academic profession has been established to a considerable degree and even so it has not realized the ideal of the R-T-S Nexus thus far. At least its coping has been delayed with teaching against rising uncertainty society in knowledge-based society and also against super diversified students at the universalization stage of higher education development.

Fifth, in summarizing these discussions, it is undeniable that an impediment to students' active study is one of the most important problems confronting the academic profession in both directly and indirectly now and going forward. In this context concentration on the research orientation, which is clearly an observable international phenomenon today on the basis of our surveys, should be reconsidered in the midst of an increasing necessity of research and teaching process and also increasing awakening of attention to students' active study.

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Strong States, Strong Systems

William K. Cummings*

Strong States

Strong states are characterized by a consolidation of power, a stress on economic over political rights. Strong states are those where, at least in selected policy areas, top government officials define national targets and provide firm leadership focused on the achievement of these targets (Gopinathan, 1997). The literature on development notes that the most rapidly developing economies are those with strong states (World Bank, 1993). Strong states are sometimes described as authoritarian, but the most effective strong states are only authoritarian in limited areas of economic and political affairs while leaving most other areas to the market and the electorate.

Chalmers Johnson (1978) has provided an excellent account of the Ministry of International Trade and Industry's (MITI) role in leading Japan to achieve miraculous economic growth over the 1960's. MITI focused on the cultivation of a narrow band of promising industries – first textiles, then electronics, steel and ship-building, electronics, and computers – while leaving the rest of the economy alone. In other policy areas such as public health, welfare, and defense, the Japanese government took a minimalist approach (Cummings, 2014). Thus strong states are not typically dominating or expensive states. Rather they tend to be lean, especially when comparisons are made with the welfare states of Western Europe.

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The Asian state and education

Asia has given birth to a number of strong states: first Japan, then Taiwan and Korea, next Singapore and Hong Kong, and most recently mainland China. The strong states in Asia are sometimes called developmental states, as the governments of these states primarily focus on industrial policy and the promotion of exports.

Most accounts of the developmental states tend to overlook educational policy. Yet we can surmise that subject matter targeting, the quality of education, and the expansion of its provision may play a positive role in the development process. Indeed according to recent comparative studies by OECD and IEA many Asian societies excel in state-provided basic education, and most observers suggest that these educational achievements contribute to development. For example, the World Bank analysis of the East Asian Miracle highlights basic education as a key determinant of Asian economic growth, second only to technological innovation and financial investment.

A mixed picture for higher education and research

But what about higher education? Is tertiary education and research in Asia also "strong", and are there links between the relative strength of higher education systems and the rate of economic growth and national development? The answer obviously is influenced by the definition of strong higher education.

At the higher educational level, the concept of strength has at least two meanings: (1) the degree of the state's control or direction of higher education, and (2) the actual quality of higher education as measured by scientific productivity and the achievement of major awards such as Nobel prizes. Our initial focus in this paper will be on the first meaning. Later we will also consider the second meaning.

Theoretical setting

Robert Merton (1973) specified the "norms" of science – arguably an Anglo-Saxon or Western viewpoint.

Universalism – same principles of proof
Communism – knowledge owned by all
Dis-Interestedness – personal factors should not cloud judgments

Organized Skepticism – a critical view

Bernard Barber (1952) argued that Soviet science was hindered by the excessive intervention of the state – but was it?

More recently Sheila Slaughter and others (1997) ask, does academic capitalism hinder scientific productivity and creativity?

What about the impact of strong Asian states on Asian academic systems? Does it, to some degree, hinder the performance of the Asian academies?

Perspectives on the strength and performance of Asian academic systems

A superficial review might say tertiary education systems in Asia are weak; that is, the Asian higher education systems appear to be relatively insulated from government control and relatively unresponsive to government steering. The academics who work in Asian universities tend to express a deep concern for university autonomy and academic freedom. Moreover, the majority of Asian higher educational institutions are privately owned and managed and seek to distance their affairs from government intervention.

But it can be argued that the state does loom large in certain aspects of Asian tertiary education. In the public sector, in contrast to the U.S. and Australian examples where the universities are expected to generate the majority of their revenues, in Asia the state remains the primary funder. And in the private sectors of most Asian systems, the state sets standards for resource provision and dictates quotas for admissions and enrollments. Thus Asian states do seek to control the private sector in much the same way as they intervene in the public sector.

Concerning research, Asian states stand out in the international arena for the faith they espouse for the role of science and technology in enhancing national competiveness. This faith translates into relatively generous public allocations for research and development. And a substantial proportion of the state funding of R&D ends up in university laboratories, both as support for basic research and for various applied or targeted projects.

So we can say that there is a mixed picture when we consider the role of the state in Asian higher education and research. From the standpoint of the daily work of the professoriate, the state may not appear that prominent, but from a legal stand point the state looms large. Also the state provides significant financial support, especially for the public sector and for academic research.

A different approach to this question is to ask the academics themselves about their own experiences with state intervention – does state intervention seem modest or substantial, and assuming there is significant state intervention, does it seem constructive or obstructive?

The CAP Survey

The CAP study enables us to at least partially address these questions (Section E of the CAP instrument). One battery of questions asks who makes the decisions on a variety of issues. Another set considers the perceptions of academics concerning the nature and the helpfulness of those decisions made by the state and by the managers who carry out the will of the state.

CAP collected data for 19 academic systems, five being located in Asia. Two of these Asian systems (Japan and Korea) are relatively large or massified with substantial private sectors while three (Hong Kong, China, and Malaysia) are in the earlier stages of massification. For the analysis, we will compare the Asian sub-group with the total international sample. Are the state and its managers more prominent in the decision-making of the Asian sub-group or not?

Who Decides?

The CAP study identified 11 types of decisions that are critical in the operation of higher educational systems, and asked the respondents of each national survey to indicate who from a list of actors – students, individual professors, professorial bodies such as the academic senate, academic unit managers (department chairs or deans), institutional managers, and governments or external stakeholders – has the most prominent role in deciding each of these issues. Some of the decisions were more focused on academic matters whereas others were more focused on budgetary or planning issues. While it is possible to look at the responses to each of these decisions, for this paper we have decided to rely on a summary measure: the average of the percent for each decision who indicated these decisions were made by managers or external bodies (trustees or governments).

The first row of Table 1 presents the average percentages for the whole sample, for the Asian sub-group, and for the five countries in the Asian sub-group. Overall, it can be said that managers in Asia play a larger role in decision-making than do managers overall. Managers are particularly

prominent in decision-making in Malaysia and China. On the other hand, managers are considerably less likely to be the chief decision-makers in Japan; as one example, professors in most Japanese universities carry out elections to select their Deans and their Presidents, whereas these selections tend to be made from on top in most of the other Asian systems.

Table 1. Several indicators of "Strong" tertiary level systems

	Intl. Average	Asia Average	Japan	Korea	Hong Kong	China	Malaysia
Managers Decide	64	74	43	74	nd	92	86
Clear Mission	54	59	59	50	62	47	76
Performance Orientation	48	59	51	62	64	60	57
Top-Down	55	58	57	55	72	45	60
Managers Competent	39	46	55	27	35	63	49
Good Communication	27	31	24	20	26	35	50
Kept Informed	41	39	30	41	37	45	43
Collegial Atmosphere	38	33	45	17	25	36	42

Mission and performance orientation

In "strong" tertiary systems, it might be expected that the participating institutions would have clearly defined missions and recognized procedures for gauging success in the realization of these missions. According to the Asian professors, their institutions are somewhat more notable for having a clear sense of mission than the international sample as a whole – 59% versus 54%. The sense of mission is particularly evident in the Malaysian system (76%) and is least evident in the Korean system (50%).

Asian higher education systems appear to be more likely than their international counterparts to have introduced a performance evaluation approach – 59% versus 48%. Honk Kong is the most inclined (64%) while, according to the Japanese respondents, Japanese institutions are the least likely to have instituted performance evaluation approaches (51%).

Top-down management style

Strong systems would presumably be led by strong managers who take initiatives and then promote these initiatives with relatively little regard for the

concerns of lower-level decision-makers. Only slightly more than half of the respondents in both the Asian sample and the international sample indicate that their managers practice a top-down approach. Within the Asian group, the top down approach appears to be most evident in Hong Kong (72%) and least evident in China (45%).

Interestingly, to the extent managers are perceived as using a top-down approach, they are less likely to be described as competent. The Chinese managers are said to be the least likely to use a top-down approach and most likely to be described as competent, whereas the reverse is the case for Hong Kong.

Communication and collegiality

Neither the international or Asian systems are perceived as being notably successful in achieving good communication between managers and the rank and file professoriate or of fostering a collegial atmosphere. Overall the Malaysian system appears to be somewhat ahead in these matters and the Korean system appears most problematic. It may be that some of these differences are a reflection of age differences in the sampling; the Korean sample is a bit older reflecting the relatively early expansion of higher education in that country, and there is a tendency for older academics to be more critical of the decision-making processes.

Facilitating teaching and research

The above discussion provides modest support for the contention that Asian higher education systems are more hierarchical than is typical around the world. In our analysis, we extended this observation to a review of various indicators of the managerial expectations and practices in the realms of teaching and research – for example how these realms are evaluated and who does the evaluation, what is stressed in these realms (*e.g.* should teaching be practically oriented, should research be more applied or commercially oriented). In comparison with the findings reported above, there were few consistent differences between the Asian group and the total international sample in the realms of teaching and research.

On the other hand, there were some interesting differences within the Asian group. The more established Asian systems tend to contrast with the more recently emerging systems with the former sub-group being more academically oriented and the latter sub-group being more pragmatic.

Restrictions on publishing

From the perspective of promoting the knowledge economy, it has been argued that academic systems need to be free of restrictions on the communication of research findings. How does Asia stand in this regard?

According to Table 2, one out of five professors report increased restrictions on publishing. Increased restrictions are more common for publicly funded research than for privately funded research. Increased restrictions are more common in Asia, and among the CAP countries especially in Japan, Korea, and China.

Does the higher incidence of restrictions in Asia undermine the research environment, at least in some Asian Settings? Table 3 compares the global shares of R&D Funding with the global shares of academic productivity. If nations were equally creative, these two percentages should be equal. But two Asian nations (China and Japan) lag in their share of academic productivity, and two have equal shares (Korea, Malaysia). In contrast, the non-Asian states of Australia, Finland, and the UK are more productive than might be expected.

Table 2. Percent who experience increased restrictions on publication of results from

	Intl. Average	Asia Average	Japan	Korea	Hong Kong	China	Malaysia
Publicly Funded Research	21	27	32	45	19	29	12
Privately Funded Research	17	19	20	31	11	24	8

Table 3. Comparing global shares of R&F funding and share of articles 2009

	Global Share of R&D Funding 2009	Global Share of Articles 2009
Australia	1.5	2.4
Finland	.6	.7
UK	3.2	5.8
Germany	6.5	5.8
Korea	3.5	3.4
China	12.2	9.4
Japan	10.9	6.3
Malaysia	.2	.2
USA	31.8	26.5

Source: National Science Board (2014)

Conclusion

This is a sensitive topic, and we need to be careful in drawing conclusions – indeed, the information is limited and not that decisive.

It is safe to say that the Strong Asian State have played a key role in recent Asian development. Was there a complementary strong Asian university system, and if so did it contribute to this development?

The paper presents moderate support for the proposition that Asian higher education is more autocratic than higher education in other parts of the world. The evidence is more convincing if the Asian cases are disaggregated into at least two groups – those Asian systems with a longer history and that have achieved a higher level of massification (*e.g.* the Japanese and Korean systems) as contrasted with those Asian systems that have more recently emerged and that are gaining momentum (Hong Kong, Malaysia, and China). The latter group has a greater tendency to be "strong" than the former: In the latter group decision-making is largely in the hands of management, it is more top-down, the managers are more competent albeit less consultative, and there appear to be more instances of managers becoming more directly involved in shaping teaching and research.

The splitting of the five systems into these two groups suggests the proposition that university/higher education systems may go through stages of development, at first being more authoritarian or strong and then gradually evolving into more democratic forms of management and governance.

It may well be that this evolution from more to less strong systems facilitates development. It can be argued that high quality higher education and academic research depend on a certain degree of autonomy. Thus what we may be seeing in contemporary Asia is a functional transition as the respective Asian nations move from the initial stages of political and economic development that characterize the Asian Miracle to more advanced stages that require more knowledgeable and flexible human resources and more basic and creative academic research. We present this concept of stages in the evolution of Asian Higher Education Systems as a working proposition to be further tested through a look at the experiences of the other systems that are being discussed at this report.

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Presentations

Rewards & Internationalization of the Academy

Quality of Education and Research at Higher Education Institutions in Cambodia: Results of the survey on university faculty members

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Introduction

In Cambodia, the higher education sector has been continuously expanding since the late 1990s, following relaxation of the University Law in 1997, which enabled the establishment of private universities. Since the 2000s especially, the number of higher education institutions has been growing rapidly, particularly as regards private universities. The expansion of this sector can also be attributed to the growing demand for better educated human resources in the Cambodian labor market, under global economic influence. Furthermore, Cambodia's economic development is a factor that cannot be overlooked: it has expanded the country's middle class, whose growing youth population has begun to manifest greater needs and expectations regarding further educational opportunities. Under these circumstances, the importance of qualitative improvement in the education offered by higher education institutions has come to be widely recognized (Chealy, 2009). Nevertheless, this task has proven quite challenging in today's Cambodia, due to several factors. Cambodia's higher education has a relatively short history, having once been completely annihilated together with rest of the country's entire educational system in the

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mid-1970s under the Pol Pot-led regime of the People's Republic of Kampuchea (Khmer Rouge). Later, in the 1980s, the nation commenced gradual reconstruction of its higher education sector, which has not been an easy process.

In view of this background, the study presented here seeks to clarify the current quality of education and research in Cambodian higher education institutions. To that end, ten representative higher education institutions in the country were selected and a written questionnaire survey was administered to a wide range of faculty members at these universities, regarding the quality of their education and research. The survey results were analyzed in terms of faculty members' research achievements, involvement in education, working conditions, degree of satisfaction with their current post, *etc*. The objectives of the analysis were to derive a better understanding of the current status of research and education in Cambodian higher education – which is still in its developmental stage – and to gain insights for future development.

1. Survey outline

For study, a written questionnaire survey was conducted in 2011, with permission from the Ministry of Education, Youth and Sport of Cambodia ("Ministry of Education") and in collaboration with the Japan International Cooperation Agency (JICA). The survey, addressed to academic staff of the country's major public and private higher education institutions offering bachelor's and postgraduate courses, consisted of questions regarding the current status of university faculty members. The questionnaire sheets, written in Khmer and English, were distributed in November 2011 via the offices of the selected universities. At the end of February 2012, completed questionnaire sheets were collected from a total of 539 respondents, 8 of whom submitted 2 sets of questionnaires and were therefore discarded. Ultimately the questionnaire sheets of 531 respondents were analyzed (Table 1).

Of all the respondents, males comprised 85.1% and females 13.4%, male instructors thus comprising the majority. The gender of the remaining 1.5% was unidentified. These percentages correspond well to the ratios of male and female faculty members at the higher education institutions in Cambodia, as confirmed by the offices of the universities covered in the study and the Directorate General for Higher Education of the Ministry of Education. As Table 2 indicates, some 65% of the respondents were relatively young, at or below 40 years of age. This distribution of respondents by age can be also considered as reflective of the nationwide composition of university faculty

members by age.[1]

Table 1. Higher education institutions selected for survey and numbers of respondents

Name	Established*	Type	Location	No. of respondents (%)
Royal University of Fine Arts**	1918	Public	Capital	51 (9.6%)
Royal University of Law and Economics**	1949	Public	Capital	25 (4.7%)
Royal University of Phnom Penh	1960	Public	Capital	99 (18.6%)
Royal University of Agriculture	1964	Public	Capital	65 (12.2%)
Institute of Technology of Cambodia	1964	Public	Capital	64 (12.1%)
Norton University**	1996	Private	Capital	95 (17.9%)
Pannasastra University of Cambodia	1997	Private	Capital	44 (8.3%)
Cambodia University of Specialities	2002	Private	Capital	44 (8.3%)
Svay Rieng University	2005	Public	Province	15 (2.8%)
University of Battambang	2007	Public	Province	29 (5.5%)
Total				531 (100.0%)

* "Established" indicates the year in which each higher education institution was first established as such, and not necessarily as a "university": some were initially established as a "public institute" and were later recognized as a university, often following merger with, or separation from, another establishment.
** The Royal University of Fine Arts, the Royal University of Law and Economics, and Norton University were recognized as universities by the Cambodian government in 1965, 2003, and 1997, respectively.

Table 2. Respondents by age group

Age	No. of respondents (%)
61 or older	4 (0.8%)
51 – 60 yrs old	44 (8.3%)
41 – 50	115 (21.7%)
31 – 40	221 (41.6%)
21 – 30	131 (24.7%)
Other/not specified	16 (3.0%)
Total	531 (100%)

[1] Comparison to the nationwide compositions of university instructors by gender and by age is based on the interview that the author conducted in March 2012 with the Directorate General for Higher Education in Cambodia, as well as the interviews and surveys that JICA experts dispatched to the Ministry of Education of Cambodia conducted with the offices of the universities covered in the study.

In the People's Republic of Kampuchea led by Pol Pot (1975-1979), the country's formal educational system was dismantled, and many educational institutions were closed. With regard to higher education, it is reported that during the same period, the Khmer Rouge massacred 75% of university faculty and over 95% of the university students in the country (Ayres, 2000). After the collapse of Pol Pot's regime, Cambodia remained in an unstable situation, with civil wars and conflicts frequently breaking out up until the mid-1990s. Consequently, it was extremely difficult for higher education institutions to train academic staff. This historical background is reflected in the small percentage of academic staff in their 40s and 50s.

2. Survey results

With regard to Cambodian university faculty working conditions and degree of satisfaction with their posts, the study revealed the following four important points.

Firstly, public university faculty enjoy better working conditions and educational/research environments, and show a higher degree of satisfaction with their current posts, as compared to their counterparts at private universities. In particular, faculty at public universities located in the capital Phnom Penh maintain a relatively good balance of professional activities and show excellent records of academic achievement.

The two tables (Table 3 and 4) indicate the weekly average number of hours that faculty at different higher education institutions in Cambodia devote to their professional activities, Table 3 during the academic term and Table 4 outside the academic term.

These tables show that private university faculty devote more hours to educational activities both during and outside the academic term. Presumably, this is mainly because private university faculty members are often required to teach in special programs, such as summer programs, organized by their universities when regular classes are not held, and because faculty members often teach part-time at establishments other than their universities.

At public universities located in the provinces, faculty devote many hours to their university administration even during the academic term. This is probably because many faculty members are mobilized to participate in institutional design and development at universities which have been more recently established, and whose institutional aspects, in many cases, have not yet been fully completed. Moreover, instructors at public universities in the

provinces devote many hours to social service outside the academic term, with less time spent on research than during the term. On the other hand, the working hours of faculty at public universities in the capital are fairly distributed among education, research, and administration, with many hours dedicated to research, even outside the academic term.

Table 3. Hours devoted to professional activities by university faculty (weekly average, during academic term)

	No. of respondents	Education	Research	Social service	Administration	Other	Total
Public (capital)	304	13.30	12.44	7.93	11.12	6.28	51.07
Public (provinces)	44	13.14	9.85	10.83	23.73	5.50	63.05
Private	183	17.78	10.05	10.61	7.16	7.50	53.10
Total	531	44.22	32.34	29.37	42.01	19.28	167.22

Table 4. Hours devoted to professional activities by university faculty (weekly average, outside academic term)

	No. of respondents	Education	Research	Social service	Administration	Other	Total
Public (capital)	304	9.85	12.86	6.60	10.69	3.93	43.93
Public (provinces)	44	6.64	4.25	15.33	12.00	10.00	48.22
Private	183	11.79	11.13	6.79	5.18	5.11	40.00
Total	531	28.28	28.24	28.72	27.87	19.04	132.15

Table 5 provides the instances of academic achievement by university faculty during the past three years. In this aspect, the list is headed by those teaching at public and private universities in the capital. Notably, those at public universities in the capital registered the most academic achievements in terms of the number of published books, papers, reports and presentations at academic conferences. Private university faculty, on the other hand, had more achievements in terms of the number of contributions to newspapers, computer programs, works of art, films, *etc.*

Table 6 indicates the degree of faculty satisfaction with their current posts at different types of higher education institutions. On the whole, public university faculty are relatively more satisfied than private university faculty.

Interestingly, faculty at public universities in the provinces show a high degree of satisfaction. This finding is quite unexpected, considering the disadvantageous conditions under which they work: basically, universities in the provinces are inferior to those in the capital in terms of education and research environment. As indicated in Tables 3 and 4, faculty members at universities in the provinces devote many of their working hours to activities such as administration and social service rather than to education and research. Moreover, they have fewer secondary sources of income, since there are many fewer universities in the provinces, unlike in the capital where university instructors can earn additional income by lecturing at educational establishments other than their universities. This is also reflected in the small number of hours dedicated to education, as shown in Tables 3 and 4.

Table 5. Academic achievements in the past three years

Description	Public (capital)	Public (provinces)	Private	Total
(1)No. of single/co-authored scholarly books	4.28	3.11	1.71	3.63
(2)No. of single/co-edited scholarly books	8.24	5.00	4.89	6.86
(3)No. of articles published in academic books/journals	5.25	2.50	4.53	4.96
(4)No. of report/monograph written for a funded	3.69	2.00	2.72	3.43
(5)No. of paper presented at a scholarly conferences	4.18	1.00	3.52	3.92
(6)No. of professional article written for newspapers or magazines	1.96	3.50	4.59	3.23
(7)No. of patents a secured on a process or invention	0.00	0.00	0.50	0.14
(8)No. of computer programs written for public use	1.94	0.00	3.60	2.33
(9)No. of artistic works performed or exhibited	1.71	0.00	2.50	2.00
(10)No. of video or film produced	3.00	0.00	4.17	3.32

Table 6. Degree of faculty satisfaction with current post (by type of institution)

	No. of respondents	1*	2	3	4	5	No response	Average
Public (capital)	304	101	110	67	14	3	9	2.01
Public (provinces)	44	31	7	4	1	1	0	1.50
Private	183	54	56	46	8	5	183	2.25
Total	531	186	173	117	29	12	14	2.05

* 1: Highest – 5: Lowest

Although it was not possible to precisely discern the reasons for this high degree of satisfaction, the other surveys and interviews that the author and others conducted[2] point to the following factors: universities in the provinces, having been more recently established, have newer facilities and equipment; and living costs in the provinces are not as high in comparison to the capital, which makes their public university salaries sufficient to maintain a decent standard of living. Public university faculty members in the capital, in contrast, would have difficulty in this regard were it not for secondary income earned by lecturing at other educational establishments. Also there is not much dissatisfaction among faculty members in the provinces, since there is only a small number of peers – who are all in a similar situation – with which to compare themselves, given the small number of universities in the provinces. Further study and verification are necessary to determine the extent to which these factors actually affect faculty's sense of satisfaction, and to learn if there are other reasons as well.

The second point revealed by the study is that younger university faculty members have long working hours, mainly devoted to education, and that this contributes to their low degree of satisfaction with their current posts. Table 7 indicates the number of working hours per week that faculty dedicate to education. While a large percentage (42.7%) of all age groups combined (from their 20s to 60s) spend up to 10 hours per week on education, younger faculty members tend to spend more time. Among those in their 20s, particularly, faculty members who spend 11 to 20 hours per week on education comprise the largest percentage (46.3%), with some spending over 51 hours per week on teaching.

One question asked full-time and part-time instructors was what their working hours were at the educational institution of their main affiliation and at other institutions. The responses revealed that, in comparison to full-time instructors, part-time instructors, many of whom tend to be relatively young, work longer hours at educational institutions that are their secondary place of employment and shorter working hours at the educational institutions of their main affiliation.

Overview of working hours for each type of activity by faculty classified according to age group highlights tendencies and traits. Tables 8 and 9 indicate

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[2] They include the interview that the author conducted in March 2012 with the Directorate General for Higher Education in Cambodia and the interviews and surveys that JICA experts dispatched to the Ministry of Education of Cambodia conducted with the offices of the universities.

the composition of working hours of university faculty during and outside academic terms, respectively. They show the percentage of total working hours spent by university instructors of different age groups on their various activities.

During the academic term, weekly work of university faculty members in their 20s averaged 58.68 hours, the most of all the age groups. Instructors in their 20s seem to vigorously pursue education (30.8%) and research (24.6%), while at the same time devoting a considerable portion of their working hours (23.8%) to university administration. Those in their 30s spend a relatively large portion of their working hours on education (27.3%), but less on research (19.8%) and more on social service (16.6%) than do those in their 20s. Faculty members in their 40s actively engage in social service (26.1%) working with the government, international organizations, and NGOs. This seems to be linked with less time on education (22.6%). Instructors in their 50s spend less time on social service (13.8%), while education (32.0%) and research (24.4%) become their main activities. Those in their 60s are focused on education (53.3%) with smaller portions of their working hours dedicated to research and other activities.

Outside the academic term, faculty members in their 20s spend more time on education (31.5%) than during the term, presumably because they work in summer programs organized by their universities or teach part-time at other educational institutions during the holidays. On the other hand, they spend less time on university administration (20.2%) than during the academic term. Instructors in their 30s devote far more time to research (29.1%) than during the academic term. Those in their 40s spend as large a portion of their working time on social service (23.9%) as they do during the academic term. Moreover, time devoted to university administration (22.9%) increases outside the academic term. Faculty members in their 50s and 60s spend less time on education and focus more on their research.

These tendencies regarding working hours for different age groups reveal that younger faculty members, mainly those in their 20s, spend relatively long hours mainly on education and university administration during the academic term, and markedly longer hours on education outside the academic term, as compared to their older peers. Those in their 50s and 60s clearly shift their focus and module time devoted to different activities, depending on whether regular classes are on or not at their universities. In other words, they devote distinctly more time on education during the academic term and on research and social service outside the academic term. This balanced distribution of time among professional activities seems to be reflected in the degree of satisfaction with their current posts and is discussed below.

Table 7. Working hours devoted to education (weekly total, by age group)

	Total	-10hrs	11-20hrs	21-30hrs	31-40hrs	41-50hrs	51hrs-
60 or older	4	4	0	0	0	0	0
	100 (%)	100.0 (%)	0.0 (%)	0.0 (%)	0.0 (%)	0.0 (%)	0.0 (%)
50-59	39	17	11	10	0	0	1
	100 (%)	43.6 (%)	28.2 (%)	25.6 (%)	0.0 (%)	0.0 (%)	2.6 (%)
40-49	99	51	32	13	2	1	0
	100 (%)	51.5 (%)	32.3 (%)	13.1 (%)	2.0 (%)	1.0 (%)	0.0 (%)
30-39	187	86	73	20	2	5	1
	100 (%)	46.0 (%)	39.0 (%)	10.7 (%)	1.1 (%)	2.7 (%)	0.5 (%)
20-29	108	33	50	12	6	4	3
	100 (%)	30.6 (%)	46.3 (%)	11.1 (%)	5.6 (%)	3.7 (%)	2.8 (%)
Total	437	191	166	55	10	10	5
	100 (%)	42.7 (%)	38.0 (%)	12.6 (%)	2.3 (%)	2.3 (%)	1.1 (%)

Table 8. Composition (%) of university faculty working hours (weekly total during academic term)

	Education	Research	Social service	Administration	Other	Total
60 or older	53.3	13.3	0.0	20.0	13.3	100
50-59	32.0	24.4	13.8	18.9	10.9	100
40-49	22.6	20.6	26.1	19.1	11.5	100
30-39	27.3	19.8	16.6	22.0	14.4	100
20-29	30.8	24.6	10.9	23.8	9.9	100
Not specified	48.6	13.2	0.0	5.3	33.0	100
Average	32.4	20.5	13.6	18.7	14.8	100

Table 9. Composition (%) of university instructors' working hours (weekly total, outside academic term)

	Education	Research	Social service	Administration	Other	Total
60 or older	14.9	35.8	22.4	17.9	9.0	100
50-59	26.1	30.8	15.0	10.0	18.1	100
40-49	21.7	21.3	23.9	22.9	10.2	100
30-39	21.7	29.1	18.2	22.2	8.7	100
20-29	31.5	29.4	9.6	20.2	9.5	100
Not specified	62.3	37.7	0.0	0.0	0.0	100
Average	28.3	29.4	15.6	16.5	10.1	100

Table 10 indicates the degree of satisfaction that university faculty classified by age feel about their current posts. The percentage of instructors who are "extremely satisfied" with their current posts comprise 75% among those aged 60 or older and 58.1% among those in their 50s. The degree of satisfaction almost seems to drop with the instructor's age: 37.5% among those in their 40s, 39% among those in their 30s, and 20.9% among those in their 20s.

One reason for these results is probably that, as suggested above, young faculty members are rushed with teaching and related tasks, whereas older and more experienced instructors manage to distribute their working hours among different activities in a more balanced manner. Furthermore, it is surmised that younger faculty members tend to accumulate dissatisfaction with their academic posts which do not necessarily pay well despite their high social status, this perhaps being exacerbated by the growing gap between academic posts and private corporate jobs, in terms of income level – especially in the younger generations – as against the backdrop of Cambodia's marked economic development in recent years. Furthermore, these factors seem related: the low income level forces many young faculty members to teach part-time, thereby increasing their working hours spent on education, which in turn negatively affects their sense of satisfaction.

Table 10. Degree of satisfaction with current post (by age)

	Total	1	2	3	4	5
60 or older	4	0	0	0	1	3
	100 (%)	0.0 (%)	0.0 (%)	0.0 (%)	25 (%)	75 (%)
50-59	43	0	1	5	11	25
	100 (%)	0.0 (%)	2.3 (%)	14.0 (%)	25.6 (%)	58.1 (%)
40-49	112	1	7	25	37	42
	100 (%)	0.9 (%)	6.3 (%)	22.3 (%)	33.0 (%)	37.5 (%)
30-39	218	6	11	49	67	85
	100 (%)	2.8 (%)	5.0 (%)	22.5 (%)	30.7 (%)	39.0 (%)
20-29	129	5	9	35	53	27
	100 (%)	3.9 (%)	7.0 (%)	27.1 (%)	41.1 (%)	20.9 (%)
Total	506	12	28	115	169	182
	100 (%)	2.4 (%)	5.5 (%)	22.7 (%)	33.4 (%)	36.0 (%)

* 1: Lowest – 5: Highest

The third point revealed by the study is that faculty members in the fields of engineering and agriculture show a particularly low degree of satisfaction with their posts and have problems concerning qualitative improvement of education and access to scientific journals. Table 11 indicates the degree of satisfaction with the current posts of university faculty members classified by area of specialization. Large percentages of those specializing in social sciences, natural sciences, health sciences/medicine, and fine arts are highly satisfied with their current posts. In contrast, the percentage of those highly satisfied in the fields of engineering and agriculture are 17.5% and 23.8%, respectively, much smaller ratios than the others.

Table 11. Degree of satisfaction with current post (by area of specialization)

	Total	1	2	3	4	5
Humanities	46	6	2	10	14	14
	100 (%)	13.0 (%)	4.3 (%)	21.7 (%)	30.4 (%)	30.4 (%)
Social sciences	81	2	5	10	30	34
	100 (%)	2.5 (%)	6.2 (%)	12.3 (%)	37.0 (%)	42.0 (%)
Natural sciences	67	0	2	16	24	25
	100 (%)	0.0 (%)	3.0 (%)	23.9 (%)	35.8 (%)	37.3 (%)
Engineering	57	0	2	22	23	10
	100 (%)	0.0 (%)	3.5 (%)	38.6 (%)	40.4 (%)	17.5 (%)
Agriculture	42	0	4	10	18	10
	100 (%)	0.0 (%)	9.5 (%)	23.8 (%)	42.9 (%)	23.8 (%)
Health sciences/ Medicine	2	0	0	0	0	2
	100 (%)	0.0 (%)	0.0 (%)	0.0 (%)	0.0 (%)	100.0 (%)
Fine arts	41	0	0	10	11	20
	100 (%)	0.0 (%)	0.0 (%)	24.4 (%)	26.8 (%)	48.8 (%)
Teacher training/Education	25	1	3	4	9	8
	100 (%)	4.0 (%)	12.0 (%)	16.0 (%)	36.0 (%)	32.0 (%)
Other	54	2	3	7	17	25
	100 (%)	3.7 (%)	5.6 (%)	13.0 (%)	31.5 (%)	46.3 (%)
Not classified	5	0	0	0	2	3
	100 (%)	0.0 (%)	0.0 (%)	0.0 (%)	40.0 (%)	60.0 (%)
Total	420	11	21	89	148	151
	100 (%)	2.6 (%)	5.0 (%)	21.2 (%)	35.2 (%)	36.0 (%)

* 1: Lowest – 5: Highest

In the survey, many faculty members stated that the quality of education at their universities had improved in the past five years, pointing to the general trend of Cambodia's higher education. In particular, those working at universities that regularly carry out faculty development (FD) activities were aware of qualitative improvement in education during the same period. Table 12 indicates the correlation between FD activities and educational quality. Strong correlation is found in the humanities, social sciences, health sciences/ medicine, and teacher training/education. In engineering and agriculture, on the other hand, no correlation is found between investment in FD activities and educational quality improvement. One likely reason is that these areas of specialization require, first of all, capital investment in machinery and equipment for experiments, and that FD activities aimed at faculty member quality improvement therefore do not necessarily lead directly to higher quality in education.

The study has also revealed that access to scientific journals varies considerably among faculty members in engineering and agriculture, as compared to their peers in other areas of specialization. That is to say, 33.9% of engineering faculty members said that they had "extremely insufficient" access to scientific journals, while 21.4% had "fully sufficient" access. Likewise, among agriculture faculty members, 34.9% had "appropriate" access to scientific journals, while 23.3% qualified their access as "fully sufficient". In sum, scientific journals were sufficiently accessible to some faculty members in engineering and agriculture, and not to others (Table 13).

In Cambodia, which presently has a large agricultural population and expects to develop economically in the future through further industrialization, agriculture and engineering are key academic disciplines supporting the country's development. Accordingly, reinforcement in these areas is a major challenge for Cambodia's higher education.

Finally, the fourth point revealed in the study is the inadequate state of institutional development regarding the promotion of research in the entire sector of higher education. Figure 1 indicates the division of university faculty member interest between education and research. Basically, they are strongly interested in research, as attested by 43% and 21% of the respondents, describing their main object of interest as "leaning towards research" and "primarily in research", respectively.

Table 12. Correlation between FD activities and educational quality

Area of specialization	R	N
Humanities	0.332 *	43
Social sciences	0.357 **	73
Natural sciences	0.263 *	61
Engineering	0.037	47
Agriculture	0.047	43
Health sciences/medicine	1 **	2
Fine arts	0.052	40
Teacher training/education	0.428 *	25
Other	0.321 *	46
Not classified	–	–
Total	0.262 **	464

*: p<.05
**: p<.01

Table 13. Access to academic journals in engineering and agriculture

	Total	1	2	3	4	5
Engineering	56	19	10	10	5	12
	100 (%)	33.9 (%)	17.9 (%)	17.9 (%)	8.9 (%)	21.4 (%)
Agriculture	43	2	9	15	7	10
	100 (%)	4.7 (%)	20.9 (%)	34.9 (%)	16.3 (%)	23.3 (%)

* 1: Extremely insufficient – 5: Fully sufficient

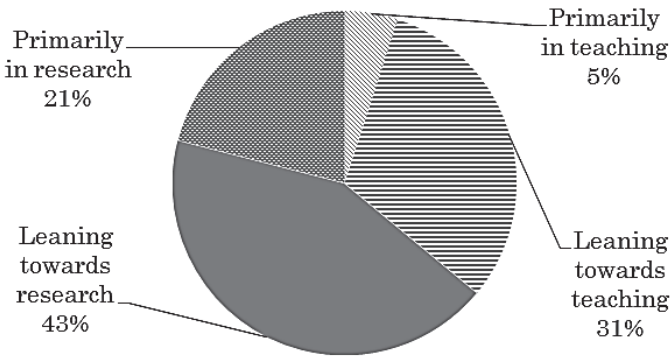

Figure 1. Division of interest between education and research

Table 14. Evaluation of funds, facilities, and human resources for research

	Public (capital)	Public (province)	Private	Average
Laboratories	3.51	2.13	2.68	3.11
Equipment	3.48	2.15	2.84	3.16
Computer	3.08	1.66	2.30	2.70
Libraries	2.74	1.78	2.22	2.49
Assistants	3.69	2.73	2.97	3.37
Fund	4.04	2.53	3.22	3.65
Travel allowance	4.16	2.63	3.28	3.75
Additional funds	4.48	3.29	3.69	4.11

* 1: Highest – 5: Lowest

However, the study has revealed that, on the whole, higher education institutions in Cambodia lack a well-developed system for promoting academic research, and that restrictions are imposed on time, funding, facilities, equipment, and human resources required for research. Regarding time for research, faculty members cannot secure sufficient time because, for private university instructors, long working hours are spent on education both during and outside the academic term and, for public university instructors in the provinces, many hours are devoted to university administration and social service. While younger faculty members generally manage to secure time for research, their overall working hours are lengthy since other activities such as teaching, university administration, and social service occupy as much time. Even outside academic term, younger instructors, who often work part-time, inevitably spend more time on education than research.

Table 14 shows how faculty members, classified by type of university, evaluate the availability of funds, facilities, human resources, and the like required for their research. It points to the widespread perception among faculty members of insufficiency regarding research funds, travel allowances, and other additional funds. Interestingly, public university faculty members in the capital who manage to secure relatively sufficient time for research evaluate these items with particular severity. Similarly, the availability of laboratories, experimental equipment, computers, libraries, other facilities, and materials for research tend to be negatively viewed by instructors in the capital at both public and private universities. Furthermore, the availability of research assistants is also poorly evaluated notably by public university faculty members in the capital. Their counterparts in the provinces, on the other hand, give their material environment for research a relatively high rating, probably because many

universities in the provinces have been more recently established and their equipment and facilities are still new as stated above.

These results can be read as proof of the high motivation for research seen among academics in the capital. A major challenge at universities in the capital therefore becomes obvious: fulfilling the conditions for research, such as time, funds, facilities, and human resources at a level worthy of the large number of highly motivated faculty members.

Conclusion

Cambodia's higher education sector has been expanding in recent years. Given the country's economic development and increase in youth population, societal needs for higher education are likely to continue growing in the future. In such a situation, various measures are being implemented to improve the quality of higher education; the effects of these measures are directly perceived by faculty, as revealed in the study presented here. At the same time, Cambodia, with its limited experience in higher education, is confronted with many challenges on its way to establishing an optimal environment for quality education and research.

This study analyzed the results of a written questionnaire survey, addressed to faculty members at higher education institutions in Cambodia, so as to obtain an overview of their working conditions, research achievements, and degree of satisfaction with their current posts, classified by type of university, instructor age, and area of specialization. The study revealed that instructors at public universities in the capital have a relatively well-balanced distribution of working hours among different activities and are active in achieving academic results such as publication, in comparison to their counterparts at private universities and public universities in the provinces. Regarding degree of satisfaction with current post, the study revealed that younger instructors are less satisfied than their older colleagues, likely because younger instructors have relatively long working hours, especially for education, and often work part-time even outside the academic term. Degree of satisfaction is also low among faculty members in the areas of engineering and agriculture, key disciplines that support the country's development. In these areas, faculty development activities aimed at improving instructor quality do not necessarily lead to qualitative educational improvement. Furthermore, in these areas of specialization, access to scientific journals is found to vary among faculty members. Future improvement in these regards is essential. The study also revealed that research achievements have

increased mainly on the part of faculty members at public universities in the capital. To further promote research activities, it would be necessary to enable faculty to secure time for research and to improve the environmental conditions for research.

As discussed earlier, Cambodian higher education is facing numerous challenges. Still, in line with the country's economic progress, this sector has been expanding and improving, though gradually.[3] For example, among younger faculty members, especially those who have studied abroad, the number of researchers with advanced qualifications such as doctorates has been increasing, which is evidence of the enhancement of the human resources that are essential for improving the quality of education and research (Kitamura & Umemiya, 2013). On the other hand, the generally low degree of satisfaction with the current post, mainly among younger faculty members, constitutes a serious problem. This dissatisfaction has a structural background comprising long working hours, hence insufficient time for research, and low income levels which also accounts for long working hours. As indicated by this example, many aspects of the situation of Cambodian university faculty members cannot be improved without financial support for salary, facilities, and equipment. To overcome these challenges, reform in the higher education sector must be accelerated based on political decisions clearly manifested mainly by the Ministry of Education.

This study examined the qualitative improvement of education and research at Cambodian higher education institutions based on the results of our questionnaire survey for university faculty members. Compared to higher education in many other Asian countries, their higher education and faculty are in a more difficult situation, and it is no easy task to improve the quality of Cambodia's university education and research. Some faculty members bring obstacles to this process of improvement because of personal issues regarding their economic situation, low motivation for research and so forth. Nevertheless, many working in the field of higher education are courageously struggling in the face of challenging conditions to fulfill their roles as educators and researchers. There are many who work hard, fully conscious of their heavy responsibility toward society, an attitude that, as Cambodia moves forward, will become increasingly important for realizing not only economic, but also political, societal, and cultural development.

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[3] Refer to Kitamura (2012) for the expansion and improvement of Cambodia's higher education in recent years.

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The Internationalization of the Academy in Asia: Major findings from the international survey

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Introduction

Since the implementation of the first international survey on the academic profession, which was basically organized by the Carnegie Foundation for the Advancement of Teaching in 1991, numerous studies have been conducted in the academy or academic profession, however, except for a very few works on individual countries or the region in Asia (Arimoto, 1996; Altbach, 1996; Welch, 1997; Hoffman 2008; Huang, 2006, 2007, 2009, 2011; Huang *et al.*, 2013), little research has focused on the internationalization of the academy in Asia in the comparative and empirical perspectives. According to existing literature, the formation of modern university systems, including the academic profession or academy in most Asian countries, is essentially affected by Western academic norms and standards dating to the 19th century. In a major sense, if the term internationalization of the academy or academics could be interpreted as cross-border activities concerning dispatching local academics abroad; inviting foreign academics to local educational institutions; introducing international or comparative perspectives into curricula; importing textbooks and teaching materials from foreign countries to academics' teaching activities; and academics' engagement in research activities modelled on foreign, especially Western academic patterns, the importance of the internationalization of the academy in the establishment of modern university systems in many Asian countries cannot be overestimated. As pointed out by the previous research:

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> All of the higher education systems considered here have Western roots and use basically Western models. In Asia, as in the rest of the world, the contemporary university is a basically Western institution, tracing their roots to the medieval European universities and shaped by the particular Western power that was the colonial ruler. In the case of Japan, China and Thailand, foreign influences were chosen with independence, but the models were foreign nonetheless. (Altbach & Selvaratnam, 1989)

With an increased influence from economic globalization in recent years, common phenomena have also emerged in more and more Asian countries in their efforts to internationalize their academics. In addition to the traditional patterns of the internationalization of the academy, such as personal movement of university faculty members and researchers across borders, new trends in the internationalization of the academy are seen widely among some Asian countries. They include a provision of English-medium teaching activities; an encouragement of making publications in English language; and an effort in undertaking research activities in collaboration with foreign partners *etc.*

The purpose of this study is to examine key aspects of the internationalization of the academy based on major findings from the international survey which was conducted in Cambodia, China, Japan, Malaysia, Taiwan, and Vietnam in 2011-2012. It focuses on the analysis of the internationalization of the academics' teaching and research activities and their belonging institutions, as well as their views on international connections. Three major research issues are addressed:

- What are the distinguishing characteristics of the internationalization of the academy in selected Asian countries in relation to teaching and research activities in particular?
- Is the level of the internationalization of the academy in some countries higher than other countries?
- What are the implications from the study?

The study begins with a brief introduction to the research framework and methodology. Then it examines key facts about the teaching and research activities which were undertaken by individual academics and occurred in their institutions at an international dimension, as well as individual academics' attitudes toward international issues. The study concludes by arguing key characteristics of the internationalization of the academy and their universities with a focus on teaching and research activities; differences in international

teaching and research activities at individual and institutional levels; and implications for research, policy and institutions.

Research framework and methodology

There are many interpretations of the term internationalization of the academy; however, the internationalization of the academy in the international survey which was implemented with a similar questionnaire from 2011-2012 in Cambodia, China, Indonesia, Japan, Malaysia, Taiwan, and Vietnam included mainly the following aspects:

- international mobility of academics
- international teaching
- research activities, and
- academics' views on international activities at both individual and institutional levels.

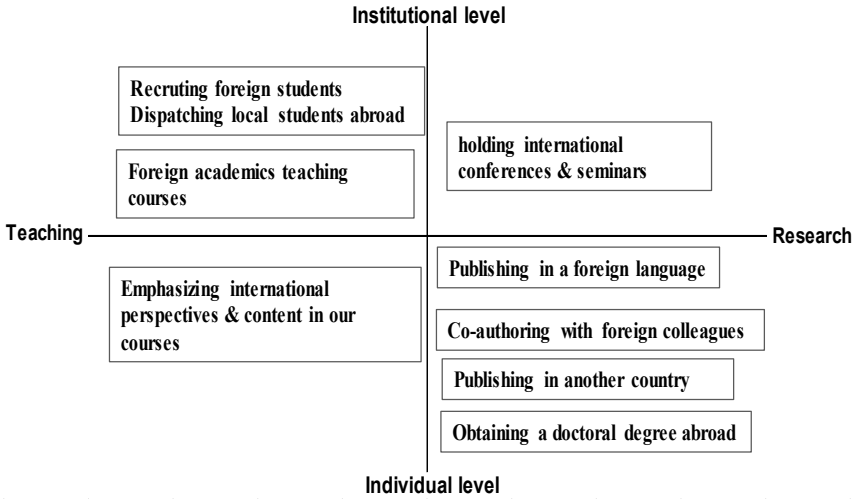
Despite the fact that internationalization of the academy can be discussed from various perspectives and at diversified dimensions, due to the limitation of the data, study is mainly concerned with two specific topics as follows:

The first is to present a brief portrait of teaching and research activities in each participating team at both individual and institutional levels. As depicted in Figure 1, with respect to teaching activities, at the individual level, it is about academics' emphasis on international perspectives or content in their courses. While at the institutional level, they include issues concerning teaching courses by foreign academics; enrolling foreign students; and sending local students to study abroad. In terms of research activities, at an individual level, they are mainly concerned with academics' obtaining their doctoral degrees; publishing in a language different from the language of instruction at their current institution; co-authoring with colleagues located in other (foreign) countries; and publishing in a foreign country, at the institutional level, they refer to holding international conferences and seminars.

Second is to analyze the academics' attitudes toward four issues concerning internationalization:

- Connections with scholars in other countries are very important to my professional work;
- In order to keep up with developments in my discipline, a scholar must read

books and journals published abroad;
- Universities and colleges should do more to promote student and faculty mobility from one country to another; and
- The curriculum at this institution should be more international in focus.



Source: Created by the author (2013)

Figure 1. Research framework of international teaching and research activities

The 2011-2012 international survey of university faculty in selected Asian countries is a follow-up to the previous two research projects on the academic profession. As mentioned earlier, one was the international survey on the academic profession which was undertaken in 14 countries in 1991; the other was the international survey on Changing Academic Profession (CAP) in which 19 countries participated in 2007-2008 with a common questionnaire. By adopting several similar questions about faculty members' academic activities at an international dimension and their views of international activities at both individual and institutional levels from the two previous surveys and, as of 2012, seven Asian research teams, including Indonesia, administered their national surveys with the similar questionnaire. Participating countries teams agreed on a common sample design and data collection instrument, but implemented in their local languages. The project team agreed to aim for a minimum effective sample size of 800 faculty members in degree granting institutions, as indicated

in Table 1, though some teams do not achieve the objective and received sufficient valid samples. Almost all countries used mail surveys. It was agreed that response rates were at least 20 percent. In order to minimize measurement bias across countries, country teams maintained a high level of standardization in terms of question order, question wording, response options, reference periods, and layout and formal design. However, because of cultural patterns and language specifics, some country teams designed national extensions to the questionnaire. By early 2013, the data bank included major findings from six participating countries. Because the Indonesian team is still in the process of cleaning and coding its data, only the data of the six teams is utilized for this study.

Table 1. Major characteristics of national surveys in participating teams***

		Participating teams						Total
		Cambodia	China	Taiwan	Japan	Malaysia	Vietnam	
Valid responses		531	2480	412	1048	660	800	5931
Gender	Male	452 86.4%	1279 52.7%	259 64.0%	882 84.7%	396 61.3%	404 51.1%	3672 63.0%
	Female	71 13.6%	1147 47.3%	146 36.0%	159 15.3%	250 38.7%	386 48.9%	2159 37.0%
Age	20-29	105 20.4%	188 7.8%	2 .5%	20 2.0%	57 9.0%	190 24.6%	562 9.8%
	30-39	229 44.5%	1246 51.9%	44 11.1%	236 23.1%	234 36.9%	341 44.2%	2330 40.6%
	40-49	122 23.7%	752 31.3%	142 35.7%	299 29.2%	143 22.5%	141 18.3%	1599 27.8%
	50-59	53 10.3%	206 8.6%	134 33.7%	258 25.2%	155 24.4%	93 12.0%	899 15.6%
	Over 60	6 1.2%	10 .4%	76 19.1%	210 20.5%	46 7.2%	7 .9%	355 6.2%
Discipline	Humanities	43 10.9%	425 17.5%	80 20.9%	112 10.8%	51 8.0%	113 16.8%	824 14.9%
	Social sciences	85 21.5%	653 27.0%	71 18.6%	130 12.5%	156 24.6%	205 30.6%	1300 23.4%
	Sciences	62 15.7%	370 15.3%	39 10.2%	207 19.9%	63 9.9%	103 15.4%	844 15.2%
	Engineering & Agriculture	102 25.8%	659 27.2%	46 12.0%	346 33.3%	197 31.0%	37 5.5%	1387 25.0%
	Other	104 26.3%	315 13.0%	146 38.2%	244 23.5%	168 26.5%	213 31.7%	1190 21.5%
Degree	Doctor	49 9.6%	979 41.3%	347 86.5%	825 81.6%	486 75.3%	226 28.7%	2912 50.9%
	Master	365 71.2%	1131 47.7%	51 12.7%	146 14.4%	142 22.0%	438 55.7%	2273 39.7%
	Bachelor	99 19.3%	259 10.9%	3 .7%	40 4.0%	17 2.6%	123 15.6%	541 9.4%

Source: Arimoto *et al*. (2013) with author's modifications.
Note: *** p<0.001

Analysis and discussion

International teaching and research activities at an individual level

As can be seen in Table 2, significant differences can be found in the responses to the academics' view on the incorporation of international perspectives or content into their courses. On average, 19.3 percent of the academics strongly agree with the statement. Among all the participating teams, the proportion of the Cambodian academics who stated "Strongly agree" is the highest (24.6%), followed by the second largest group from Taiwan (21.6%). In contrast, the proportion of Malaysia's respondents is the lowest (11.7%), and the proportion of Japan's response is the second lowest (16.3%). This suggests that the largest numbers of the Cambodian academics devoted their efforts to the introduction of international perspectives or content into their teaching activities in comparison to any other countries.

However, it is noteworthy that, if the checks to both "Strongly agree" and "2" are considered, the average proportion of the academics in agreement with the incorporation of international perspectives or content into their courses amounts to nearly 60 percent.

With respect to individual academics' international research activities, Table 3 indicates that significant difference could be found in all the three research activities in which the academy from individual teams engaged. Due to the fact that in Malaysia both English and Malay are employed as official languages while all other countries are not English-speaking, it might be appropriate to say that almost all the university faculty members use their national languages instead of English as their primary languages in delivering their lectures. Thus, the statement "Published in a language different from the language of instruction at your current institution" could be understood as they published in English language in most cases.

Relatedly, in terms of the statement "Published in a foreign country", though it is likely to assume that these academics might publish in non-English speaking countries like Cambodia, China, Japan, Korea, France, or Germany *etc.*, a huge majority of them tend to publish in English-speaking countries and, therefore, their publications were basically made in English journals.

Among the three different types of research activities, except for the fact that more than 60 percent of Malaysian academics published in a foreign country, generally speaking, the largest percent of the academics from all the participating teams believed that they were involved in activities concerning publishing in a

language different from the language of instruction at their current institution, followed by those who published in a foreign country. The least percent of the academics expressed that they co-authored with colleagues located in other (foreign) countries.

Table 2. Incorporation of international perspectives or content into one's courses (%)***

Country	Strongly agree	2	3	4	Strongly disagree	Total
Cambodia	24.6	31.5	32.3	9.3	2.4	100.0
China	21.3	47.8	27.3	3.1	0.5	100.0
Taiwan	21.6	46.8	24.9	5.6	1.2	100.0
Japan	16.3	30.1	34.5	11.5	7.6	100.0
Malaysia	11.7	38.0	44.8	4.3	1.2	100.0
Vietnam	19.2	32.8	35.8	8.1	4.0	100.0
Average	19.3	40.2	32.0	6.0	2.5	100.0

Note: *** : $p<0.001$
"2" Refers to the degree between "Agree" and "Neither Agree nor Disagree".

Table 3. International research activities at an individual level (%)***

Country	Published in a language different from the language of instruction at your current institution		Co-authored with colleagues located in other (foreign)countries		Published in a foreign country	
	Yes	No	Yes	No	Yes	No
Cambodia	45.6	54.4	35.7	64.3	42.7	57.3
Taiwan	59.8	40.2	19.5	80.5	32.8	67.2
Japan	66.0	34.0	28.6	71.4	46.1	53.9
Malaysia	47.1	52.9	40.9	59.1	65.2	34.8
Vietnam	40.5	59.5	19.9	80.1	6.1	93.9
Average	54.9	45.1	30.0	70.0	43.7	56.3

Note: *** : $p<0.001$

Among the six participating teams, over half of both Japanese and Taiwanese academics confirmed that they published in a language different from the language of instruction at their current institution. This clearly shows that the academics from the two mature systems made more noticeable achievements in this aspect than those from the emerging systems like Cambodia and Vietnam. Furthermore, as discussed earlier, more Malaysian academics seem to be involved in not only publishing in a foreign country, but also co-authoring with

colleagues located in other (foreign) countries. One of the possible reasons lies in the fact that more Malaysian academics tend to employ English language as their research language, therefore, they have less language problem while publishing outside of Malaysia in English and co-authored with foreign academics in English than any other teams.

As shown in Table 1, more than 70 percent of Japanese, Malaysian and Taiwanese academics held their doctoral degrees of the total. Though only about 40 percent of the Chinese academics and less than 30 percent of the Vietnamese academics possessed their doctoral degrees, Table 4 further suggests that as high as 90 percent of Chinese, Japanese, and Vietnamese academics, and over half of both Malaysian, and Taiwanese academics earned their doctoral degrees in their current institutions. In sharp contrast, less than 10 percent of Cambodian academics held their doctoral degrees, and only about 22 percent of them obtained their doctoral degrees at their current institutions. From an international perspective, apparently, the vast majority of doctoral degree holders were produced at home in countries like China, Japan, and Vietnam, though the percent of doctor degree holders in both China and Vietnam is still lower than Japan, Malaysia, and Taiwan. Whereas in both Malaysia, and Taiwan, though they had a very high percentages of doctoral degree holders, a large number of them received their degrees abroad.

Table 4. Obtaining doctoral degree in country of current employment (%)***

Country	Responses	
	Yes	No
Cambodia	22.4	77.6
China	96.0	4.0
Taiwan	55.2	44.8
Japan	95.8	4.2
Malaysia	53.9	46.1
Vietnam	99.4	0.6
Average	83.0	17.0

Note: *** : $p<0.001$

International teaching and research activities at an institutional level

Table 5 provides responses to the issue of how frequently international activities have occurred during the past three years at respondents' institutions. Similar to Figure 1, though the data about these activities seems to be more

complicated and diversified than what happened at an individual level, they can also be practically categorized into two broad domains of internationalization of higher education: teaching and research activities. The former includes "Foreign academics have taught courses"; "Foreign students have been enrolled"; and "Our students have studied abroad", while the latter covers "International conferences and seminars have been held".

Table 5. International activities at an institutional level (%)***

Country	Foreign academics have taught courses			International conferences and seminars have been held			Foreign students have been enrolled			Our students have studied abroad		
	Frequently	Occasionaly	Never	Frequently	Occasionaly	Never	Frequently	Occasionaly	Never	Frequently	Occasionally	Never
Cambodia	21.4	52.6	9.5	14.8	53.2	8.0	7.5	24.8	28.5	22.4	43.7	10.8
China	9.8	31.8	23.3	6.5	23.2	29.3	7.8	30.6	24.6	6.4	25.6	25.6
Taiwan	18.6	55.3	5.9	31.8	53.1	2.0	32.0	45.3	7	26.6	53.5	2.3
Japan	47.1	32.3	6	39.1	36.8	8.7	67.7	24.5	2.4	57.5	28.2	5.1
Malaysia	33.6	34.6	9.2	25.3	51.2	4.3	37.4	37.1	5.6	14.8	41.4	9.1
Vietnam	25.3	52.2	12.3	23.2	55.5	5	33.9	37.8	7.7	38.1	41.4	5.3
Average	25.3	39.2	12.3	21.1	39.9	13.8	30.9	32	13.4	25.9	34.2	13

Note: Only responses to the checks of "Frequently", "Occasionally", and "Never" are shown.
*** : $p<0.001$
Question: During the past three years at this institution, how frequently have the following occurred? (Please check only one column on each decision)

In terms of international teaching activities, special mention should be made that the proportions of respondents from Japan who answered "Frequently" to all the four international activities at their institutions are highest among all the teams, especially the proportion of the Japanese academics who confirmed that "Foreign students have been enrolled" and "Our students have studied abroad" frequently makes up for 67.7 percent and 57.5 percent of the total universities respectively. However, in contrast, except for the fact that 7.8 percent of the Chinese academics answered that in their institution "Foreign students have been enrolled" frequently, slightly higher than that of the Cambodian academics (7.5%), the lowest proportion of the Chinese academics admitted that their institutions frequently carried out all other three international activities.

Among other teams, the second highest proportion of the Malaysian academics stated that in their institution foreign academics have frequently taught course (33.6%) and foreign students have been frequently enrolled (37.4%). The second highest proportion of the Taiwanese academics said that in their institution international conferences and seminars have been frequently held (31.8%) while the second highest proportion of the Vietnamese academics

said that our students have studied abroad frequently (38.1%). For the remaining teams it appears that there exist more diversities in their response to individual international activities at their institutions.

However, despite only very few countries confirmed that their institutions have been frequently involved with all four international activities, the proportion of all the academics making checks of "Never" on any of these international activities is less than 30 percent. This means that these international activities occurred in practice at an institutional level occasionally in almost all other participating teams.

Academics' attitudes toward international issues

Table 6 indicates individual academics' attitudes toward international connections in higher education. Significant differences could be identified in all four aspects of international activities perceived by the respondents. If both checks of "Agree" and "2" are calculated, the proportions of respondents from all the teams in agreement with "Connections with scholars in other countries are very important to my professional work"; "It is necessary to read foreign books or journals in order to advance further my discipline"; "University should facilitate further exchange activities with foreign students or faculty members"; and four teams (Cambodia, China, Taiwan, and Malaysia) which agree with "The curriculum in my university should be further developed from an international perspective" account for over half of the total. In some countries, the proportions of their checks of "Agree" and "2" on some of the statement are as high as more than 80 percent. For example, the proportions of the checks of "Agree" and "2" made by Cambodian, Chinese, Japanese, and Malaysian academics on "Connections with scholars in other countries are very important to my professional work" and all the teams except for Vietnam on "It is necessary to read foreign books or journals in order to advance further my discipline".

It is interesting to note the proportion of respondents from almost all the teams agreeing with the statement that "The curriculum in my university should be further developed from an international perspective" is slightly lower than other statements. Especially the proportion of respondents from Japan, Malaysia, and Vietnam who agree constitutes less than 30 percentage (20.5% in Japan, 29.4% in Malaysia and 24.6% in Vietnam) of the total, much lower than the proportions of their responses to the other statements. It could be argued that at least a majority of academics from these three countries did not show the

same degree of positive attitudes toward further internationalization of their curriculum at their institutions as they did in the other three international activities.

Table 6. Respondents' attitudes toward international issues (%)***

Country	Connections with scholars in other countries are very important to my professional work			It is necessary to read foreign books or journals in order to advance further my discipline			University should facilitate further exchange activities with foreign students or faculty members			The curriculum in my university should be further developed from an international perspective		
	Agree	2	Agree+2	Agree	2	Agree+2	Agree	2	Agree+2	Agree	2	Agree+2
Cambodia	70.0	17.6	87.6	63.8	22.3	86.1	70.1	19.1	89.2	54.2	25.9	80.1
China	42.5	38.7	81.2	47.8	35.9	83.7	58.4	34.6	93	49	36.7	85.7
Taiwan	42.4	32.3	74.7	68.7	23.9	92.6	57.6	32.3	89.9	40.9	35.7	76.6
Japan	45.1	38.9	84.0	69.2	23.8	93.0	30.4	36.2	66.6	20.5	27.9	48.4
Malaysia	48.6	35.4	84.0	60.5	23.7	84.2	45.0	34.9	79.9	29.4	36.6	66.0
Vietnam	39.8	21.9	61.7	41.5	28.1	69.6	52.6	25.7	78.3	24.6	24.7	49.3
Average	45.9	33.9	79.8	55	29.3	84.3	52.1	32.3	84.4	38.5	32.6	71.1

Note: Only answers to the checks of "Agree" and "2" and their totals are shown.
*** : $p<0.001$
Question: We would like to learn more about your attitudes toward international connections in higher education. Please indicate how you feel about the following issues. (Please check only one column on each decision).

Though it is difficult to ascertain accurate reason(s) why there are higher proportions of the academics from these three countries disagreeing with further internationalization of their curricula, at least the data on their attitude toward this specific activity matches the finding about their international teaching activities at a course level. As revealed in Table 2, the proportions of respondents from the same three countries who strongly agree with the statement that they introduced international perspectives or content in their courses are also lower than the other group of countries.

Concluding remarks

First, the results of the data analysis indicate that the internationalization of the academy in selected Asian countries is primarily concerned with academics' international teaching activities at a course level, followed by their active involvement in publishing in a language different from the language of instruction at their current institution. In contrast, their belonging institutions have not engaged in any of the four international activities so frequently over the past three years. Arguably, the internationalization of the academy in selected Asian countries took place more at an individual level than at an institutional level if very few limited activities are examined.

Second, as considerable numbers of the academics from all the participating teams emphasized the important role of communicating with foreign scholars and reading foreign books or journals in their professional work or discipline, it appears that a majority of Asian academics are still receptive to new ideas from foreign academics and books or journals.

Third, though there exist mild differences, a vast majority of the academics expressed clearly that their institutions should further facilitate exchange activities with foreign students or faculty members and design curricula further from the international perspective. This implies that a great deal of improvement is expected to be made in the international activities at an institutional level in almost all the participating countries teams.

Fourth, with regard to the overall degree of the internationalization of the academics among the participating teams, little evidence shows that one country is particularly higher than any other countries in the entire international dimensions or activities based on relevant findings from the international survey. Actually, each country has its own distinguished characteristics while their academics engaged in various international activities. As noted previously, though the largest percent of Japan's academics expressed that they have accomplished many more aspects of international activities at both individual and institutional levels, this does not necessarily mean that they have achieved the highest level of internationalization in all dimensions or aspects. For example, the largest proportion of Malaysian academics believed that they published in a foreign country. In a major sense, due to the limited data analysis, it is extremely difficult to generalize or identify different types of internationalization of the academy which might exist among the participating teams. In other words, there appear more diversifications and no country dominates overall international activities at either individual or institutional level in the selected Asian countries.

Finally, though only simple arguments have been made about the internationalization of the academy, this study suggests several implications at the research and policy as well as institutional levels. With respect to the research implications, it makes more detailed analysis of international activities at an individual level and also academics' views on international issues, especially the role of some international activities in their professional work, but no information is available on how far the international activities have affected academics' belonging institutions in terms of their teaching and research activities as well as managerial issues *etc.* From a research perspective, probably more efforts are required to explore how internationalization could help

non-English speaking countries improve the quality of their teaching and research, to produce high-quality graduates and enhance academic productivity in particular. From policy and institutional perspectives, since less progress has been made in some emerging systems like Cambodia and China, and a relatively lower capacity of training doctoral-degree holders in Cambodia at home in particular, additional efforts should be made to develop effective and operational strategies to stimulate further development of their academics' internationalization.

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Presentations

Formation of the Academy

Effects of International Education Degree and Organizational Effectiveness Perception on Academic Research Productivity in China

Lu Li* and Fengqiao Yan **

Introduction

Nowadays, the issue of assuring and improving higher education quality is under the spotlight. As one of the core human resources of universities, the academic profession (AP) has a vital impact on the improvement of teaching quality, research productivity, and social relevance. AP is a concept that is arguably initiated from western countries by Login Wilson in *The Academic Man* which particularly refers to faculties working in universities and colleges. When it spread to different counties, the term evolved to distinct implications which are more or less relevant to diverse higher education systems. Despite this, this term has some common features that a normal profession has, such as exclusiveness and autonomy (Waddington, 1996); formal means of recruiting and training; associations disseminating knowledge in the field; official recognition; norms and regulations; and so on (Tang, 2008). Meanwhile, there are some characteristics that distinguish the academic profession from others. As Scott (1970) and Rhoades (1998) point out, AP is a group of faculties employed by academic institutions and engaged in academic affairs. Finkelstein *et al.* (1998) defines AP as an autonomous occupation with professional knowledge, common academic standards, and professional ethics; easily influenced by new knowledge production; and undulated with the

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academic labor market. Shen (2011) claims that AP contains five significant elements which are academic, materiality, spirituality, job, and group. She also says that there are three special traits that shape the heterogeneity of AP, that is, fundamentality, criticality, and discipline belongingness. In a broad sense, AP refers to all faculties in different kinds of institutions. In this article, AP specifically refers to the full-time faculties in four-year universities and colleges, which is consistent with Shen's narrow definition. It is no doubt that better understanding and interpretation of AP will contribute to effective organization of knowledge creation, transformation, and utilization. Nevertheless, there are many topics on AP that cannot be embraced and discussed in this single article.

In this article, the literature review and theoretical framework are illustrated firstly and then followed by the empirical study which sampled around 3000 faculties in public universities in China. Finally, the results and conclusions of the empirical study are examined and discussed.

Worldwide trend of academic profession

Research Orientation. With successive social changes from an agricultural through an industrial to a knowledge society, universities as well as AP went through an evolving process from the medieval through the modern and to the post-modern. For the moment, most universities in different countries are experiencing modernization that prioritizes research activities in addition to teaching. Accordingly, research is contained in the academic career through a series of processes of graduate training, recruitment, promotion, *etc*. With the intense emphasis on the research function, the traditional identity of academics as teachers at the pre-modern university shifted to the dual roles of both researcher and teacher (Arimoto, 2013). Consequently, research is regarded as the most important activity for AP. It is worth mentioning that research is closely related to teaching and service as well, in other words, it acts as the basic and supportive role among three main functions of AP. In this case, it is of great significance to observe and analyze the research productivity through which the core elements and characteristics of AP can be precisely grasped. *Academic Research Productivity (ARP)* implies quantity and quality of publications. Quantity means total volumes of publications, and quality is measured not only by an index like "ACIF" but also the international collaboration in publications. The academic research productivity measure by publication quantity and quality will be the core dependent variable in this paper.

Internationalization. More and more faculties with international education

backgrounds and international activities have been observed globally in recent years. With the development of economic globalization, more efforts were made to promote academic internationalization. Although there have been abundant studies of AP internationalization, few studies deal with the relationship between internationalization and academic research productivity. What's more, many papers about the internationalization of AP concentrate on the post career stage rather than the prior career stage, that is, the acquirement of *International Education Degree (IED)*, including bachelor, master, and doctoral degrees in foreign countries. The possession of international education degrees is becoming more and more common among faculties, and it is meaningful to ascertain the effect of international education degrees on research productivity, especially on international collaborative research performance.

A brief review of Chinese academic profession development

Generally speaking, Chinese AP has been affected by both traditional and western culture. The historical development of AP in China has experienced four periods:

(1) *Before Formation: unification of education and politics* (*Zheng Jiao He Yi*).

Before the end of the Qing Dynasty, China failed to form an independent academic profession, and lacked a knowledge ontology. At that time, the unification of education and politics was the significant characteristic of academics (Yan, 2013). The purpose to learn was to become officials.

(2) *Formative Period (1895-1949): exogenous dynamics of the AP formation.*

Historically, AP in China was formed in the late Qing Dynasty. The establishment of the modern Chinese AP system is closely related to the following academic norms: university idea, research methods, knowledge classification, associations, and journals *etc.* The modern AP was formed when western learning was introduced into China.

(3) *Turbulent Period (1949-1978): excessive political interference.*

During this time span, China adopted the former Soviet Union's higher education model, and AP became overspecialized and practically-oriented. During the Cultural Revolution, the social status of AP was inferior to the working classes (*e.g.*, workers, peasants, and soldiers).

(4) *Transition Period (1978-now): institutionalization and performance orientation.*

Since 1978, China has gradually adopted a market system. Then the higher education in China began to forge ahead steadily. An institutional

reform exploration was initiated in 1992, and the current position appointment system along with performance assessment came into effect (Wang, 2009). An incentive and competitive mechanism was introduced, and the relationship between academic performance and remuneration was established. The evaluation system put more attention on achievement especially research productivity.

During the last decades of the 20th century, the elite or world-class university project (985 and 211 Projects) were implemented respectively to promote university quality and development. Simultaneously, the Ministry of Education implemented a policy on college enrollment expansion at the end of the 20th century. With the substantial expansion of enrollment, the higher education system in China has fulfilled the transition from the elite to the massive system. These two changes are basic contexts for the study of current AP in China. Five obvious transformations in higher education resulted from the above social contexts: differentiation, massification, decentralization, marketization, and internationalization. These processes already have and will continue to shape AP well into the future.

Change has led the Chinese higher education system into a mixture having both traditional and modern traits. Thus, the traditional and modern patterns of universities coexist in the higher education system in which AP presents. The traditional organization is featured by diffused function and ascription orientation (*DAO*), whereas the modern organization is characterized as a specialized function and achievement orientation (*SAO*). Usually, the *SAO* organization performs higher level of organizational effectiveness (*OE*) than the *DAO* does. When discussed at the individual level, organizational effectiveness is measured by the *Organizational Effectiveness Perception (OEP)*. Rather than the objective conformation of the organizational features, this concept refers to the academics' sensation and perception of the organizational orientation, management strategy, collaborative relationship, decision making mechanism, degree of occupation differentiation, and evaluation mechanism, *etc*. It will be measured quantitatively by a group of questions related to organizational management designed in the self-rating scale. However, whether high organizational effectiveness leads to more academic research productivity remains unknown. Therefore, it is essential to verify the relationship between organizational effectiveness perception and academic research productivity. It should be noted that current organizational types are not equal to pre-modern and modern classification.

In sum, the world trend of research orientation for AP leads us to pay

attention to research productivity. While describing the influential factors on research productivity, international education degree as an important personal background will be taken into particular consideration, whereas the organizational background variable is controlled. Additionally, organizational effectiveness perception is an interactive element that mirrors individual judgment of the university which may have effects on academic behavior and performance. Based on almost 3000 questionnaires collected from academics working in 30 public universities in China, this study examines the effects of international education degree and organizational effectiveness perception on academic research productivity.

Literature review and theoretical framework

Academic research productivity can be regarded as one part of academic productivity. There have been accumulated many works on this topic. In general, the following aspects are dealt with in previous studies:

The time effect on academic research productivity

Research productivity over the life cycle has increasingly become an important topic to the American scientific community. Using data from the Survey of Doctorate Recipients (National Research Council) and the Science Citation Index, Levin & Stephan (1991) developed a model of scientific productivity. On average, scientists become less productive as they age. For the most part, vantage matters, but not in the way predicted from a point of view latest educated being best-educated. More recent vantages are never found to be significantly more productive than earlier vantages. Not only will the community be older, but over time the community will become increasingly dominated by scientists who did not come from particularly productive cohorts. Life cycle productivity in academic research has also been investigated in Goodwin & Sauer's (1995) paper by utilizing histories of research publications obtained from individual vitae. It was found that productivity in economic research rises sharply in the initial stages of a career, peaking at about the time of a normal tenure review before encountering a slow decline. Variation in career publication profiles and different attributes of individuals as manifested in career choices are strongly related to the timing and level of research productivity. It is confirmed that the distribution of productivity over the life cycle is hump shaped. The most productive researchers show little or no tendency for

productivity to decline until about 20 years of experience. A permanent loss in research productivity is associated with an individual's accepting an administrative position in academia (figure 1).

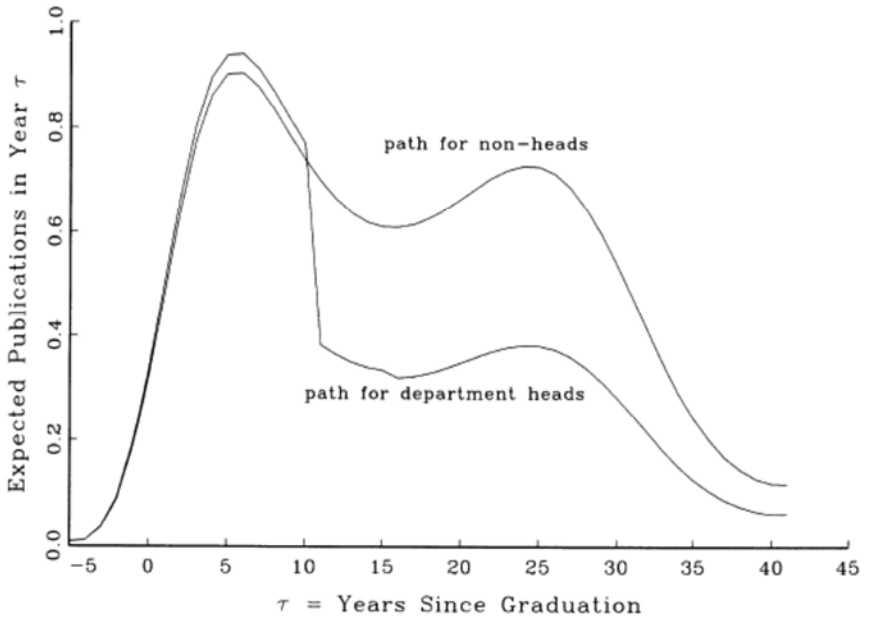


Figure 1. The curse of peer recognition (Goodwin & Sauer, 1995)

Factors influencing academic research productivity

Individual factors. Individual factors like gender, age, family situation (children's age), education background, *etc.* were found to be influential on academic research (Over, 1982; Horta, 2009; Stack, 2004; Sax, Hagedorn, Arredondo & Dicrisi, 2002). What is more, academic discipline and research funding were shown to have significant impacts on research productivity (Daizen, 2014). Age, gender, vantage, family background, education training, management position as well as the time point when academics get tenure appointment exert an impact on research productivity in a long-term period like life-cycle.

Organizational factors. Effects of organizational loyalty and professional commitment on academic research productivity were examined in Jauch, Glueck, & Osborn's (1978) research by using multiple linear regression. They found that researchers with the strongest professional commitment had higher research

productivity. Loyalty was found to be unrelated to productivity, and its interaction with professional commitment provided no explanation of unique variance in research productivity over the main effect of professional commitment. As what was found in Long, Bowers, Barnet, & White's (1998) study, the status of academic affiliation, rather than academic origin, had a relatively strong association with research productivity in terms of both number of publications in top journals and citation counts of these publications. Moreover, the reputation of higher education institutions contributes to academic publications (Porter & Toutkoushian, 2006). Besides, the institutional mission also plays an important part in faculty research productivity (Perry, Clifton, Menec, Struthers & Menges, 2000). Accordingly, academic affiliation, organizational reputation, institutional characteristics, perception of the organization, and commitment indeed contribute to academic research productivity.

Working condition factors. Some researchers focus on the collaborative research activity's influence on academic performance. Goldstein (1979) stated that scholars in the two same-sex conditions published significantly more research than did scholars in the two cross-sex conditions. Landry, Traore, & Godin (1996) claimed that collaboration, whether it be undertaken with universities, industries, or institutions, may increase researchers' productivity. The effect of collaboration on productivity varies according to both the scientists' geographical closeness to their partners and on their fields of research. Moreover, it was evidenced that collaboration between researchers and industry had significantly more impact on productivity than collaborations between researchers and their peers or researchers in other institutions. Researchers in humanities were examined to produce less materials in collaboration than scientists in other fields. Furthermore, scientist involved in collaboration aimed mostly at producing patented and unpatented products, scientific instruments, software and artistic production was also found to produce less. Insofar as a cooperative climate and collaborative work enhance research productivity (Shin & Cummings, 2010; Smeby & Try, 2005), international collaboration is one critical factor in research performance. In a word, same-sex cooperation, cross-organizational, cross-sector, and international collaborative research activities exert impacts on academic research productivity.

Other researches discussed about the relationship among research, teaching and service and combined it with study on academic research performance. Mitchell & Rebne's (1995) paper indicated that up to four hours per week of consulting and up to eight hours per week of teaching are indeed facilitative of

research productivity. Thus, workload and time allocation among different activities will influence academic research productivity.

Based on the previous empirical studies on AP, Gu (2012), using 2007 Changing Academic Profession (CAP) data, conducted research on the influence factors of academic performance and found that achievement was affected by both individual and organizational characteristics. For example, gender, age, spouse educational level, and housework time were found to exert influence on academic performance. In working conditions, efforts, title, and research cooperation's effect were shown to be significant. It is worth noting that the organizational factors were put into the regression model and some variables like research emphasized in higher education institutions (HEIs), performance orientation, funding conditions, HEIs levels, and resource allocation were all found to significantly affect academic performance.

In conclusion, academic research productivity is influenced by individual characteristics (age, gender, discipline, title, family background, and educational training); working conditions (management position, research collaboration, the time point when academics get tenure appointment, workload, time allocation among different activities, and research funding); as well as organizational factors (institutional reputation, HEIs level, mission, research importance regarded by HEIs performance orientation, *etc.*).

However, research orientation, personnel decision-making pattern and administrative support's effects on working conditions were not considered in previous research. In addition, it neglects the AP's working preference and international education experience. Furthermore, the differences between organization effectiveness perception and organization effectiveness are not previously clarified and separately explored, although it is quite important to distinguish the effects of perception and objective measurement. Finally, even though a dynastic research view has been introduced into some research studies in China, seldom have scholars combined the perspective with relative transition period theories such as modernization or world culture. As a result, institutional and cultural characteristics were not systematically taken into consideration.

Consequently, it is assumed that academic research productivity is not only affected by individual, family, and organizational features, but also by the institutional structure and cultural elements in this research.

Based on the previous literature review, the theoretical framework is depicted in the following figure.

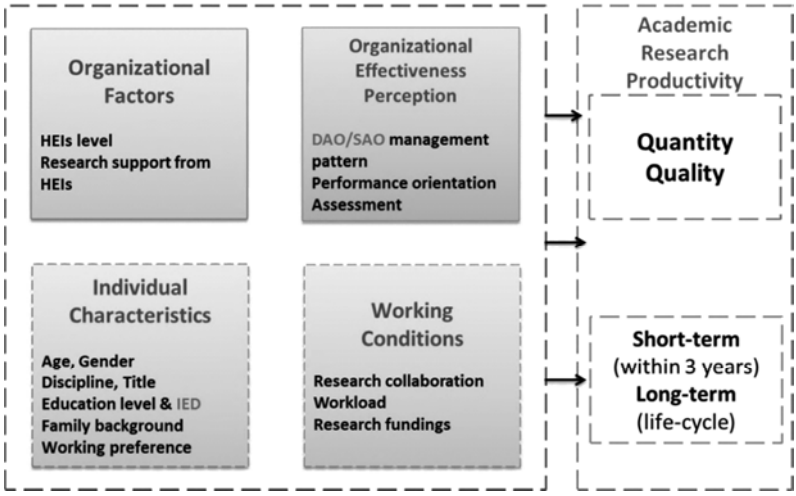


Figure 2. Theoretical framework

Method and data

This essay adopts an empirical research approach to explore the influencing factors on research productivity. Collecting data by a questionnaire, it uses the statistical method to analyze data. The data analysis software tools used are SPSS 19.0 and Stata 12.0. Multiple linear regression, cluster and ANOVA analysis are employed in this study.

A stratified sampling investigation was conducted in 2012 involving 30 public HEIs in China. 3000 questionnaires were given out, and 2807 valid questionnaires were collected. The population of this survey is full-time faculty in four-year public HEIs in China. There are three levels of sampling: HEI, college (department), and individual. The main stratified variables are region, subject, and professional title. There are 1,456 male and 1,283 female valid samples, the percentage female is 46.8% of the total. The basic structure of the sample can be found in the appendices.

Short-term academic research productivity among different groups

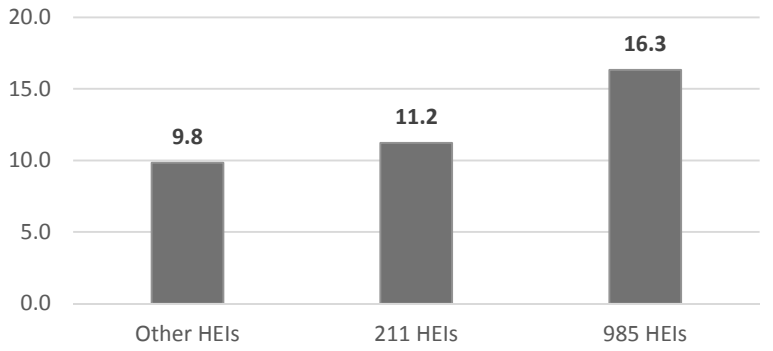
Academic research productivity of AP from different HEIs in short term

Quantitative dimension. According to the ANOVA analysis, there are significant publication amount differences among AP in distinctive HEIs (at

0.001 level) as it is shown in Figure 3. The research productivity of AP in so-called "985" HEIs is much higher than those that are in "211" HEIs and other HEIs categories on quantitative dimension.

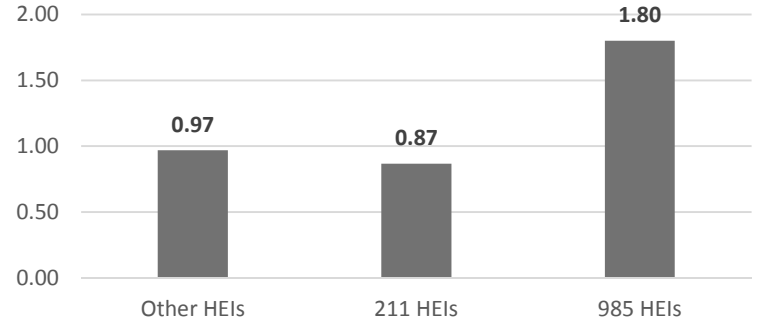
Qualitative dimension. Qualitatively, Figure 4 shows the same trend, that is, the average research publications with international cooperation (of per AP) in "985" HEIs is significantly more than that of "211" and other HEIs at 0.001 level.

For ease of statistical analysis, we weighted one international collaboration publication as two native publications and established a new dependent variable "WARP" representing both quantitative and qualitative characteristics of academic research productivity (ARP).



Note: Data from International Survey database of Changing Academic Profession in Asia (2012)

Figure 3. Average academic research publications of per AP among different HEIs in recent three years

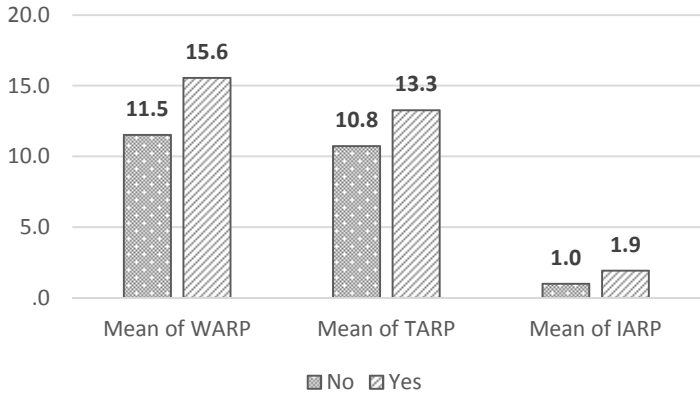


Note: Data from International Survey database of Changing Academic Profession in Asia (2012)

Figure 4. Average academic research publications with international cooperation of per AP among different HEIs in recent three years

Short-term ARP of AP with different international education degree (IED)

Based on the ANOVA analysis, it was found that there are significant differences between AP with and without IED on ARP (at 0.05 level). Those with IED publish much more than those without IED (Figure 5).



Note: Data from International Survey database of Changing Academic Profession in Asia (2012)

Figure 5. Average ARP differences between AP with and without international education degree in recent three years

Short-term ARP of AP with different OEP

Before discussing ARP, the content of Organizational Effective Perception (OEP) should be defined. In the Chinese version of the APA questionnaire, three questions with 27 items are related to the AP's perception about the organizational management, one question involving 8 items asks about the assessment. Through factor analysis, two management pattern factors (SAO/ DAO); two incentive factors (research performance orientation/ teaching and service orientation); and two assessment factors (internal evaluation/ external evaluation) are abstracted from the specific questions.

According to factor analysis results, it was found that the first management style SAO has the following characteristics: clear mission, flat decision structure, effective participation, specialized function, achievement orientation, and benign cooperation whereas the other style DAO expresses bureaucratic decision structure, inefficient participation, diffused function as well as ascription orientation (Table 1 & 2). These two diverse management patterns are coincident with the modernization switch from generalization to specialization

and from an ascription to an achievement orientation.

By means of factor and correlation analysis, it was determined that both incentive pattern perception factors are significantly related to the HEIs layers at 0.05 level. Those AP working in higher layers are more likely to judge their incentive pattern as the first mode, that is, the research university mode (Table 3). As both patterns reveal the performance orientation direction, the only difference is emphasizing the degree of this tendency in consideration of the effect of these two factors can be reflected from the HEIs variable. Therefore, the very item named "strong performance orientation" is chosen to represent the degree of performance orientation incentive characteristic in this article.

Table 1. Management pattern perception: SAO

Management pattern	Specific items
Clear mission	Unique and clear organizational mission
	A strong emphasis on the institution's mission
Flat decision structure	Top-level administrators are providing competent leadership
	Collegiality in decision-making processes
Effective participation	I am kept informed about what is going on at this institution
	Good communication between management and academics
Specialized function	Increasing professional level of administration
Achievement orientation	The incentive mechanism is based on fierce internal competition
Benign cooperation	A supportive attitude of administrative staff to teaching activities
	A supportive attitude of administrative staff to research activities
	The administration supports academic freedom
	A supportive attitude of faculty switching to administration

Note: Kaiser-Meyer-Olkin value is 0.912, Bartlett sphericity test significance level is 0.000.

Table 2. Management pattern perception: DAO

Management pattern	Specific items
Bureaucratic decision structure	A top-down management style
	A cumbersome administrative process
Inefficient participation	Lack of faculty involvement is a real problem
Diffused function	Administrators often switch positions
	Most administrators also do research
Ascription orientation	Most administrators get their positions by internal promotion

Note: Kaiser-Meyer-Olkin value is 0.912, Bartlett sphericity test significance level is 0.000.

The AP's perception about evaluation or assessment patterns mainly divides into two directions: internal and external evaluation modes. On account of the factor analysis, the former generally refers to the condition that assessment subjects are composed by peers and directors in the same department or unit. Correspondingly, the latter contains multiple subjects such as members of other departments or units and external reviewers, *etc.* (Table 4). In view of an external evaluation pattern involving multiple subjects making it difficult to abstract the core connotation accurately so the item "external reviewers" is selected to represent the external evaluation pattern in this paper, as it generalizes the most information of external assessment.

Table 3. Incentive pattern perception: Research/ Comprehensive university mode

Incentive pattern	Specific items
Research university mode	Strong performance orientation
	Performance based allocation of resources to academic units
	Funding of departments substantially based on numbers of students
	Considering the research quality when making personnel decisions
Comprehensive university mode	Considering the teaching quality when making personnel decisions
	Considering the practical relevance/applicability of the work of colleagues when making personnel decisions
	Recruiting faculty who have work experience outside of academia
	Encouraging academics to adopt service activities/entrepreneurial activities outside the institution
	Student should participate more in policy making

Note: Kaiser-Meyer-Olkin value is 0.912, Bartlett sphericity test significance level is 0.000.

Table 4. Evaluation pattern perception: internal and external modes

Evaluation pattern	Specific items
Internal evaluation	Your peers in your department or unit
	The head of your department or unit
External evaluation	Members of other departments or units at this institution
	Senior administrative staff at this institution
	Your students
	External reviewers
	Yourself (formal self-assessment)

Note: Kaiser-Meyer-Olkin value is 0.764, Bartlett sphericity test significance level is 0.000.

Short-term ARP of AP with different management pattern perception. As Table 5 shows, there is significant partial correlation between SAO perception score and WARP, while the correlation between DAO perception score and WARP is not significant. However, it can be observed that both SAO and DAO perception scores are positively related to TARP, in other words, the total amount of publications. Conversely, the IARP (measure of quality of publications) is neither significantly related to SAO nor DAO.

Short-term ARP of AP with different organizational performance orientation perception. With HEIs layers under control, there is significant correlation examined between WARP and organizational performance orientation at 0.1 level. The positive correlation mainly presents itself in TARP with the significance level of 0.1. Yet, the relationship between IARP and performance orientation perception is proved to be insignificant (Table 6)

Table 5. Partial correlation between short-term ARP and management pattern perception

	SAO perception score	DAO perception score
WARP	0.058*	0.042
TARP	0.060*	0.060*
IARP	0.022	-0.039

Note: *p<0.1, **p<0.05, ***p<0.01. Control variable is HEIs layers.

Table 6. Partial correlation between short-term ARP and performance orientation perception

	performance orientation perception
WARP	0.053*
TARP	0.061*
IARP	-0.004

Note: *p<0.1, **p<0.05, ***p<0.01. Control variable is HEIs layers.

Table 7. Partial correlation between short-term ARP and performance evaluation perception

	External evaluation perception
WARP	0.069**
TARP	0.094***
IARP	-0.046

Note: *p<0.1, **p<0.05, ***p<0.01. Control variable is HEIs layers.

Short-term ARP of AP with different evaluation pattern perception. The correlation between external evaluation perception and ARP appeals to be significant at 0.05 level according to Table 7 controlling HEIs layers. The WARP and TARP are both positively related to external reviewer's assessment

Econometric model

It is hypothesized that academic research productivity (ARP) is not only affected by individual, family, and organizational features, but also by the international education degree (IED) as well as the organizational effectiveness perception (OEP) in this paper.

Multiple linear regression analysis of factors affecting on the ARP

Using statistical softwares of Stata 12.0 and SPSS 19.0, the variables that influence on the ARP are analyzed (Table 8).

The econometric model is listed below:

$$ARP=\beta_1+\beta_2[female_i]+\beta_3[age_i]+\beta_4[preference_i]+\beta_5[international\ education\ degree_i]+\beta_m[degree_i]+\beta_n[title_i]+\beta_p[subject_i]+\beta_q[HEIs\ layer_i]+\beta_6[workload_i]+\beta_7[fundamental\ research_i]+\beta_8[applied\ research_i]+\beta_9[business\ oriented\ research_i]+\beta_{10}[social\ service_i]+\beta_{11}[research\ support_i]+\beta_{12}[performance\ orientation_i]+\beta_{13}[SAO_i]+\beta_{14}[external\ evaluation_i]+\mu i \quad (m=1,2;\ n=1,2,3;\ p=1,2,3;\ q=1,2)$$

Results and conclusion

Factors impacting on WARP. The research preference, professional title, HEIs layer, workload, research funding support, and SAO score significantly and positively influence on WARP, but performance orientation perception exerts negative effect on WARP.

Factors impacting on TARP. Beside the same influential factors with WARP, there are still some other elements working on TARP such as applied and social service research orientation. Similarly, performance orientation perception has a negative effect on TARP.

Factors impacting on IARP. The IARP mechanism seems to be different from both WARP and TARP. Only title, discipline, research support funding and fundamental research orientation play a role in the quality of ARP. It is

worth mentioning that there are still other important factors that remain unknown and need to be explored in future research. Additionally, the R-squared is 0.1185, not as higher as the other two models (Table 9).

Table 8. Variable label and attribute

Dependent variable: WARP, TARP & IARP	Label	Attribute
Control variables		
(1) Individual characteristics		
female	0=male	dummy
age		continuous
working preference: research	0=teaching	dummy
degree: master degree	0=bachelor degree	dummy
degree: doctoral degree	0=bachelor degree	dummy
title: lecturer	0= TA	dummy
title: associate professor	0= TA	dummy
title: professor	0= TA	dummy
discipline: humanities	0=social science	dummy
discipline: natural science	0=social science	dummy
discipline: other subjects	0=social science	dummy
(2) Organizational factors		
HEIs layer: 211 HEIs	0=other HEIs	dummy
HEIs layer: 985 HEIs	0=other HEIs	dummy
research funding support from HEIs		continuous
(3) Working conditions		
workload per week (with teaching task)		continuous
research orientation: fundamental research	5 points	ordinal
research orientation: applied research	5 points	ordinal
research orientation: business oriented research	5 points	ordinal
research orientation: social service	5 points	ordinal
Independent variables		
(1) IED: international education degree		
international education degree achievement	0=no	dummy
(2)OEP: organizational effectiveness perception		
SAO management pattern perception score		continuous
performance orientation perception score	5 points	ordinal
external evaluation perception	0=internal EP	dummy

Table 9. Multiple linear regression analysis of factors affecting on the short-term ARP

Dependent variable:	WARP	TARP	IARP
Control variables			
(1) Individual characteristics			
female	0.147	-0.335	0.133
	(0.832)	(0.706)	0.261
age	-0.035	-0.071	-0.030
	(0.112)	(0.094)	0.029
working preference: research	3.207***	2.788***	0.270
	(0.817)	(0.694)	0.260
degree: master degree	-1.466	-0.700	-0.922
	(1.950)	(1.502)	0.664
degree: doctoral degree	1.378	1.746	-0.632
	(1.987)	(1.543)	0.692
title: lecturer	5.366***	4.863***	0.935**
	(1.326)	(1.113)	0.430
title: associate professor	8.637***	8.355***	1.208**
	(1.799)	(1.545)	0.532
title: professor	12.894***	12.835***	2.007***
	(2.396)	(2.011)	0.762
discipline: humanities	-0.433	0.190	-1.051***
	(1.188)	(1.095)	0.312
discipline: natural science	0.795	0.596	0.197
	(0.957)	(0.834)	0.282
discipline: other subjects	-4.692**	-3.447	-1.213**
	(2.304)	(2.124)	0.495
(2) Organizational factors			
HEIs layer: 211 HEIs	1.018	1.327	-0.187
	(0.948)	(0.831)	0.279
HEIs layer: 985 HEIs	5.129***	4.718***	0.288
	(1.617)	(1.375)	0.483
research funding support from HEIs	0.041**	0.025	0.013**
	(0.017)	(0.021)	0.006
(3) Working conditions			
workload per week (with teaching task)	0.054***	0.042***	0.005
	(0.019)	(0.015)	0.005
research orientation: fundamental research	0.508	0.441	0.213**
	(0.374)	(0.326)	0.107

Dependent variable:	**WARP**	**TARP**	**IARP**
research orientation: applied research	0.515	0.628*	-0.166
	(0.441)	(0.347)	0.143
research orientation: business oriented research	0.456	0.423	-0.021
	(0.522)	(0.448)	0.147
research orientation: social service	0.582	0.725**	-0.070
	(0.400)	(0.355)	0.110
Independent variables			
(1) IED: international education degree			
international education degree achievement	2.137	0.803	0.823
	(2.575)	(2.061)	0.741
(2) OEP: organizational effectiveness perception			
SAO management pattern perception score	0.903**	0.610	0.174
	(0.414)	(0.391)	0.126
performance orientation perception score	-0.917*	-0.825*	-0.242
	(0.546)	(0.474)	0.152
external evaluation perception score	0.786	1.136	-0.312
	(0.810)	(0.737)	0.219
_cons	-1.848	-1.682	2.545*
	(5.012)	(4.179)	1.472
Number of observations	504	550	504
Prob > F	0.0000	0.0000	0.0000
R-squared	0.3196	0.3274	0.1185
Durbin Watson	1.821	1.823	2.029
VIF	<10	<10	<10

Note: *p<0.1, **p<0.05, ***p<0.01.
Data from International Survey database of Changing Academic Profession in Asia (2012)

In conclusion, the OEP's effects on ARP are complicated. The modern SAO management pattern perception has significant positive influence on WARP. However, its effect is limited and not as effective as the other factors, for instance, the preference, title, and HEIs layers even if its influence is larger than workload. Furthermore, in consideration that title and HEIs layer have, for the most, implied the unobserved capability of AP and organizational effectiveness, the OEP's impact is an associative but essential good based on personal motivation, talent, effort or involvement, organizational conditions, and the interaction between individual and organization as well. Still, an interesting discovery in this article is that the performance orientation exerts a negative

effect rather than positive one on the ARP. Thus, HEIs administrators may reexamine the current management pattern if it over-emphasizes short-term profits and should take a broad and long view about academic productivity.

Moreover, the effect of IED is shown to be insignificant in all three models after controlling individual and organizational variables. It may be due to the following reasons: (1) IED is one of the labels reflecting AP's unobserved abilities such as title through which its effect is shunted; (2) its effect reduces as time elapses and mainly expresses itself on the process of recruitment and vanishes afterwards; (3) sample size is quite small, and it cannot represent the target population. Recently, it can be frequently found that the IED becomes an essential prerequisite to be recruited into a "985" or "211" universities. The salary preferential treatment may last for as long as ten years until a fresh assistant professor acquiring his/her associate or full professor. Taking a step back and assuming that the IED indeed has no significant influence on ARP, then the necessity of being discriminatory on salary should be further discussed, provided that the discrimination actually exists. Besides, the long-term effect of ARP has not been illustrated so far in this paper.

Discussion

In this part, the long-term ARP effect is explored from two aspects: (1) age effect and (2) professional title effect. First, it should be stated that the result is a biased estimate because of the use of cross-sectional data and lack of longitudinal data. There will be an over-estimation of younger AP's ARP and an under-estimation of elder AP's ARP due to the increasing maturity of academic publication system and development of research activities.

Long-term age effect on AP's ARP

As can be seen in Figure 6, the ARP during long-term experiences a "tide wave" trend and reaches peak at 41-50 age group, then reduces slowly.

Long-term professional title effect on AP's ARP

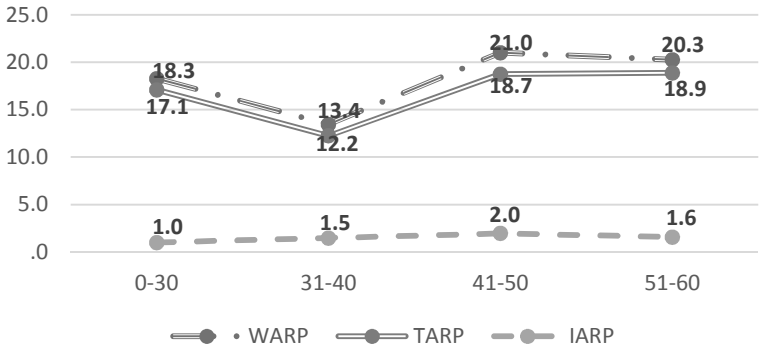
Different from the age effect trend line, the ARP continuously increases with the promotion of professional title which reveals the Matthew effect of ARP (Figure 7).

Furthermore, the discriminatory on salary of AP with different IED background is discussed through multiple linear regression analysis of factors impacting on faculty income (Table 10).

The econometric model is listed below:

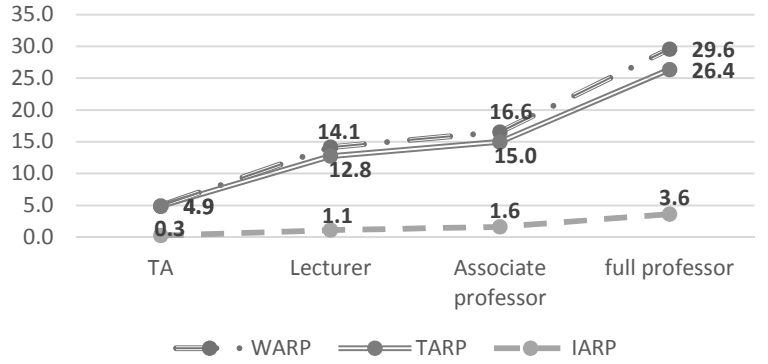
$$Z=\beta_1+\beta_2[female_i]+\beta_3[age_i]+\beta_4[international\ degree\ educaiton_i]+\beta_5[preference_i]+\beta_m[degree_i]+\beta_n[title_i]+\beta_6[father\ SE_i]+\beta_p[subject_i]+\beta_q[institutional\ level_i]+\beta_7[research\ program\ number_i]+\beta_8[\%\ of\ teaching\ time\ for\ BC_i]+\beta_9[workload_i]+\beta_{10}[fundamental\ research_i]+\beta_{11}[applied\ research_i]+\beta_{12}[business\ oriented\ research_i]+\beta_{13}[social\ service_i]+\beta_{14}[research\ support_i]+\beta_{12}[performance\ orientation_i]+\beta_{13}[SAO_i]+\beta_{14}[external\ evaluation_i]+\mu i$$

$$(m=1,2;\ n=1,2,3;\ p=1,2,3;\ q=1,2)$$



Note: Data from International Survey database of Changing Academic Profession in Asia (2012)

Figure 6. Long-term age effect on AP's ARP



Note: Data from International Survey database of Changing Academic Profession in Asia (2012)

Figure 7. Long-term professional title effect on AP's ARP

Table 10. Multiple linear regression analysis of factors impacting on faculty income

Dependent variable: Annual after-tax income		
female	-0.195	(0.321)
age	0.092**	(0.038)
international education degree (0=none)	3.155**	(1.234)
preference: research	-0.406	(0.294)
master degree(0=bachelor degree)	0.382	(0.583)
doctoral degree	1.045	(0.642)
lecturer(0=TA)	1.057***	(0.403)
associate professor	2.068***	(0.581)
full professor	4.532***	(0.941)
father's social status	0.362	(0.298)
humanities (0=social science)	-0.919*	(0.557)
natural science	-1.452***	(0.320)
other subjects	-1.404***	(0.513)
“211” institutions (0=general colleges)	0.191	(0.265)
“985” institutions	1.566***	(0.595)
research project number	0.138*	(0.077)
% of teaching time allocated to undergraduate students	-0.025***	(0.006)
working hours per week (with teaching task)	-0.003	(0.006)
research orientation: fundamental research	-0.078	(0.135)
research orientation: applied research	0.105	(0.147)
research orientation: business oriented research	0.288*	(0.173)
research orientation: social service	0.064	(0.117)
research funding support of HEIs	0.425**	(0.172)
_cons	1.646	(2.171)
Number of observations	1333	
Prob > F	0.0000	
R-squared	0.2471	
Durbin Watson	1.984	
VIF	<10	

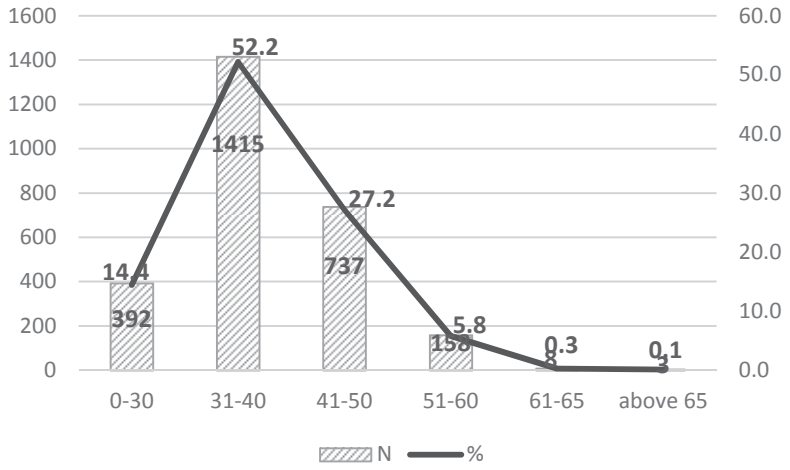
Note: *** p<0.01, ** p<0.05, * p<0.1
Data from International Survey database of Changing Academic Profession in Asia (2012)

The results show that individual characteristics, working behavior, research orientation, and organizational support exert impacts on the faculty income. The institutional factors like SAO mode and evaluation did not have significant effect on income. IED experience has remarkable impact on income while it does not contribute to academic publication prominently controlling other variables which lead to a reconsideration about the unbalance between input and output. But this argument is not grounded solidly due to small sample size, and further exploration is needed. Based on the concept of *Status Differential Effect (SDE)*, the status differential effect in this study is distinguished from the traditional definition of social hierarchy in business administration research on information communication out of ordinary. It refers to differences brought from geographical displacement of AP, which can be divided into two types of differentia: human capital and social capital. The former contains distinctions in two dimensions: vertically on explicit knowledge, that is, discipline cognitive maturity, and horizontally on implicit knowledge, in other words, assimilation of alien culture and institution. Whereas the latter represents the added value endowed by the society owing to the signal effect related to differences between those with or without the IED. Whether the performance of scholars with IED is over-optimistic should be further examined in subsequent research. The title's influence on faculty income was confirmed significantly, and there are conspicuous income differences among diverse HEIs levels and disciplines. Faculty in social science earned much more than those in other subjects. Amount of research projects at hand and commercial research orientation have effects on income gained. Finally, a noteworthy finding is that the lower the percentage of time spent on undergraduate students, higher the income is, which uncovered the fact that current incentive system actually encouraged effort in postgraduate teaching rather than undergraduate teaching.

In sum, even though empirical analysis is utilized in this article to demonstrate previous points on cultural and institutional interpretation, the process is very complicated. More field studies should be followed by combining multiple research perspectives with different methods. The reliability and validity of main dependent variables used in the article need to be illustrated further, and path analysis can be introduced into the mechanism study so that the interaction between all independent variables can be clarified. The cause and effect discussion and the linkage between data analysis and conclusion can be explored by further research.

Appendices

Survey sampling



Note: Data from International Survey database of Changing Academic Profession in Asia (2012)

Figure 8. The distribution of age

Table 11. Stratified sampling scheme (Region)

	Numbers of public HEIs		Practical Sampling Numbers	
	N	%	N	%
North Eastern	107	12.7	4	13.3
North	145	17.2	6	20.0
East	239	28.4	9	30.0
South	68	8.1	2	6.7
Southwest	93	11.1	3	10.0
Northwest	79	9.4	1	3.3
Central	110	13.1	5	16.7
Total	841	100.0	30	100.0

Note：Data from International Survey database of Changing Academic Profession in Asia (2012)

Table 12. Stratified sampling scheme (Discipline)

	Faculty Numbers		Practical Sampling Numbers	
	N	%	N	%
Humanities	338982	25.2	414	16.4
Social Science	350793	26.1	876	34.7
Engineering Science	364646	27.1	588	23.3
Natural Science	288706	21.5	647	25.6
Total	1343127	100.0	2525	100.0

Note：Data from International Survey database of Changing Academic Profession in Asia (2012)

Table 13. Stratified sampling scheme (Professional title)

	Faculty Numbers		Practical Sampling Numbers	
	N	%	N	%
Professor	148552	11.7%	410	15.2
Associate Professor	377225	29.6%	917	34.0
Lecturer	516938	40.6%	1197	44.4
Assistant Professor	231099	18.1%	171	6.4
Total	1273814	100.0%	2695	100.0

Note：Data from International Survey database of Changing Academic Profession in Asia (2012)

Table 14. Descriptive statistics of samples (1)

		N	%
Gender	male	1456	53.2
	female	1283	46.8
Marriage	Yes	2473	90.0
	No	236	8.6
	other	40	1.5
Offspring	No	559	20.5
	One	2112	77.6
	Two or more	50	1.8
Title	Assistant Prof.	171	6.3
	Lecturer	1197	44.4
	Associate Prof.	917	34.0
	Prof.	410	15.2

Education degree	Bachelor	284	10.2
	Master	1289	46.2
	Doctoral	1215	43.6
International education degree	No	2629	95.6
	Yes	121	4.4
Working preference	Teaching	1415	51.6
	Research	1325	48.4
HEIs Layer	other HELs	1891	67.4
	211	619	22.1
	985	297	10.6

Note：Data from International Survey database of Changing Academic Profession in Asia (2012)

Table 15. Descriptive statistics of samples (2)

	N	Mean	SD
Academic research publications (within recent 3 years)	1117	10.85	9.35
Average annual income (10 thousand)	2529	7.15	5.42
Workload per week with teaching task (hour)	2807	39.58	25.76
Workload per week without teaching task (hour)	2806	22.18	32.34
Hours spent on teaching (with teaching task)	2763	17.08	13.58
Hours spent on research (with teaching task)	2498	15.55	13.73
Hours spent on administration (with teaching task)	2498	2.09	4.31
Hours spent on service (with teaching task)	2498	5.41	9.63
Hours spent on teaching (without teaching task)	1392	10.35	12.70
Hours spent on research (without teaching task)	1391	20.36	17.85
Hours spent on administration (without teaching task)	1392	2.89	7.46
Hours spent on service (without teaching task)	1392	7.76	13.56
Research fund in past 3 years (10 thousand)	1752	40.95	234.62
of which from present HEIs	1698	5.10	31.45
of which from local government and public institutions	1718	25.74	209.90
of which from NGO and business	1698	5.48	41.23
of which from foreign government or international organizations	1698	2.65	48.61

Note：Data from International Survey database of Changing Academic Profession in Asia (2012)

Descriptions of abbreviations

Table 16. Descriptions of abbreviations

Abbreviations	Descriptions
AP	Academic profession
ARP	Academic research productivity
WARP	Weighted academic research publications
TARP	Total academic research publications
IARP	International academic research publications
IED	International education degree
OE	Organizational effectiveness
OEP	Organizational effectiveness perception
SAO	Specialized function and achievement orientation
DAO	Diffused function and ascription orientation
HEIs	Higher education institutions
SDE	Status differential effect

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Career Prospects of the Malaysian Academic Profession

Aida Suraya Md.Yunus [*] and Vincent Pang[**]

The general scenario of Malaysian academic profession

The massification of higher education in Malaysia began in 1996 after the enactment of the Private Higher Education Institutions Acts together with a few other related Acts. Currently the Malaysian higher education system consists of 20 public universities and about triple that number of private higher learning institutions. Academics are classified into the ranks of professors, associate professors, senior lecturers, lecturers, and tutors.

On average, Malaysian academics spend 18.19 hours on teaching and 7.98 hours on research when classes are in session and 8.61 hours on teaching and 13.46 hours on research while classes are not in session (Azman *et al.*, 2014). These numbers indicate that even when university students are on vacation, which is an ideal time for academics to catch up with research activities, academics are still busy with teaching tasks. In general, academics in all categories of universities prefer to engage in both teaching and research activities, with those in research intensive universities are more inclined toward research, whereas their peers in comprehensive and technical universities more toward teaching (Azman *et al*., 2014).

The Malaysian section of the Changing Academic Profession (CAP) Project dataset reveals that the profession consists of an almost balanced distribution of

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51.7% males and 48.3% females. The mean age is 39.5 years. Almost all (98.6%) the members of the profession are employed full time. For those who are employed on contract, the average contract duration is 1.37 years only. About 40% of them possess doctoral degrees.

At the entry point to the profession, a section of the members join after serving in industry. The other section was recruited upon graduation. Those who graduate with further degrees are admitted as lecturers, whereas some top performers from bachelor's degree programs are given scholarships by public higher education institutions to pursue master and doctoral degrees, with a contract to serve as academics upon graduation.

Attractiveness of the academic profession

The carrots in the profession

As statutory bodies, the salary and promotion of academic staff in public higher education institutions (HEI) are administered by the institutions and regulated by the Public Service Department (PSD). Generally, public HEIs offer remuneration schemes and more promising career paths which are more attractive than most other sectors in the public service. The salary scheme of these academics is based on the overall remuneration structure set by PSD. With the status as civil servants, all academics enjoy the perks of the civil service including an almost guaranteed annual increment until the attainment of the ceiling pay, pension, and free health services.

As an illustration of the promotion exercise, the University of Malaya (n.d.) states that promotion of academic staff is to provide growth in the academic career based on their achievement in their related discipline of expertise. Promotion can be exercised through two channels: under normal and special circumstances. Promotion under normal circumstances follows the usual path which is hierarchical. On the other hand, promotion under special circumstances allows academics to skip one or more ranks, providing flexibility to allow outstanding academics to have a preferred position in the university. Almost similar to civil service, the standard criteria for promotion are confirmation in the service; passing the assessment of required competency levels; and achievement of acceptable level of excellence and conditions stipulated by University Board of Directors, with the recommendation of the department head. The level of excellence is considered in the areas of teaching and supervision; research, consultation and publication; professional or academic

expertise; leadership and academic contribution; and recognition and networking (especially for the promotion of professor to a higher grade). In addition, the length of service is also considered in promotion (Table 1).

Table 1. Lengths of service and related criteria for promotion

Position	To position	Length of service
< Promotion in normal circumstances >		
Lecturer	Senior Lecturer	3 years + PhD / 5 years Special Case(without PhD)
Senior Lecturer	Associate Professor	2 years + PhD / 4 years Special Case(without PhD)
Associate Professor	Professor Special Grade C	1 year + PhD / 7 years Special Case(without PhD)
Professor Special Grade C	Professor Special Grade B	3 years
Professor Special Grade B	Professor Special Grade A	2 years
< Promotion in special circumstances >		
Lecturer	Associate Professor	3 years + PhD
Lecturer	Professor Special Grade C	3 years + PhD
Senior Lecturer	Professor Special Grade C	3 years + PhD

Source: the University of Malaya (n.d.)

With varying types of mission, institutional ownership, size *etc.*, the remuneration schemes, career paths, and promotion exercise in private HEIs are much more varied and flexible. In general, academics in public HEIs enjoy higher remuneration and an extremely high level of job security which grants them almost permanent employment. A superior must provide substantial evidence and must exert much effort to terminate the employment of a civil servant. As an illustration for comparison, the maximum salary of a professor in a public and private HEI are approximately USD 6,000 and USD 5,000 respectively, and the comparison for lecturers are approximately USD 5,000 and USD 3,000. With the cost of living in Malaysia, an academic would have a fairly comfortable life.

In all public HEIs, the annual excellent service award ceremonies are conducted to show appreciation for academics who have shown excellence in teaching, supervision, research, publication, and professional services for the year of appraisal. This may be the top 5% of the population of academics in every faculty. The reward includes a certificate and cash. In research intensive universities, cash rewards are given to academics who have shown excellence in research productivity based on measurable outputs such as total impact factors; number of publications in Institute for Scientific Information

(ISI) journals; number of citation; and H-index. Prestigious awards in the form of fellowship grants are also given to the ones who have shown excellence for each category: teaching, research, and consultation. At Universiti Putra Malaysia, the one selected for the Vice Chancellor Teaching Fellowship Award has to undergo several processes which include assessment of the teaching portfolio, observation of teaching, and interview. The fellowship award for consultation is based on the amount that was received for the consultation project for the year while the research award is based on overall research performance.

Academic freedom

From the perspective of intrinsic motivation, another reason that attracts people to join the academic profession is the expectation of academic freedom. Academic freedom is the freedom of individual or collective members of the academic community in the pursuit of developing and disseminating knowledge, through academic work such as study, research, discourse, documentation, production, knowledge creation, teaching, and writing (Canadian Association of University Teachers, 1999). It is a key value in universities, and with it comes responsibility expected of all members of the academic community.

Aarrevaara (2010) relates academic freedom with the academic profession situation in three ways: there is autonomy in institutional governance; there is legislation to facilitate and guarantee academic freedom; and there is knowledge culture in which knowledge is produced for the sake of knowledge. Many Malaysian academics, especially the younger ones, join the profession with the hope of exercising academic freedom.

What it takes to be competitive in the profession

Traditionally, work expectations of academics consisted of teaching and supervision; research and outputs generated from research which include publications, patents, copyrights, and products; and professional services which include consultation projects, community engagement projects, and administrative work. The combination of these three tasks at varying degrees allows institutions to categorize faculty members along a continuum. Community engagement and administrative work have been given importance as 'standard' tasks of academics.

In fact, as a result of massification and commodification of higher

education, an academic currently engages in a multiplicity of broader activities ranging from not only teaching and research but also writing proposals; developing contacts; designing and delivering e-learning contents; engaging in technology transfers; finding openings for internships for students; making links with regional, national, and international bodies; taking part in public debates; sharing expertise; and supporting public policies. These days, activities other than teaching, research, community engagement and administration are not considered as peripheral secondary, but are recognized as important aspects of academic work. In Germany and the United States, for instance, the ability to raise money and to manage research projects using external funding is one criterion for hiring professors (Musselin, 2007). In France, academic productivity is a criterion set by the Directors of the National Research Institution on Agronomy (INRA) and management competencies are seen as important as elements in scientific profiles by some European HEIs (Morshidi & Sarjit, 2007).

Likewise in Malaysia, to stand out from others, a member of the academic profession needs not only to teach and supervise with quantity and quality, he or she needs to secure large amounts of research grants (preferably international ones); produce articles in high impact journals; provide advocacy and consultancy services; and produce other outcomes and outputs of tasks mentioned in the previous paragraph. In this light, Maimunah and Roziah (2007) suggested that members of the academic profession were expected to possess high level of competence, to perform simultaneous and multiple academic responsibilities and to be independent and flexible.

Issues and challenges

The broadening of the range of outcomes and outputs of academics poses issues and challenges for them, and indirectly for administrators in HEIs and the Ministry of Education. Incidentally or coincidentally, the expectation of Malaysian members of the academic profession took a drastic turn in the second half of the last decade with the introduction of some reform initiatives. Among these were the Malaysian Qualifications Agency Act (2007), the National Higher Education Strategic Plan Towards 2020 and Beyond (Ministry of Higher Education (MOHE), 2007a) and its associated action plans (MOHE, 2007b, 2011a, 2011b). These led to additional auditing activities and performance measurement systems with their associated key performance indicators (Pang *et al.*, 2011).

More recently, the country introduced the Government Transformation Program (GTP) after the 12th General Elections (Prime Minister's Office, 2010). The GTP outlined several National Key Result Areas (NKRAs) designed to advance the nation toward developed status as the Vision 2020 draws near. The introduction of a predetermined target known as Key Performance Indicators (KPI) for NKRAs in the Higher Education Sector has impacted its workforce, academicians, and support staff (Tajul *et al*., 2012). These KPIs cover the quantity and quality of research grants, as well as quantity and quality of publications such as citation indices and impact factors. Whether these new expectations and demands are able to re-orient academics or demotivate them and drive them away is a concern to higher education stakeholders.

These concerns was also voiced by Zain *et al.* (2010) who said that Malaysian academics are expected to be able to carry out their core activities of research, teaching and administration, as well as to demonstrate outstanding contribution in the following categories in order to be promoted to associate professor or full professor: publication, research, teaching, academic recognition, and service to the university and the community. With limited time and work overloads, this may induce strain or stress in their lives.

According to Biggs (2003), with the massification of higher education, a large number of students may not see HEI as a place to develop passion for in-depth studies for the subject areas of their choice. Instead, today, the main objective of most students is to enrol in a course simply to obtain a better job with a higher salary. It stifles the pursuit of academic freedom related to the culture in which knowledge is produced for the sake of knowledge. The impact caused by this trend is compounded by the new demand of associating graduate quality with employability, and more active participation of industry players in curriculum design and implementation activities.

Research methodology

The Academic Profession in Asia (APA) project, initiated by Hiroshima University, was a continuation of the Changing Academic Profession (CAP) project (2007) but with a special focus on Asia. Ten Asian countries agreed to participate and the Hiroshima International Workshop on July 17-18, 2011 was held to establish the methodology and survey method for the project. Further refinement of the survey was made via email discussions. To allow comparisons with data captured in the CAP project (2007), a similar questionnaire was selected for the APA project.

To allow each country to address the differences in their context of higher education, each was given the freedom to make minor modifications to the questionnaire. However, to allow comparison across countries, the format of the original questionnaire was strictly maintained. It was agreed by all members that country teams maintain a high level of standardization in terms of question order, question wording, response options, reference periods, and layout and formal design in order to minimize measurement bias across countries. It was also reinforced that cultural patterns and language specifics might require functional rather than formal equivalents and country teams could design national extensions to the questionnaire.

The targeted number of respondents set for each country was 800. In Malaysia, the questionnaire was sent to all 20 public institutions and to ensure representativeness across academic ranks and disciplines, careful selection of respondents was made using the cluster sampling method. The identification of samples for each institution was made by the appointed enumerators. They were briefed through personal interaction or telephone call. Based on the response rate in earlier studies involving academics, it was anticipated that the return would be very low, thus 3000 questionnaires were hand delivered or posted to the enumerators appointed in each institution. Responses were received from 18 universities (90%). Several reminders were made before the team decided to end the data collection as the number of respondents met the target of 800. However, after the data cleaning process, a few responses had to be excluded.

Findings and discussion

Background of respondents

A majority of the respondents were male (60.7%) and married (86.8%). The team managed to get adequate proportion of responses across the three academic ranks; professors (14%), associate professor (21.8%), and lecturers (64.2%). This somewhat reflects the proportion of the three academic ranks in Malaysian public higher education. According to the Malaysian Higher Education Statistics 2011 (MOHE, 2012), the composition according to ranks of the 29,198 academics serving in universities were 6.86% professors and 16.48% associate professors. The responses also cover a fair distribution across types of universities (Table 2).

The classification used for the public higher institutions is based on the

classification determined by the Ministry of Higher Education (2013): which are research universities, focused universities and also comprehensive universities. Research universities are ones that have surpassed the Malaysian benchmark for performance and are very research inclined. A comprehensive university places equal emphasis on teaching and research and the comprehensiveness reflect the wide range of academic programs that they offer. In contrast, a focused university places emphasis on only specific disciplines. For example, the Universiti Utara Malaysia is a management university, the Universiti Pendidikan Sultan Idris is an education university, while the Universiti Teknikal Melaka is an engineering university. Of the 20 public universities in Malaysia, five are classified as research universities, four are comprehensive, and 12 are focused universities. The 12 focused universities include a network of four technical universities which call themselves the Malaysian Technical University Network (MTUN) (MOHE, 2013).

Table 2. Distribution of respondents

Background Information	Categories	Frequency	Percentage
Gender	Male	476	60.7
	Female	308	39.3
Marital Status	Married/ Partner	676	86.8
	Single	103	13.2
Academic Rank	Professor	106	14.0
	Associate Professor	165	21.8
	Lecturer/ Assistant Professor	487	64.2
Types of Institutions	Research	320	40.0
	Comprehensive	278	34.8
	Technical	202	25.2

Academics' views on prospects of the academic profession

To provide a general picture of how the respondents view the academic profession in Malaysia at the present time, they were asked to indicate their degree of agreement on whether it is a poor time for any young person to begin an academic career. The majority of the respondents had a stronger tendency to disagree rather than to agree, which shows their positive view of the academic career.

Academics of technical universities tend to have greater disagreement to the negative item (mean=3.87, SD=1.01) followed by research universities (mean

=3.74, SD=1.15) and comprehensive universities (mean=3.55, SD=1.14) (Table 3). However, based on a 1 to 5 scale, the mean is slightly towards disagreement with the statement. In other words, many feel that it is good time to begin an academic career.

Table 3. Respondents' agreement with the item "It is a poor time for any young person to begin an academic career" by types of universities

Degree of Agreement	Research				Comprehensive				Technical			
	n	%	Mean	SD	n	%	Mean	SD	n	%	Mean	SD
1	4	1.3			12	4.4			2	1.0		
2	59	18.6			36	13.3			10	5.2		
3	62	19.5	3.74	1.15	85	31.4	3.55	1.14	70	36.5	3.87	1.01
4	85	26.7			68	25.1			39	20.3		
5	108	33.9			70	25.8			71	34.0		

1 for "strongly agree" and 5 for "strongly disagree"

An analysis between the types of universities reveals that academics of technical universities may feel that it is a good time to begin an academic career because technical universities are gaining better opportunities for research grants. Their limited offering of degree programs and smaller number of student intake may give them more opportunities to concentrate on other academic activities. The least disagreement to this item is by those from the comprehensive universities, which may have been influenced by their heavier burden of teaching due to their larger student population. Those from research universities may feel more tension due to greater expectation on their research performance while having greater supervision work load.

In line with the above statement, the respondents were also asked their agreement with the negative item "If I had to do over again, I would not become an academic". The same trend was observed. The highest disagreement was from respondents of technical universities (mean=3.93, SD=1.23), followed by research universities (mean=3.82, SD=.96) and comprehensive universities (mean=3.66, SD=1.22) (Table 4). These findings confirmed the earlier view on whether it is a poor time for one to start an academic career. It can be concluded that the Malaysian academics feel strongly that the academic career has prospects.

The same trend was observed in response to the negative item "My job is a source of considerable personal strain". The multiple tasks and excessive teaching load, research, and services may be the cause of considerable personal

strain. As can be seen in Table 5, the highest disagreement is by academics of technical universities (mean=3.13, SD=.87), followed by research universities (mean=2.99, SD=.96), and comprehensive universities (mean=3.09, SD=.96) which can all be considered as moderate. It seems that in general, academics feel that the job is just moderately strenuous.

Table 4. Respondents' agreement with the item "If I had to do over again, I would not become an academic" by types of universities

Degree of Agreement	Research				Comprehensive				Technical			
	n	%	Mean	SD	n	%	Mean	SD	n	%	Mean	SD
1	14	4.4			16	5.9			12	6.2		
2	40	12.6			29	10.6			13	6.7		
3	60	18.9	3.82	.96	82	30.0	3.66	1.22	42	21.6	3.93	1.23
4	79	24.8			50	18.3			36	18.6		
5	125	39.3			96	35.2			91	46.9		

1 for "strongly agree" and 5 for "strongly disagree"

Table 5. Respondents' agreement with the item "My job is a source of considerable personal strain" by types of universities

Research			Comprehensive			Technical		
n	Mean	SD	n	Mean	SD	n	Mean	SD
318	2.99	.96	272	3.09	.96	189	3.13	.87

1 for "strongly agree" and 5 for "strongly disagree"

Job situations

Academics were also asked to indicate their views on overall working conditions in higher institution, whether it has very much improved or deteriorated since they started their academic career. The mean ranging from 2.25 to 2.34 shows that academics feel that working conditions has improved since they started their career although it has not improved very much (Table 6).

It is worth analyzing the findings based on academic ranks. As shown in Table 7, majority of the respondents were males. However, looking at the female composition, the proportion of female professors was only 20.8%, associate professors 30.4%, and lecturers 43.9%. This is reflective of the composition of female academics advancing in academic rank. The proportion of female professors is much less than the proportions in the other two lower ranks. According to the Ministry of Education Malaysia (2013) statistics, in

2012, 57.8% of lecturers were female, but the percentage decreases to 44.3% for associate professors and 28.8% for professors.

Table 8 displays the number of children living at home. In most Malaysian families, children will stay at home until the age of 18 when they started attending college. The majority of lecturers (77.1%), associate lecturers (76.8%), and professors (70.5%) still have children living at home and 42.8% of associate professors have more than three children at home.

Table 6. Respondents' views on the item "Since you started your career, working condition in higher education improved or declined" by types of universities

Response	Research				Comprehensive				Technical			
	n	%	Mean	SD	n	%	Mean	SD	n	%	Mean	SD
1	39	12.2			69	24.9			27	13.6		
2	169	53.0			100	36.1			99	50.0		
3	89	27.9	2.32	.85	85	30.7	2.25	.98	56	28.3	2.34	.89
4	13	4.1			16	5.8			9	4.6		
5	9	2.8			7	2.5			7	3.5		

1 for "very much improved" and 5 for "very much deteriorated"

Table 7. Proportion of males and females across academic ranks

Item	Professor		Associate Professor		Lecturer	
	n	%	n	%	n	%
Male	84	79.2	112	69.6	264	56.1
Female	22	20.8	49	30.4	207	43.9

Table 8. Number of children living at home across academic ranks

Item	Professor		Associate Professor		Lecturer	
	n	%	n	%	n	%
Yes, 1 child	28	26.7	23	14.5	80	17.9
Yes, 2 children	17	16.2	31	19.5	106	23.8
Yes, 3 or more children	29	27.6	68	42.8	158	35.4
No	31	29.5	37	23.2	102	22.9

Problems of getting live in maids and insecurity related to leaving children at day care centers causes most parents to have a bigger commitment to rearing children which includes picking them up from school during lunch time, transporting them to baby sitters or day care, picking them back by 5 p.m. or 6

p.m., preparing dinner and doing other daily chores. These are among the factors that inhibit academics especially young female academics in accelerating through their career paths.

The respondents were asked to rate their overall satisfaction with their current job. Professors seem to be the most satisfied group (mean=1.80, SD=.79), followed by associate professors (mean=2.14, SD=.97), and lecturers (mean=2.21, SD=.75) (Table 9). The satisfaction may be associated with the pay and support system. Being more senior in the profession, professors and associate professors may gain better support from management and support staff, which does make their job more manageable and satisfying. Although the pay is not comparable to those of developed nation, it allows lecturers to lead a rather comfortable life. With the pension scheme and public hospital services for civil servants, they need not worry about life after retirement.

In the survey, a majority of the respondents are permanent staff (Table 10). In the Malaysian case, contract officers may apply only to expatriates or retired academics. The mandatory retirement age for civil servants is 60. If their service is still needed, they may be hired on year-to-year contract basis or for a certain duration such as three years and based on performance, their contract may be extended up to age 65.

Table 9. Respondents rating on overall satisfaction with current job

Response	Professor				Associate Professor				Lecturer			
	n	%	M	SD	n	%	M	SD	n	%	M	SD
1	41	38.7			38	23.4			76	15.9		
2	49	46.2			84	51.5			242	50.5		
3	12	11.3	1.80	.79	30	18.4	2.14	.97	149	31.1	2.21	.75
4	4	3.8			2	1.2			9	1.9		
5	0	0			9	5.5			3	0.6		

1 for “very high” and 5 for “very low”

Table 10. Terms of employment of respondents

Terms of Employment	Professor		Associate Professor		Lecturer	
	n	%	n	%	n	%
Permanently	79	74.5	136	82.4	436	90.8
Continuously Employed	14	13.2	14	8.5	24	5.0
Fixed-term Employment	13	12.3	15	9.1	20	4.2

The respondents were also asked to state whether they work for an additional employer or do additional remunerated work in the current academic year. In the Malaysian context, academics are not allowed to 'moonlight'. All work outside of their terms of work agreement must be approved by the immediate superior. Thus there may be hesitation to declare that they do work for an additional employer or do additional remunerated work.

Academics are encouraged to seek consultancy work. However, consultancy work must be reported to the university through establishments such as the Research Management Center or the University Business Center. The centers provide support, advice and provide legal protection to the consultants for a fee, usually ranging between 10 to 15% of the total consultation fees.

Working for another organization or institution can only be done on the basis of secondment. An academic can be seconded to another organization during their terms of employment but their salary will then be paid by the organization that they are currently servicing. As shown in Table 11, hardly 3% of professors or lecturers have other jobs or outside income. However, the associate professors seem to be more involved in jobs outside their expected duties. About 8.5% of associate professors are working for another research institution, and the same percentage are working for non-profit organizations (Table 11).

Table 11. Additional employer or additional remunerated work across academic ranks

	Professors (N = 106)		Associate Professors (N = 165)		Lecturers (N = 487)	
	n	%	n	%	n	%
No additional work	102	91.1	140	84.8	450	93.4
Work at another research institution	3	2.8	14	8.5	13	2.7
Work at business organization	2	1.7	7	4.2	2	.4
Work at non-profit organization	3	2.8	14	8.5	10	2.1
Self-employed	1	.9	1	.6	3	.6
Other	1	.9	0	0	4	.8

Practices in rewarding and recognizing performance of academics

In analyzing rewards and recognition, an analysis of those who evaluates teaching, research, and service work of academics may deem some light on their job situation and satisfaction. The respondents were allowed to choose more

than one choice of evaluators. For teaching, it was reported that across all academic ranks, students and department heads are the main evaluators of their teaching performance (Table 12). All universities require students to complete evaluation sheets at the end of a course and this is used as part of the evidence of the quality of teaching. Department are also the evaluators for their teaching performance for the yearly appraisal.

For research, it was reported that the main evaluators are the department heads and external reviewers (Table 13). In this context, the department heads may be the person to evaluate their research competence especially for promotion and yearly appraisal but external reviewers may be the evaluators of papers submitted for publication.

For service work, lecturers reported that the main evaluators are the department heads, peers, and senior administrative staff. However, for the associate professors, it is mainly done by senior administrative staff and department heads. In this regard, the senior administrative staff is the dean. For professors, it is done by department heads and external reviewers (Table 14).

The respondents were also asked how much do they expect that activities such as research, teaching, administrative work, and social services are emphasized in the promotion exercise. They were to indicate 'not emphasized' or 'strongly emphasized'. In the next question, they were asked which of the activities are actually emphasized.

Professors expect that teaching should be more emphasized (mean=4.05, SD=.87); however, in actual practice they perceived that it is not as strongly emphasized (mean=3.63, SD=.89) (Table 15). In Malaysian universities such as Universiti Putra Malaysia, the weight given for teaching in promotion decreases as one advances in academic rank. In other words, in lower rank positions (senior lecturers and associate professors), teaching contributes more to their promotion as compared to the criteria set for promotion to full professor. In terms of expectation and their perception of actual practices as shown in Table 15, similar patterns can be seen for the associate professors and lecturers.

In terms of emphasis on research, professors and associate professors expectations almost match actual practice. As compared to Table 15, academics are aware that research is more emphasized in promotion as compared to teaching. However, for lecturers, their expectations (mean=4.04, SD=.99) are much higher than actual practice (mean=3.75, SD=1.05) (Table 16). As discussed above, the weight of research is much lesser for lecturers as compared to higher academic ranks.

Table 12. Evaluators of teaching

Evaluators	Professor (N = 106)		Associate Professor (N=165)		Lecturer (N = 487)	
	n	%	n	%	n	%
Peers	33	31.1	71	43.0	180	37.0
Department head	81	76.4	117	70.9	298	61.2
Members of other departments	19	17.9	23	13.9	109	22.4
Senior administrative staff	35	33.0	31	18.8	141	29.0
Own students	87	82.0	129	78.2	370	76.0
External reviewers	54	50.9	51	30.9	142	29.2
Yourself	71	67.0	89	53.9	276	56.7
No one	4	3.8	7	4.2	12	2.5

Table 13. Evaluators of research

Evaluators	Professor (N = 106)		Associate Professor (N = 165)		Lecturer (N = 487)	
	n	%	n	%	n	%
Peers	25	23.6	51	30.9	179	36.8
Department head	68	64.2	112	67.9	267	54.8
Members of other departments	24	22.6	60	36.4	161	33.1
Senior administrative staff	41	38.7	58	35.2	159	32.6
Own students	13	12.3	14	8.5	43	8.8
External reviewers	63	59.4	97	58.8	189	38.8
Yourself	64	60.4	83	50.3	268	55.0
No one	1	.9	6	3.6	19	3.9

Table 14. Evaluators of service

Evaluators	Professor (N = 106)		Associate Professor (N = 165)		Lecturer (N = 487)	
	n	%	n	%	n	%
Peers	18	17.0	52	31.5	190	39.0
Department head	69	65.1	85	51.5	262	53.8
Members of other departments	19	17.9	54	32.7	98	20.1
Senior administrative staff	35	33.0	90	54.5	176	36.1
Own students	26	24.5	35	21.2	70	14.4
External reviewers	48	45.3	22	13.3	77	15.8
Yourself	54	50.9	85	51.5	245	50.3
No one	6	5.7	14	8.5	19	3.9

Table 15. Expected and actual practice of emphasis on teaching in promotion exercise

	Professor				Associate Professor				Lecturer			
	n	%	M	SD	n	%	M	SD	n	%	M	SD
Expectation												
1	2	1.9			1	.6			4	.8		
2	2	1.9			9	5.5			12	2.5		
3	19	18.3	4.05	.87	26	15.9	4.20	.94	116	24.4	3.99	.86
4	47	45.2			49	29.9			195	41.0		
5	34	32.7			79	48.1			149	31.3		
Actual												
1	2	1.9			2	1.2			11	2.3		
2	2	1.9			11	6.7			13	2.8		
3	49	47.6	3.63	.89	23	14.0	4.10	.96	155	32.9	3.77	.91
4	29	28.2			61	37.2			186	39.5		
5	21	20.4			67	40.9			106	22.5		

1 for 'not emphasized' and 5 for 'strongly emphasized'

Table 16. Expected and actual practice of emphasis on research in promotion exercise

	Professor				Associate Professor				Lecturer			
	n	%	M	SD	n	%	M	SD	n	%	M	SD
Expectation												
1	2	1.9			0	0			7	1.5		
2	4	3.8			10	6.1			30	6.3		
3	12	11.5	4.40	.97	18	11.0	4.34	.90	91	19.2	4.04	.99
4	18	17.3			42	25.6			154	32.4		
5	68	65.4			94	57.3			193	40.6		
Actual												
1	2	1.9			1	.6			18	3.8		
2	3	2.9			13	7.9			32	6.8		
3	21	20.4	4.20	.99	21	12.8	4.27	1.00	131	27.8	3.75	1.05
4	23	22.3			34	20.7			160	34.0		
5	54	52.5			95	58.0			130	27.6		

1 for 'not emphasized' and 5 for 'strongly emphasized'

Table 17. Expected and actual practice of emphasis on administration and management in promotion exercise

	Professor				Associate Professor				Lecturer			
	n	%	M	SD	n	%	M	SD	n	%	M	SD
Expectation												
1	2	1.9			2	1.2			13	2.7		
2	9	8.7			14	8.6			42	8.8		
3	54	51.9	3.36	.86	85	52.1	3.40	.87	176	37.0	3.53	.95
4	28	26.9			41	25.2			172	36.1		
5	11	10.6			21	12.9			73	15.4		
Actual												
1	2	1.9			1	.6			15	3.2		
2	10	9.7			11	6.8			33	7.0		
3	54	52.4	3.27	.78	63	38.9	3.60	.84	198	42.1	3.45	.87
4	32	31.1			64	39.5			172	36.6		
5	5	4.9			23	14.2			52	11.1		

1 for 'not emphasized' and 5 for 'strongly emphasized'

Across all, academics expect and know that the weight given for administration and management duties is much lesser than teaching or research (Table 17). It does not get higher as one moves up the academic rank. However, associate professors indicate that higher weight of such duties is exercised in actual practice for promotion. In promotion to associate professor, some involvement such as being department head or program coordinator will give some advantage in the application. But for promotion to professor, contributions in terms of administration and management will definitely be an added value to the application.

The respondents were also asked about the emphasis on social services for promotion. The response is just moderate, similar to the pattern shown for administrative and management duties. This is true in the promotion exercise. Of utmost importance is research, followed by teaching, administration and management, and social services.

Summary

In general, Malaysian academics find that the academic profession is very promising and has good prospects. Academics, especially those from technical universities, feel that it is a good time to begin an academic career, and that the

profession is just moderately strenuous. Research and study programs of Malaysian technical universities are mainly engineering related. Most of the engineers who joined academia are those who have a passion for teaching and research, although there is a small number who may have joined academia after losing hope of getting a job as a practicing engineer. Those in technical fields have more advantage in obtaining research funds such as the Science Fund, the Techno Fund, the Inno Fund, and the Industry Research and Development Grant Scheme. Disciplines in research and comprehensive universities include humanities and social sciences. There are fewer opportunities for those in these disciplines to land a huge research grant. With the larger student population to whom they have to cater, it may have influenced the views of academics in research and comprehensive universities on the academic career. On top of that, those in the research universities also have greater supervision load due to the larger graduate student population.

The study had also shown that academics feel that the working conditions have improved since they started their career amidst the financial constraints faced by all universities. However, it has not improved to the level of 'very much improved'. The improved working condition may have contributed to their positive views of the academic profession.

The study also revealed that generally academics are satisfied with their current job and that professors seem to be the most satisfied group. This strengthened earlier findings by Enders and Teichler (1997) through their examination of several countries that academics of the middle ranks were less satisfied, and lesser still are those in the lower ranks. Jaschik (2009) reported similar findings based on the preliminary results of a national survey of professors by the Collaborative on Academic Careers in Higher Education (COACHE) at Harvard University that provided evidence that in most measures associate professors have lower job satisfaction than assistant and full professors.

Malaysian education statistics and data from this study showed that female lecturers tend to lag behind in terms of promotion. At the lecturer level, the proportion of female academics is large, but it gets smaller at the profess level. As shown in the education statistics (MOHE, 2013), less than 30% of professors are females. Jaschik (2009) had also compared the time taken by male and female academics to be promoted. It was found that for the English and Foreign Language Departments, the average time for women prior to promotion as associate professor is 8.2 years, compared to 6.6 years for men. Jaschik (2009) reported that "many women in academe say that departments are insufficiently supportive of those who must balance career and family

obligations – and tend to reward those without child care duties/ continued unequal division of labor in child care". As in the Malaysian case, the set back of females in getting their promotion much earlier could be contributed to their family commitment especially with the difficulty of hiring live-in-maids and the lack of good day care centers. Day care centers that operate according to normal office hours may not solve the problem entirely because as academics, they may have to work long hours, work outstation, or work weekends. Many working women in Malaysia have more than three children, thus the commitment of bringing up the children may slow down their move up the career ladder.

The study had also revealed that not many Malaysians have additional employers or do additional remunerated work. The system does not allow for one to 'moonlight'. They are allowed to take consultation work, but they will have to contribute part of their consultation fees to the university. They are also allowed to be on secondment to another higher institution, to industry, or to the ministry. As an example, two of the professors from the Universiti Putra Malaysia are serving as vice chancellors in two other public universities. The Malaysian Director General of Higher Education is also a university professor, on secondment to the ministry for three years, and the service may be extended further.

In terms of evaluators for promotion, the study showed that the department heads are the key person in assessing academics performance in all aspects: research, teaching, administrative and management duties, and social services. The assessment is also used for yearly appraisal and promotion. Students' views are often being used to indicate teaching performance. In some cases, the deans are also evaluators of research.

The weight given to teaching in promotion or in yearly assessment decreases as one moves up the academic rank, and the reverse is evident for research. Professors are expected to be leaders of research, and thus, they may concentrate lesser on teaching. However, it does not imply that the professors, especially those who are not taking administrative positions, have smaller teaching loads, but it indicates how much their teaching contributes and considered in promotion or in yearly assessment.

Across all ranks, academics do expect and do know that the weight for administration and management duties is much less than teaching or research. Contributions in terms of administration and management will definitely be an added value to the application for promotion, especially associate professor to professor. Of utmost importance is research, followed by teaching,

administration and management, and social services.

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Academic Career Development in Vietnam

Pham Thanh Nghi*

Introduction

The academic profession emerged in Vietnam at the beginning of the 20th century with the establishment of the higher education system. Although the system has gone through about a century, it is still an immature one. The first colleges were established in 1918 under the French colony, and some colleges then were merged to form the University of Indochina in Hanoi in 1939. The system of higher education was divided into the two systems: higher education in the North developed on the Soviet model and higher education in the South developed on the American model. In 1975, all colleges and universities were united into a national system based on the model of Soviet Union. Responding to the socio-economic innovation in 1986, the system of higher education in Vietnam changed its goals and regulations to serve the diversified economic sectors; to mobilize the financial resources; and to develop its size and structure. The two national and three regional multi-disciplinary universities were established. Each province and ministry is trying to establish at least one university under its supervision. The private sector of higher education has more space to develop. As a result, the system of higher education in Vietnam has reached over 400 institutions.

The student/faculty ratio increased from 8.73 in the 1980/1981 academic year to 29.8 in the 2010/2011 academic year. The higher education system has become a significant service sector, and working in the academic area has become an interesting profession for Vietnamese young people. At the same time the academic career ladder seems uneven for many young people who do

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not work hard and lack perseverance and passion. It is necessary to emphasize a few characteristics of the academic career in Vietnam. As compared to counterparts in mature systems of higher education, academics working in Vietnamese higher education institutions spend most of their time on teaching. Research activities have recently been emphasized. And occupying an administrative position is considered as an achievement for them. The rules for academic promotion are defined by the state and heavily based on seniority. There is a new pathway of promotion based on research and scholarship. Female and ethnic academics are given priority in promotion, but due to their shortage, the proportion of female, especially, ethnic high-ranking academics is still small. This paper examines academic career development at a time of higher education transition from bureaucratic control to a market mechanism. In this analysis academic career development is considered from the perspective of how academics enhance their performance through research, teaching, and administration and in what pathway, their career is progressing to match with university and society's goals.

1. Teaching, research, and administration

a. Functions of teaching, research, and administration

Johnston and his colleagues (2012) have provided some essential definitions of scholarship, teaching, research, and management.

> *Scholarship* is recognized as an essential pre-requisite for high quality teaching and basic research and can be defined as serious, formal activity to ensure that an individual remains up-to-date with their particular specialism. All academic staff are expected to maintain a close and professional understanding of current developments in scholarship in their subjects. Their teaching should reflect, in a careful, conscious and intellectually demanding manner, the latest development in their subject of study. An important aspect of scholarship is being able to position one's own discipline in the context of other relevant disciplines.
>
> *Teaching* includes any activity that contributes to student learning and the student experience, including design and delivery of courses, supervision of student projects and research, pastoral support, management and leadership, student recruitment, widening participation, professional updating, maintaining awareness and understanding of recent advances in knowledge of the relevant discipline.

> *Research* builds on scholarship. Through research an academic contributes to the development of their discipline, by original research leading to new knowledge, and/or by the application of research/new knowledge in novel and innovative ways. The amount of time allocated for research in the workload model for academic staff will vary, taking account of the quality of the research outputs and other research esteem factors e.g. research grant income.
>
> *Management and Leadership.* Progression in all pathways will depend on the member of staff taking on management and leadership responsibilities. The display of personal qualities associated with leadership and a willingness to take on and effectively discharge significant responsibilities for a function or area of activity, in any pathway, will strengthen a case for career advancement.

Higher education in developed countries encourages academics to commit to parity between research and teaching. In the teaching and research pathway there may be substantial variation in the proportion of time that academics devote to teaching, scholarship, research innovation, and other activities.

Being an academic employed by a higher education institution means fulfilling several functions such as teaching, research, management, and leadership. Most academic staff combine these functions, but many have roles that have a contractual commitment to a specific activity.

b. How these functions are distributed by law and regulations

As stated in the Higher Education Law (Vietnam National Assembly, 2012), academics have at least three functions: teaching, research, and administration. These three functions are defined in details in Ministry of Education and Training (MOET) regulations (MOET, 2008). Committed to the teaching function, academics are required to spend time on understanding educational goals and curricular; regulations on teaching; and assessment of student knowledge, attitudes, and skills. They are also required to develop teaching plans, course outlines, and teaching and learning materials, as well as teaching, supervising student learning, undertaking experiments, conducting seminars, performing projects, guiding students in practices, and graduation projects. Academics with Ph.D. degrees are required to supervise graduate students in writing thesis and dissertations. Completing the teaching function, academics are also required to prepare materials, textbooks, and references for courses they teach.

As researchers, academics are required to lead or participate in projects of research or technological application. At the base of research results, academics upgrade teaching and learning materials of their subjects. Academics are also required to participate in scientific seminars and conferences, and publish their research articles in the scientific journals in Vietnam and overseas. Committed to the research function, academics are required to participate in consultancy and technological transfer activities with partners both domestically and internationally.

As administrators, academics are required to participate in student enrollment activities, student learning, and research assessment. They are also required to lead teaching or research units as deans, department heads, or leaders of higher education institutions.

These functions are distributed differently to the three groups of academics: lecturers; senior lecturers/associate professors; and high-ranking lecturers/full professors (MOET, 2008).

(1) Tasks of lecturers

Lecturers are required to teach courses both at three year colleges and four year colleges and those who hold the Ph.D. degree are to teach special subjects or units at the master's level and supervise master's theses and Ph.D. dissertations. In term of research, lecturers are required to undertake research projects and technological transfer. They are also required to be head teachers of student classes and to do other administrative academic affairs.

(2) Tasks of senior lecturers / associate professors

Senior lecturers/associate professors are required to teach special units and subjects at four year colleges and supervise master's theses and Ph.D. dissertations. They are required to lead and participate in a group who prepares learning materials. This group is the major force supervising master's theses and Ph.D. dissertations at higher education institutions. In term of research, they are required to undertake research projects and technology transfer. They are also required to participate in academic and research management affairs.

(3) Tasks of high-ranking lecturers / full professors

Different from the two above groups, high-ranking lecturers/full professors lead the design and improvement of institutional goals, teaching plans, and curricula for all levels of training. They are required to provide training courses for other kinds of lecturers according to the programs of academic staff

development of the institution. These academics lead research activities, and the organization of seminars and conferences. They are also required to lead academic affairs, research, and academic staff management.

Table 1. Time requirement for academics

Functions	Lecturers	Senior lecturers/ associate professors	High-ranking lecturers/ full professors
Teaching	900	900	900
Research	500	600	700
Administration and other tasks	360	260	160

Time requirement for all these three groups of academic staff is presented in Table 1. It shows that more research time is distributed to senior and high-ranking lecturers.

These teaching hours are then transferred to equivalent hours based on the weighting of teaching subjects and other works. One hour of teaching at a large class accounts for 1.8 equivalent hours; one hour of teaching by foreign languages accounts for 2.0 equivalent hours; one day of guiding probation accounts for 1.2-2.0 equivalent hours; one hour of guiding subject practice or undertaking experiments accounts for 0.5-1.0 equivalent hour; supervision of one student graduation paper accounts for 12-15 equivalent hours; supervision of one master's thesis accounts for 20-25 equivalent hours; and supervision of a Ph.D. dissertation accounts for 45-50 equivalent hours.

Academics occupying an administrative position are required to teach at least a certain proportion of equivalent time requirement. Rectors and vice rectors are required to teach 15-20 percent of equivalent time requirement; deans and vice deans are required to teach 70-80 percent of equivalent time requirement; and heads of department are required to teach 80-85 percent of equivalent time requirement.

Research tasks are devoted to academics depending on their ability, research potential, and the research emphasis of the institution. Important and complex research tasks are devoted to highly-qualified and high-ranking academics, and these research tasks account for more equivalent time. Academics are required to publish at least one scientific article in journals where articles are assessed critically by reviewers or complete one research project funded by the institution.

The application of these rules varies from institution to institution depending on conditions. In case of a shortage of qualified academic staff, the rector of the university may assign more research tasks to highly-qualified academics and reduce their teaching workloads at the same time. For those who do not complete research tasks, as assessed, their research time is considered as teaching as compensation purposes.

c. How these functions are performed in practice

Based on the Regulations issued by MOET, as presented above, the rector of a university promulgates institutional regulations to assign concrete tasks to academics. Student enrollment expansion in the last two decades has led to heavy workloads for academics. In terms of the regulations, a lecturer is required to teach 280 equivalent hours, senior lecturer/associate professor – 320 equivalent hours and high ranking lecturer/full professor – 360 equivalent hours (Table 2), but in practice academics are asked to work many more hours for which they are compensated. Consequently, they have not much time left for research. However, a survey undertaken in October 2012 revealed that hours spent on teaching and research reported by respondents are fairly balanced (Table 3). Academics spend more time on each activity when classes are not in session. Vietnamese academics spend much more time on teaching per week, 34.3 hours (both in session and not in session), compared to 25 hours by Japanese and 26.8 hours by Taiwanese counterparts. Vietnamese academics also spend more time on teaching when classes are not in session. Regarding time spent on research activities, Japanese and Taiwanese academics spend more hours both when classes are in session and not in session. Japanese spend 46.3 hours on research per week, and Taiwanese spend 41.2 hours, while Vietnamese academics spend only 34.1 hours (Nghi, 2013, pp.173-174).

In choosing preferences “teaching and research”, academics clearly prefer teaching (Table 4). This situation is rooted in differentiation of functions given to higher education institutions in Vietnam. Teaching and research are separated. The primary function of higher education institutions is teaching; the research function is assigned to institutions traditionally organized separately from colleges and universities, while research and teaching graduate students are considered as two important functions of academics at a university.

Table 2. Equivalent teaching time requirement per year

Academic ranks	For academic teaching	For physical and defense education
High-ranking lecturers/full professors	360 hours	500 hours
Senior lecturers/associate professors	320 hours	460 hours
Lecturers	280 hours	420 hours

Table 3. Time spent by academics on teaching, research, service and administration

Activities	Hours per week when classes are in session	Hours per week when classes are not in session
Teaching	15.4	18.8
Research	14.2	19.7
Service	7.2	7.2
Administration	9.3	10.3
Other academic activities	8.3	9.5
Total	54.4	65.5

Table 4. Teaching and research preferences

	Frequency	Valid Percent
1. Primarily in teaching	187	23.8
2. In both, but prefer teaching	390	49.6
3. In both, but prefer research	183	23.3
4. Primarily in research	26	3.3
Total	786	100

The weakness of separating teaching and research has been addressed in recent years by the attempt to establish numerous research centers or institutes within universities. Responding to the questions "how much academics think that research and teaching activities are actually emphasized" and "how much they expect these activities to be emphasized", academics have mentioned an actual imbalance between teaching and research, and expected more balance (Table 5).

Table 5. Evaluation by academics on emphasis of teaching and research

	Actually emphasized (1) on scale 1-5	Expected to be emphasized (2) on scale 1-5	Relations between (1) and (2)
Research	3.81	4.14	0.47**
Teaching	4.17	4.33	0.60**
Administration	3.65	3.62	0.27**
Social service	3.35	3.54	0.35**

** Correlation is significant at the 0.01 level (2-tailed)

According to academics, teaching is currently more emphasized than research, therefore, they expect the university to place stronger focus on research. The relation between actual and expected emphasis on research (with r =.47) is less strong than actual and expected teaching (with r =.60). At the same time, the relation between actual teaching and actual research (with r =.710) is less strong than expected teaching and expected research (with r =.725), despite that these two relations are strong.

Due to limited funding, each research project gets a modest funding and that discourages academics from committing to research activities. There are several levels of funding for research projects in Vietnam. At the institutional project level, they usually get limited funding from the institution that is sufficient to undertake the first stage of basic research to define research problems, or to review literature for further study. At the ministerial project level, academics are given the task to do independent research in their discipline, or to solve a particular practical problem that is significant to the professional or practical application. At the national project level, academics have a chance to undertake a significantly important project for their discipline or for practical application and they get a relatively large funding to undertake a research project. Most academics have a chance to work with research projects at the first and second levels of funding which have little attractiveness.

Due to the low proportion of doctorates in Vietnamese universities and the rank structure of the academic profession, most academics in Vietnam are not actively involved in research, measured by the number of articles and publications produced. The table 6 provides data on research output in 2005 for public, semi-public, and non-public institutions. Public institutions have the best record with over 17,000 publications, but only 0.03% of these articles were published in international journals. The average publications per academic was low (0.45 publications per academic).

The output of research and professional activities taken from our survey (Table 7) is more positive compared to the statistical data from MOET. The

average number of articles published per academic in books or journals is 1.70 in three years or 0.56 per year compared to 0.45 per year in the MOET data.

Table 6. Research output for higher education in Vietnam in 2005

Ownership	Type of management	Number of published articles	Percentage in international journal	Average publications per academic
Public	Total	17,088	0.03	0.45
	National	146	0	0.36
	Regional	292	0.09	0.09
	Other	15,941	0.02	0.80
	Local	30	16	0.03
	Colleges	726	28	0.07
Semi-public		72	0	0.07
Non-public		38	0	0.01
Total		1717,198	0.03	0.39

Source: The World Bank (2008: 37-38) (data are drawn from the MOET Survey 2005)

Table 7. Output of research and professional activities

	Items	Number of publications per academic in three years
1	Scholarly books authored, co-authored	2.99
2	Scholarly books edited, co-edited	0.59
3	Articles published in an academic book or journal	1.70
4	Research report/monograph written for a funded project	0.52
5	Paper presented at a scholarly conference	1.25
6	Professional article written for a newspaper or magazine	0.73
7	Patent secured on a process or invention	0.02
8	Computer program written for public use	0.04
9	Artistic work performed or exhibited	0.02
10	Video or film produced	0.09
11	Others	0.02

In sum, academics in Vietnam place stronger emphasis on teaching compared to research and administration. This situation may be caused by the overwhelming teaching workload, and less funding for research activities and less weight given research for promotion. Making clear to what extent it is true requires analysis in the next section.

2. Academic promotion

The career ladder within a university consists of four steps: assistant lecturer, lecturer, senior lecturer/associate professor, and high-ranking lecturers/full professor; in a research institute they are likewise four steps: assistant researcher, researcher, senior researcher, and high-ranking researcher. Promotion from one step to another requires several criteria, some of which are related to research and teaching achievements, others are related to seniority. This section describes how an academic is promoted on the academic professional ladder and through what pathway.

a. Traditional pathway of academic promotion

Entering the academic profession and attaining a position as a lecturer, academics can choose one of two pathways to advance; he or she can get the title senior lecturer and then high-ranking lecturer, or he or she can achieve the title associate professor and then full professor. The first pathway is called "traditional pathway" and the second is "scholarship and research pathway". The former emphasizes seniority more, and qualifications and achievements in teaching and research much less. The latter requires minimum seniority, and more scholarship and research achievement. This section analyzes the traditional pathway of academic promotion.

Before the Law of Higher Education was passed in 2012, one who graduated from a higher education institution with a bachelor's degree could be recruited as a lecturer after one year of probation. At present, to be promoted as a lecturer, an academic must have a master's degree of appropriate specialization. In addition, one is required to have three certifications: level B[1] foreign language proficiency; level B information technology; and middle level[2] political theory and public administration. The criteria for promotion to senior lecturer include holding a master degree of appropriate specialization, and three certifications: level C[3] foreign language proficiency; level C information technology; and middle level political theory and public administration. He or she must also demonstrate the ability to develop training curricula; teaching plans and materials; and completion of one research project at the institutional

[1] Certification of level B means the intermediate level of proficiency.
[2] Middle level means the intermediate level of knowledge and understanding.
[3] Certification of level C means the advanced level of proficiency.

level. To be promoted to senior lecturer, one is required to have at least 7 years of work experience as a lecturer. The requirement for high-raking lecturer includes the Ph.D. degree, at least one scientific project or creative work already successfully applied into practice, and certification of high level[4] political theory and public administration. The promotion requires at least 7 years of work experience as a senior lecturer.

During the time required for each step of one's academic career, the lecturer must collect required certificates and academic degree accordingly. This pathway does not require much research achievement and significant contribution to the training goals of higher education institutions. Practically, every academic can get to the level of senior lecturer without considerable efforts.

b. Scholarship and research pathway of academic promotion

If the first pathway of academic promotion relies heavily on seniority, the scholarship and research pathway is based on one's research and teaching achievements made by the academics. Since 1975, five decrees have been promulgated by the Prime Minister. In the first three decrees, the titles of associate and full professor were recognized as research titles and in the two last decrees, the title was recognized as a teaching one. The recognition procedure for these titles has become more completed, detailed and scientifically based. The last decree, promulgated in 2008, defines in detail not only the criteria, but also organization, activities of councils, and procedures of assessment and recognition.

In terms of organization, there are three levels of councils involved in assessment of one's file: the council for the professor title at the institutional level, the council for the professor title at the disciplinary or inter-disciplinary level, and the State Council for Professor Title. The procedure of assessment starts from the institutional council and the applicant file will be passed to the inter-disciplinary council and then to the State Council for the Professor Title (MOET, 2009a, 2009b).

Applicants are required to meet several criteria defined by the Regulations issued by MOET (2009a, 2009b). They are required to have a total of six years of teaching, and three recent years must be continuous. If one has less than six years of teaching, he or she is required to have doubled values of research and

[4] High level means the advanced level of knowledge and understanding.

publications. In addition, an applicant for associate professor is required to supervise successfully two master's theses, while the applicant for full professor is required to supervise successfully two Ph.D. dissertations. Applicants are also required to be proficient in one of five foreign languages: English, French, German, Russian, or Chinese for their professional activities and communicate successfully in English.

Publications and research results achieved by the applicants are assessed based on the equivalent values, and the rules of this assessment are established by MOET (2009b). For example, a scientific article published in a prestigious journal counts for a maximum of 1.0 valued point and a book published based on comprehensive research by a prestigious publisher counts for a maximum of 2.0 valued points. Research at the institutional level that is completed and has been assessed by a committee can count for 0.25 valued points. Completed research at the ministerial level counts for 0.5 valued points and at the state level counts for 1.0 valued point. Applicants for associate professor are required to get at least 6 valued points while full professor applicants are required to get at least 12 valued points. For applicants who work in research institutions or who take responsibility as visiting lecturers, the research and publication criteria are nearly doubled in valued points: 10 valued points for associate professor and 20 valued points for full professor. Practically, the applicants should get doubled points for scientific publication and research results to ensure sufficient votes of council members. (Two thirds vote from the institutional council, three fourths vote from the inter-disciplinary council, and two thirds vote from the State Council for the Professor Title.)

After the State Council members have approved a file, the Chairman of the Council signs the certificate to attest that the applicant meets the criteria of the title of associate or full professor. The rector of a university then signs a decision to appoint the applicant to the position of associate or full professor.

Since 1976, 10,453 academics have been promoted, among them 1,569 professors and 8,884 associate professors (State Council for Professor Title, 2013). The distribution of high-ranking academics by territory is not rational: 73 percent of associate and full professors promoted during 2009-2013 work at universities in the Hanoi area; 11 percent in Ho Chi Minh City area; and the rest, only 16 percent in the other areas of the country.

The proportion of female associate and full professors is low. In 2013, among 57 newly-appointed professors and 514 associate professors, there are only 3 female professors, accounting for 5.6 percent, and 116 female associate professors, accounting for 22.6 percent. There is a commitment to increase the

female ratio among teaching and research academics: the number of female academics increases steadily and proportion of female academics promoted as associate professor among total high-ranking academics increases accordingly.

The proportion of ethnic origin high-ranking academics is even lower. In 2013, there are only six ethnic associate professors: two of Chinese ethnic origin, three of Tay ethnic origin, and one of Thai ethnic origin. The situation of ethnic minority academics is more difficult. Since ethnic people in Vietnam usually live in remote and mountainous areas, the opportunity for them to enter colleges and universities is small, and consequently, the proportion of ethnic origin academics among the total number is very modest. This explains why minority ethnic high-ranking academics are uncommon.

c. Academic satisfaction

In the survey undertaken in October 2012, most academics are satisfied with their career: 62.1% demonstrated high and very high levels of satisfaction, only 4.4% expressed unsatisfactory feelings (Table 8).

Table 8. Overall satisfactions with the academic profession

	Frequency	Valid Percent
1 – Very high	127	16.2
2	361	45.9
3	246	33.6
4	28	3.6
5 – Very low	6	0.8
Total of academics responded	786	100

This high level of satisfactory attitude towards academic profession could be explained by the prestige of teaching and learning activities in Vietnam. Moreover, at present, academics working at colleges and universities have above average income in the society. Academics enjoy their professional activities and, at the same time, they are able to cover their living expenses.

Conclusion

Commitment to teaching, research, and administration is required for academics to develop their knowledge and get appropriate academic degrees. Academics are highly valued for achieving the highest research degree and a

teaching position such as associate professor or full professor. Academics also have the possibility of being promoted into administrative positions within and outside the university. Academics are considered most successful when they successfully occupy an administrative position. At first, academic career development in Vietnam follows the traditional pathway, based on political and administrative values, but recently this process has been becoming more internationalized, and research and teaching achievements become the most important criteria for promotion. At present, the academic career ladder in Vietnam may have features different than in other countries in the region. This can be caused by levels of development and difference in cultural and political characteristics.

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The Self-contained Academic Profession in Japan, a Matured Country

Akiyoshi Yonezawa*

Introduction

Formation and development of the academic profession is one of the practically important topics in Asia. In Asia, many countries started their history as decolonization, and faced difficulties in forming first generation academics after independence (Kim, 2001). After that, these countries have experienced a rapid expansion of higher education that has demanded substantial increases in the academic profession. Japan is an exceptional Asian country that took the position of a colonizer. Reflecting the history of its modern higher education from the latter half of 19th century, however, Japan at the beginning also experienced difficulty in the formation of its academic profession.

This research examines the self-contained profile of the academic profession of Japanese universities from a comparative point of view. Firstly, it briefly overviews the historical background of the Japanese academic profession, and identifies its structural profile of its self-contained formation. Secondly, the complex patterns of academic mobility based on the framework developed by Kim and Locke (2010) are examined, and the data for Japan are presented as an example. Thirdly, international comparisons in representative patterns in the science, technology, engineering, and mathematics (STEM) fields are made. In conclusion, the research reveals a contradictory relationship between gaining international profiles in the academic profession and the capacity of fostering next generation academics.

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Historical background

The history of Japanese modern higher education began in the mid-19th century when Japan opened its trade relationship with Western countries adding to the traditional and limited trade with the Netherlands. Japan invited experts from North America and Europe to get advice on the formation of the first generation universities and higher education institutions, including the University of Tokyo. The Japanese national government and other local authorities also sent Japanese youth to study abroad. Then, foreign experts who were hired as first generation university teachers were replaced by those Japanese who came back after gaining experience in the Western world. By the end of 19th century, Japan established a system to foster next generation researchers at its own flagship universities and higher education institutions. By the end of World War II, Japan established seven "imperial" universities (national comprehensive universities with a research function), such as Tokyo Institute of Technology, Hitotsubashi University, and private universities like Waseda and Keio. After World War II, the number of universities drastically increased, first through education reform under the strong influence of American experts, and then from the 1960s through the mushrooming establishment and expansion of private universities. However, the universities that can foster next generation researchers have been rather limited as a number, and the alumni of the above-mentioned, prestigious universities have dominated the academic labor market in Japan (Fujimura, 2005) as seen in table 1.

This phenomenon has been discussed as an issue of "inbreeding". In Japanese literature it has been defined as the faculty members whose affiliation is the same as the university from which they graduated. *Kojunsha* published the list of such faculty members at all universities (name, age, and university of final degree) annually from 1954 to 2006. Then, the Hiroshima University group led by Shimbori, Arimoto, and Yamanoi analyzed academic mobility by developing the database. Yamanoi (1990) conducted a full-scale analysis of academic mobility in Japan, and demonstrated the existence of a strong influence of university networks in academic mobility among universities. The mechanism of inbreeding is not only seen among the top universities that produce competitive researchers, but more widely as the general tendency of Japanese universities to employ their own graduates in the first junior job status.

Inbreeding is much more apparent among the top research universities. Traditional chair and *Kyojukai* (the professoriate) systems that show a preference for the reproduction of academic culture through generations are typically found

among the top universities (Ogawa, 2002; Yonezawa, 2014). The dominant role of academic bosses in recruitment was also observed among non-(doctoral) degree granting universities (*i.e.* colonies) (Cummings & Amano, 1977). Inbreeding was also seen as new universities undertook actions to raise their prestige (Ushiogi, 2009). Iwata (2011) said it took 14 years on average to produce the first professor from alumni; after 25 years, around 60% of the newly-appointed professors in imperial universities before World War II were from their own alumni.

Table 1. Share of graduates from the academic labor market in Japan (%)

	1961	1981	2001
The University of Tokyo	24.8	15.4	11.4
Kyoto University	13.4	9.3	7.6
Tohoku University	5.5	4.8	4
Tsukuba (Tokyo Normal) University	5	4.6	4.1
Kyushu University	4.6	4.5	3.8
Hokkaido University	3.5	3.4	3.1
Waseda University	3	3.5	3.5
Osaka University	2.9	3.7	4.1
Hiroshima University	2.9	2.6	2.4
Keio University	2.1	2.2	2.5
Nagoya University	1.4	2.5	3
Tokyo Institute of Technology	1.4	1.6	1.8
(Non-Japanese universities)	2.7	2.8	6.9
	53.3	51.8	51.3

Modified by the Author based on Fujimura (2005, p.82)

Academic mobility as complex patterns

In contemporary arguments on the academic profession in relationship to research productivity, brain circulation is recognized as a positive factor for improving the quality of academic profession in an emerging country. Lee and Kim (2010) defined brain circulation as a somewhat extended definition of brain gain with an emphasis on human capital circulating across nations in the global market, benefiting both the sending and receiving nations, *i.e.* a two-way flow of skill, capital, and technology based on the argument of Saxenian (2002, 2005). Here, Korea could be regarded as a typically successful model that realized rapid

improvement of international recognition of its leading universities based on the strong international network through their massive amount of foreign trained academics.

Kim and Locke (2010) developed a typology of academic mobility, and identified Korea as a typical model of the domination of "study abroad" mobility, *i.e.* the movement of individuals out of a national higher education system to undertake doctoral training abroad before re-entering the system for post-doctoral study and/or employment. On the other hand, Japan could be identified as a typical pattern of a self-contained model, *i.e.* the internal movement of academic staff from study to employment within the national higher education system or even within a single institution.

On the other hand, Yonezawa, Ishida, and Horta (2013) analyzed the mobility pattern of foreign academics working at universities in Japan, and argued that a weak pattern of magnetic mobility can be observed within a dominant self-contained mobility pattern. Here, "magnetic" means the flow of academics to a national higher education system for study, work or both. Yonezawa *et.al.* identified two patterns of academic mobility, namely, foreign academics in the fields of science, technology, engineering, and mathematics (STEM) which are mostly trained at the graduate level in Japanese universities, and foreign language university teachers trained outside of Japan mostly concentrated on education only.

Here, we could see complex patterns of academic mobility. Kim and Locke (2010) simply showed conceptual patterns, but they did not examine the actual mobility pattern based on the data.

This article endeavors to identify the academic mobility pattern of respective countries by utilizing data of the Changing Academic Profession (CAP) survey and the Academic Profession in Asia (APA) survey. Here, the mobility pattern could be operationally defined as follows.

- Self-contained: obtained both first degree and doctoral degree in home country
- Study Abroad: obtained first degree in home country, and doctoral degree abroad
- Magnet A: obtained first degree abroad, and doctoral degree in home country
- Magnet B: obtained both first degree abroad and doctoral degree abroad

Here, we could also identify the difference of the stage in the formation and

development of academic profession.

- Formation stage: increase of higher degrees
- Matured stage: stagnation or decrease of higher degrees

Table 2 presents (by the year of earning and the academic field in and out of Japan) the number of respondents who earned doctoral degrees based on Japan's country data of the APA survey. The table indicates that the trend patterns in the number of doctoral degree earning is different among respective fields. Namely, a systematic production of doctoral degrees was established by 1980s in the STEM fields. Then, the number of doctoral degree earning at Japanese universities in the humanities and the social sciences (HSS) began to increase from the 1990s. By the 1970s, except for the HSS fields, the number of doctoral degrees earned inside Japan has always far exceeded the number of doctoral degrees abroad since the 1960s in all fields. These indicate that even in the case of Japan which experienced the earliest development of the academic profession in East Asia, a normative pattern of formation of the academic profession reached to the doctoral degree is not such an old phenomenon.

Some fields such as the natural sciences already reached the stagnation of doctoral degree earning by the 1990s. However, the academic profession with doctoral degrees in humanities, social sciences, and health sciences may still have been in a formative stage in the 2000s, at least qualitatively. Having said so, as can be seen in Table 2, the share of those domestic degrees within total earned doctoral degrees among faculties in Japanese universities has always been more than 90% in STEM fields from the 1960s, in the humanities from the 1970s, and even in the social sciences from the 1980s. This is sufficiently high to identify Japan as a type of self-contained formation of the academic profession.

The domination of the self-contained pattern among academics of Japanese universities is also confirmed by a more detailed pattern analysis based on the above-mentioned definition of the academic mobility patterns (self-contained, study abroad, Magnet A, and Magnet B) shown in Table 3. Until the 1980s, the opportunities to earn domestic doctoral degrees had been highly limited in the HSS fields, and then academics in these fields tended to earn doctoral degrees abroad, after earning the first degree inside Japan. However, once the doctoral degree started to be granted in the HSS fields from 1990s, the domination of the self-contained pattern of academic mobility became dominant. In the STEM fields, where the systemic production of doctoral degrees started earlier, the

domination of the self-contained pattern has always been outstanding after World War II.

Table 2. Doctoral degrees earned by academics in Japanese universities

	earned in Japan					earned in other countries					share of doctoral degrees earned in Japan (%)				
	before 1970	1970-1979	1980-1989	1990-1999	2000-2012	before 1970	1970-1979	1980-1989	1990-1999	2000-2012	before 1970	1970-1979	1980-1989	1990-1999	2000-2012
Humanities	0	0	1	9	34	0	2	0	2	3		0.0	100.0	81.8	91.9
Social sciences	0	0	2	11	45	0	1	2	3	6		0.0	50.0	78.6	88.2
Natural sciences	0	11	54	53	66	0	1	3	4	0		91.7	94.7	93.0	100.0
Engineering	0	21	34	107	99	0	1	1	0	1		95.5	97.1	100.0	99.0
Agriculture	0	1	17	23	15	0	0	0	0	1		100.0	100.0	100.0	93.8
Health/Medical sciences	3	5	26	44	83	0	0	0	0	1	100.0	100.0	100.0	100.0	98.8
Teacher training and education science	0	0	0	5	5	0	0	0	0	1				100.0	83.3

Table 3. Mobility patterns of academics in Japanese universities (%)

	before 1970	1970-1979	1980-1989	1990-1999	2000-2012
HSS					
Self-contained		0.0	60.0	77.3	87.3
Study Abroad		100.0	40.0	18.2	6.3
Magnet A		0.0	0.0	0.0	5.1
Magnet B		0.0	0.0	4.5	1.3
N	0	3	5	22	79
STEM					
Self-contained	100.0	94.9	96.9	96.8	97.0
Study Abroad	0.0	5.1	3.1	0.9	0.4
Magnet A	0.0	0.0	0.0	1.4	2.1
Magnet B	0.0	0.0	0.0	0.9	0.4
N	2	39	130	218	237

International comparison

Hereafter the focus is exclusively upon the STEM fields, where the academic level reached to the doctoral degree is relatively standardized internationally. Also, academic mobility in the STEM fields could be considered the result of globally-measured research performance, at least compared with one in the HSS fields where the cultural and linguistic factors are significantly influential.

Following are the typical patterns selected from the countries participating

in both the CAP and APA surveys. From the CAP survey, four representative cases were selected (Table 4). Germany could be understood as a typical case of the domination of the self-contained pattern just as Japan is seen to be in Table 3. There, the number of earned doctoral degree were already high in the 1980s, and the share of domestic doctoral degree (Self-contained + Magnet A) has always exceeded 90%. Korea can be categorized as a typical case of the domination of the study abroad pattern. From the 1980s Korean academics in the STEM fields began to earn doctoral degrees in Korea, and even in the 2000s, around 30% of them earned doctoral degrees outside of their country. However, the share of the self-contained pattern already exceeded the share of the study abroad pattern by the 1990s, mainly caused by the acquisition of the capacity of systematic production of doctoral degrees by Korean universities, at least, in the STEM fields.

The United States type can be understood as the significance of the Magnet A mobility pattern. Here, a significant number of faculty who earned first degree outside of the United States has always exceeded 20% (Magnet A and B), but the absolute majority of them earn doctoral degree in the United States (Self-contained and Magnet A). This means that it is much more advantageous in getting an academic job in the United States if one earns doctoral degrees at a university there. At the same time, the United States has experienced stagnation in the absolute number of doctoral degree earning since 1970s, at least in the STEM fields.

Lastly, Hong Kong can be seen as a representative example of the dominance of magnet patterns in academic mobility. Until the 1990s, the majority of the faculty there earned both first degrees and doctoral degrees outside of Hong Kong (Magnet A). The difference of Magnet A and Magnet B is mainly caused by the capacity of fostering next generation researchers. It is quite recent that Hong Kong started to hire those who earned doctoral degrees in Hong Kong. This may be partly because Hong Kong has attracted internationally competitive researchers to a high level academic environment, while it is still recent that they obtained the capacity in their graduate education in the STEM fields to meet the high standards required of their faculty members.

Table 5 shows the results of the APA survey in the same manner, *i.e.* the trends in the STEM fields in Asian countries. Here, Japan and Taiwan are obviously in a matured stage (Table 3). However, in Taiwan, the study abroad pattern of academic mobility dominated until the 1980s, and even now is significantly strong. Considering that Japan is definitely a country where the Self-contained mobility pattern is dominates, Taiwan is much closer to Korea in

terms of the significance of the Study Abroad pattern. As shown in Table 5, other countries can be understood to be in a formative, developmental stage. Especially, Cambodia which started the actual formation of the academic profession in the 2000s, and even now it is difficult to ascertain whether the Cambodian universities have the capacity to foster next generation researchers, and the academics with doctoral degrees tend to start studying abroad at the first degree level.

Table 4. Mobility patterns of academics of selected countries from the CAP survey in the STEM fields (%)

	before 1970	1970-1979	1980-1989	1990-1999	2000-2008
Germany					
Self-contained	95.2	90.4	87.9	90.0	85.2
Study Abroad	0.0	1.2	0.7	3.0	0.8
Magnet A	4.8	2.4	4.7	3.0	6.6
Magnet B	0.0	6.0	6.7	4.0	7.4
N	21	83	149	201	122
Korea					
Self-contained	0	20.0	47.2	58.0	67.0
Study Abroad	100	80.0	51.4	42.0	31.1
Magnet A					
Magnet B	0	0.0	1.4	0.0	1.9
N	1	5	72	207	106
US					
Self-contained	75.8	81.8	71.3	74.4	79.4
Study Abroad	0.0	0.0	1.1	0.0	0.0
Magnet A	15.2	9.1	16.1	17.4	15.9
Magnet B	9.1	9.1	11.5	8.1	4.8
N	33	66	87	86	63
Hong Kong					
Self-contained		5.6	1.9	24.5	35.7
Study Abroad		16.7	22.2	16.3	15.7
Magnet A		0.0	1.9	7.1	21.4
Magnet B		77.8	74.1	52.0	27.1
N	0	18	54	98	70

Table 5. Mobility patterns of academics in Asian countries from the APA survey (%)

	Before 1970	1970-1979	1980-1989	1990-1999	2000-2012
Cambodia					
Self-contained				0.0	20.0
Study abroad					
Magnet A					
Magnet B				100.0	80.0
N	0	0	0	3	15
China					
Self-contained			83.3	80.0	97.5
Study abroad			16.7	20.0	2.5
Magnet A					
Magnet B					
N	0	0	6	25	397
Taiwan					
Self-contained		27.3	21.7	57.6	65.0
Study abroad		54.5	78.3	39.4	35.0
Magnet A					
Magnet B		18.2	0.0	3.0	0.0
N	0	11	23	33	20
Malaysia					
Self-contained			37.5	15.2	40.3
Study abroad			37.5	15.2	24.8
Magnet A			0.0	8.7	15.4
Magnet B			25.0	60.9	19.5
N	0	0	16	46	149
Singapore					
Self-contained	0.0	0.0	0.0	5.0	15.2
Study abroad	0.0	50.0	11.1	10.0	4.3
Magnet A	0.0	0.0	0.0	0.0	13.0
Magnet B	100.0	50.0	88.9	85.0	67.4
N	1	2	9	20	46
Vietnam					
Self-contained				0.0	48.2
Study abroad				50.0	46.4
Magnet A				0.0	3.6
Magnet B				50.0	1.8
N	0	0	0	2	56

To reiterate, mobility patterns are different among those countries in the formative, developmental stage of the academic profession in the STEM fields. Namely, in China, the self-contained mobility pattern is highly dominate as seen

in Japan and Germany. In Malaysia and Vietnam, the Study Abroad patterns and Magnet B patterns are substantially strong, while the share of the Self-contained patterns rapidly increased in the 2000s. In Singapore, the Magnet B pattern is highly significant just as seen in Hong Kong, and the reason should be completely different with Cambodia.

Conclusion

From the foregoing analysis, one finds that the mobility patterns and the formation of the academic profession in various countries do not necessarily take the same path way. The summarized results point out a contradiction between the international profiles in academic mobility and the capacity to foster next generation researchers at a system level (Table 6). Namely, if a higher education system has a high level capacity to foster next generation researchers, a Self-contained model tends to be strengthened. At the same time, the legacy of colonization may still be influential. The former colonizers tended to trust in doctoral degrees earned in home countries (Self-contained or Magnet A), while the others with colonized experiences tended to rely more on the degrees earned abroad (Study Abroad or Magnet B). Further detailed investigation based on international comparisons and clear frameworks are necessary to identify the missing link for the enhancement of research capacity.

Table 6. Patterns of academic mobility: National comparison

	Forming	Developing	Matured
Self-contained		China	Japan, Germany
Study Abroad		Malaysia, Vietnam	Taiwan, Korea
Magnet A			US
Magnet B	Cambodia		Hong Kong, Singapore

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Presentations

Work & Academic Productivity of the Academy

The Impact of Research Productivity on Academics in Taiwan

Chen, Robin J. * and Wu, Ching-Shan *

1. Introduction

In recent years, Taiwan has been actively promoting several projects for the reform of higher education. The Ministry of Education assists universities by improving their infrastructure, teaching excellence, development of key areas, and overall management strategies with hundreds of millions New Taiwan Dollars per year. Such a development toward the improvement of higher education's quality and performance has provided its positive contribution.

Taiwan had only 7 higher education institutes in 1950; in 1970 it increased to 92; in 2000 it expanded further to 150; and by 2010 it already amounted to 163. The density of higher education institutes is quite high. This rapid development of higher education has shifted from the traditional elite education to the massification of education. Although it has provided students with more schooling opportunities, however, it has raised several questions such as low quality of education, lack of competitiveness, and so forth. On the other hand, coupled with current development such as the quality of education, the strict requirement of publication for faculty, the operation of higher education has generated some issues which became challenges for Taiwan's higher education development.

The expectation for higher education has become a dynamic concept following with evolution of social structure. Due to the trend of global university rankings, getting published has been adopted as the dominant status

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among academics around the world, especially in the East Asia region. This paper questions whether the quantity of publication contributes to the job satisfaction of university teachers. In the Taiwanese context, university teaching can also be viewed as community service; the service performed by the educators is not only for the students, but also to serve the country, the civilization, and to all humankind (Lin, 2009). Therefore, job satisfaction of university teachers hinges on the quality of university education. Improving the quality of higher education in Taiwan is worth discussing.

From Taiwan's theses, dissertations, and academic journals, one discovers that research on "job satisfaction of university teachers" is rare. Currently, Taiwan still mainly focuses on studying the job satisfaction of primary and secondary school teachers or the job satisfaction of school administrative staffs, hence the job satisfaction of university teachers is worthy of further study.

The quality of education is relevant to national competitiveness, particularly where the university is the last stage of schooling, it should be the driving force behind the nourishment of future talent upon which the country's future depends. University teachers act as a go-between; they are the matchmakers between students and knowledge who pass the results of their research to the next generations to help the country face future competiveness and perform social services to enhance the country's soft power.

2. Literature review

2.1 Regional integration of higher education

The 1998 Sorbonne Joint Declaration can be regarded as an important transition in European Union (EU) higher education policy. The Declaration proposes an ideal European Higher Education Zone to encourage mutual learning and cooperation among the students of each member states. The later amendment of the Blolgna Declaration in 1999, in addition to further emphasis on the importance, it also made six specific recommendations: 1) the use of readability and comparability qualification system; 2) the use of two-cycle system in the university system; 3) establishing credit system; 4) promoting the mutual mobility among the students; 5) promoting the education quality assurance in Europe; and 6) advancing European higher education and expecting the ideal European Higher Education Zone to be completed by 2010 (European Union, 2010).

Pepin (2007) pointed out that the EU's current efforts in higher education

are to complete the European Higher Education Zone dream. The higher education zone means that the diploma and leaning courses are not limited or restricted to a single country but at the same time their credits can be converted among the EU countries, even learning content easily compatible among them. In order to increase the mobility of students in higher education in Europe, the Erasmus Project was established in the European Community (EC) as early as 1987. It was hoped that by granting higher education students in Europe to study abroad and learn more about the culture and values from different regions of Europe thereby achieving knowledge of the member states and the opportunity for interactions among the students. Because of the effective implementation of the Erasmus Project, in 2004 it further expanded its implementation, establishing the Erasmus Mundus Project which added non-EU countries into its scope and letting students pursue a degree in Europe. In addition to attracting other outstanding students, it also attempts to shape Europe as a world leaning center.

Given the trend of regional integration, Marginson and Rhoades (2002) consider it is necessary to analyze the mode of future operation through the role of the states, the market, and the higher education system in order to effectively face challenges in the 21st century. The reason for their recognizing that higher education along with the state apparatus and the features of the market show relationships in triangles, is due to the development of future globalization mainly through the impact on economic expansion of supply and demand. The economic characteristics and scale are no longer the tangibles sources, land and money, but through professional mobilization and cross-border cooperation, which means that higher education will play an important role on the aforementioned characteristics. Coincidentally, two Korean scholars Kim and Lee (2008) also studied in recent years the development of South Korea. In the study they indirectly responded to the important relationships between the countries, markets and the higher education. They believe the results concluded from students' enrollment in Korean higher education over the past few decades along with the increasing amount of schools, provided that market choosing has become an inevitable trend, as the government gradually exert its influence on higher education in the private sector. They also have relatively lower their resources invested in higher education, making the scale of Korean higher education dependent on private sector resources relatively high among the OECD countries.

2.2 The output of higher education in Taiwan

From 1950 to 1980, Taiwan has been mainly focused on its economic development, emphasizing the cultivation of professionals, but by the mid-1990s, a serious gap of supply and demand between higher education and industry manpower developed. Hence the competitive advantages of Taiwan's professionals declined sharply, and the resulting challenge was an insufficient supply of professionals. In 2007, there were 163 colleges whose 90% admission rate resulted in a scale of 1.3 million students, approximately 300, 000 of whom were graduating annually; however, around 130,000 of them remained unemployed. An urgent issue that needs to be resolved.

The imbalance of supply and demand of professionals is the primary subject which Taiwan must face. Compared to South Korea who in recent years has been vigorously promoting digital professional cultivation programs, Taiwan's digital industry demanded 6,600 professionals but the education sector could only supply around 3,900 (Executive Yuan, 2006). Industry mostly demanded R&D engineers and programers, but the ones urgently needed were project managers, marketing specialists, and planning related personnel. There was formation of many multi-professionals, but specialized personnel were a rare phenomenon. According to the Executive Yuan survey, the current prevailing view among domestic manufacturers regarding professional supply is: high-end producers and directors are not easily to find; the demand for R&D personnel is high; professions in digital content production process mostly lack aesthetic qualities; and the education system is short of integrated professionals needed by the digital content industry. Therefore it is visible that there is a clear gap in our demand for professionals in practitioner field, as well as our supply for training professionals in academic field.

In addition to the aforementioned lack of professionals, it shows that in recent years technicians and management professionals have become very worried. The imbalance in the supply and demand of professionals due to the fact that our economic policy has been depended on production for a long time. We have relied on importing technology skills and ignored the ability of R&D, hence leading to a lack of researchers, especially a serious shortage of R&D personnel in four main technology industries, such as semiconductors, flat panel displays, digital content, and communications technology. Information engineering, industrial design, industrial engineering, materials engineering, and other departments are also facing a shortage of professionals. On the other hand, information management, civil construction, food and nutrition,

mechanical engineering, agriculture, forestry, and environmental sciences graduates find it difficult to find employment. In conclusion, it creates a phenomenon of the unbalanced supply-demand situation in the field of technology.

Second, the quality of professionals has highly increased. For example, every year around 28,000 of students graduate from the Department of Electronic Science and Technology. Half of them lack professional capability, and companies are reluctant to hire them. Many universities find the basic skills of their students have gradually declined, and the burning thirst for knowledge and to work hard has been fading. After graduation, many students exhibit three shortcomings: many resignations, leave of absence, and private matters, meaning lack of professionalism. Their performance needs to be strengthened, but their overall performance is not much better than that of university students from ten years ago. According to Chang and Huang (2007), Taiwanese professionals are obviously insufficient, compared to the United States where their counterparts possess more professional and diverse expertise. In a total population of 14% of professionals, primary and secondary teachers only account for 3.7%. The rest are very diverse, such as doctors, lawyers, accountants, and other professionals. In relation to Taiwan, professionals occupy around 5% of the total population. Primary and secondary teachers already account for 2%, equivalent to about four percent. Therefore it is evident that Taiwanese professionals account for few of the total population and the diversity of professionals is much lower than the percentage of the population. Facing global competition, the education sector must adjust their pace in response to the rapid changes in the industrial structure, and assure the needed implementation of higher and vocational education in order to ensure an adequate supply of human resources in R&D and industrial technology at all levels to provide the most competitive professionals and to further enhance the percentage and diversity of our professional specialists.

2.3 Working condition and the stress of university teachers

In Taiwan, the University Act (Ministry of Education, 2011) expressly provides that university should establish an educator evaluation system, as far as is concerned to perform assessment on teachers' teaching, research, counseling and service effectiveness, therefore the mission of Taiwanese university teachers encompasses four dimensions: teaching, research, counseling, and service. Modern university teachers should mainly shoulder the tasks of teaching,

research, and social service. Teaching includes evaluation and results, the number and quality of theses and dissertations guided, and research achievements on teaching strategies through curriculum designed to enhance the core competencies for students' career development. Research is a way for further exploring disciplinary knowledge to continue the role of deepening the university academic knowledge, including the level of difficulty of monographs, theses, winning projects, and research projects. Social service includes campus counseling, working condition and its effectiveness, and off-campus part-time socio-economic benefits.

Viewed from the standpoint of evaluation, the university teachers' mission includes teaching, research, and service. Teaching includes preparation of materials, student assessments, teacher and student discussions, course content, teaching skills, curriculum design, *etc.* Research includes academic journals, thesis conferences, monograph book or research reports, and doctoral thesis guidance. Service includes campus' services, participation in public affairs, seniority, *etc.* (Deng, Hsiao & Tseng, 1994; Lin, 2009). In short, first-class universities should provide good teachers with sufficient time to study, to conduct research, and to teach.

Stress is a popular subject in modern psychology. According to some arguments (Chu, 1997; Liang, 2007; Yu, 2005; Steers & Black, 1996; Nelson & Quick, 2012), it is the physical and mental exertion brought about as a result of stimulation the individual faces both internally and with the external environment. The stress of university teachers may come from the external environmental factors of teaching, research, and service per se, it may also due to the anxiety generated from their own intrinsic personal characteristics such as gender, position, *etc.* The origins of stress among university teachers

From international rankings

Top universities are located around the world, and all of them are pursuing higher rankings in order to be perceived as better. For example, the London's Times Higher Education – QS World University Rankings is an agency widely known for ranking world universities. Ranking is the best way to compare and evaluate universities' performance, to ensure the transparency of information, and to guarantee quality. Achieving the prestige of becoming one of the top 100 universities in the world is bound to increase their work and stress.

From domestic competition

Due to declining fertility rates, the number of first year college students will

start to drop in 2016 academic year. It is estimated that universities will cut 27,330 students compared to the 2012 academic year; therefore, recruiting students becomes a responsibility for everyone (Huang, 2012). At the same time, universities in order to seek funding have applied to programs provided by the Ministry of Education, such as the Five-Years-50-Billion Project, the Teaching Excellence Project, and the Develop the Paradigm Science and Technology University Program. Universities are continuingly "pressing" the teachers; they apparently have become analogous to sweat factories which are the products of competitiveness. University teachers are all at full sprint, striking for resources and talents, definitely increasing their work stress.

From teacher evaluation

University teacher evaluation is systematic, organized, purposeful, and widely aimed at teacher background and performance. It serves as a basis for improving the quality of teachers as well to ensure the quality of teaching (Lin, 2009). According to the University Act regulation, university faculty members must receive an evaluation every five years. It consists of several dimensions including teaching, research, counseling, and service, each on a 100 point scale, 70 points is the minimum score in order to pass. Teachers who do not pass the teacher evaluation for two consecutive years are not grant promotion and starting from the third year benefits such as granting a salary increase, research or studying abroad, *etc.* are reduced. Those who do not pass for three consecutive years are terminated. Hence, it is evident that teacher evaluation has brought much stress to full-time teachers.

From school promotion

The Taiwanese government has imposed a criterion that universities only emphasize the number of theses, the result is that speculators will be specifically look for less-influential journals for their submissions, namely the 3I: Social Sciences Citation Index database (SSCI); Science Citation Index database (SCI); and Arts and Humanities Citation Index database (A&HCI). Scholars will only write short papers, and refuse to write time-consuming books (Tseng, 2011). University teachers are mustering all their energy, sprinting for promotion. Most of the universities clearly state that teachers promotion includes the three dimensions of research, teaching, and service. Research accounts for more than 80%. This indicates that conducting research has grown increasingly stressful among university teachers.

2.4 Job satisfaction

The term 'job satisfaction' refers to one's view about his/her overall job at both the physical and psychological levels (Hsieh, 2009). It concerns organization members working hours, working location, and promotion opportunities hence it leads to produces feelings about their work, the more feelings they possess, the higher is the job satisfaction. Conversely, the lower the feelings, the lower is the job satisfaction. Since the mission of university teachers encompasses three dimensions including teaching, research and service, as discussed in section II, therefore this paper will mainly focuse the degree of satisfaction with these as well their overall satisfaction.

Many empirical studies regarding job satisfaction have been conducted at home and abroad. Raemah and Rosli (2011) found that teachers from Malaysian universities tend to achieve higher job satisfaction on teaching and research. As for teaching, its academic freedom and teaching autonomy are mostly satisfied by the teachers. In addition, Safdar, Riasat, Gulap and Muhammad (2010) found that the job satisfaction university teachers from northwest Pakistan was increased by upgrading software and hardware facilities. It helps university teachers to achieve better teaching and research, and as a result university teachers have more time to allocate for teaching and research. However in regards to teaching, university teachers are mostly dissatisfied with course assignments; sometimes it brings additional burdens when the curriculum does not match with teachers' professional fields.

Since satisfaction with teaching, research and service may vary, we need to further look for the factors which influence university teachers' job satisfaction. Ward and Sloane (2000) consider that job satisfaction for female teachers in the fields of science and technology, and social studies is relatively low. Male teachers satisfaction in the field of social studies is high, but their satisfaction in the field of science and technology tends to be low. Moreover, Chen (2013) found that gender differences in job satisfaction of university teachers do show a significant impact. Besides the different specialty fields which influences job satisfaction, gender differences are also a key impact on it.

The position of the teachers is also one of the factors which affect their job satisfaction. Teachers from Greek universities generally possess a higher job satisfaction, in which the job satisfaction among lecturers ranks higher than other teachers. However, there are some scholars who disagree and believe that position is not the factor which influences job satisfaction: male teachers' job satisfaction is lower than female teachers; demographic factors such as age,

status, degree do not have a significant impact on job satisfaction (Nadeem, 2011). Coincidentally, Yu and Yao (2011) found that for young teachers in the arts, sciences, and engineering at Anhui University of China, their job satisfaction job promotion, and perceptions of leadership and of colleagues did not differ significantly. Therefore in this research will further deepen this variable in order to understand whether position do show a significant impact among domestic university teachers.

In addition to gender and position, there are many other variables that affect university teachers' job satisfaction. Yang (2010) found that for university teachers of mainland China the primary factors in determining teachers job satisfaction were wages and benefits; followed by the work itself – job accomplishment, job interest, and job creativeness; followed by management factors, leadership, system, working conditions, and social relationships. Therefore, salary is also a concern worthy of study.

3. Research design/methods

According to the above-mentioned three research motivations, the purpose of this study includes: (a) understanding the allocation of work time of university teachers in different specialty areas; (b) understanding the job satisfaction of university teachers in different specialty areas; (c) understanding the relationship of individual interests and the research production for the past three years; and (d) analyzing individual expectations and institutional practice in terms of promotion.

The research questions of this study are: (a) How is the allocation of work time of university teachers in different specialty areas?; (b) How is the job satisfaction of university teachers in different specialty areas?; (c) What is the relationship of individual interests and the research production for the past three years?; and (d) What is the relationship between individual expectation and institutional practice in terms of promotion?

The study utilizes purposive sampling with the questionnaires developed for the Academic Profession in Asia serial conferences organized by the Research Institutes for Higher Education at Hiroshima University. At the cooperation meeting held in Hiroshima, it was agreed that an ideal sample size for Taiwan is 400. To achieve an effective sample size, it was necessary for the actual sample size to be larger than 400 to account for the non-response of the target population. The sample size needs to be adjusted to reflect anticipated response rate. Experience in previous survey studies in Taiwan suggest that response rates to

survey tends to hover around 30 percent. A conservative response rate of 30 percent has been assumed for the survey. Therefore, this study design sample size has been rounded up to 1200, and the number of the respondents is 412.

4. Results and discussion

4.1 The allocation of work time of university teachers in different specialty areas

According to Table 1, the mean teaching hours per week in the humanities is 18.87; 20.22 in the social sciences; 14.07 in the natural sciences; 17.45 in engineering; and 17.28 in the teacher training and education science (F value=.996; p=.411). The result shows university teachers in different disciplines have no significant difference in working hours per week.

There were similar results in research (F value=.453; p=.770), service (F value=1.094; p=.360), and administration (F value=.349; p=.845) areas. In other words, the ANOVA test shows that neither in teaching, research, service, or the administration area do different university teachers have any significant difference in terms of working hours.

Table 1. ANOVA (different disciplines vs. hours per week when classes are <u>not</u> in session)

Variables	Teaching		Research		Service		Administration	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Humanities	18.87	13.301	15.85	12.877	7.64	5.342	8.94	9.334
Social Sciences	20.22	16.115	17.22	10.923	8.55	6.381	10.96	10.006
Natural Sciences	14.07	5.327	18.57	8.864	5.36	5.472	11.07	8.204
Engineering	17.45	6.878	19.32	8.791	6.41	4.563	9.73	8.592
Teacher Training & Education Science	17.28	9.477	18.16	13.805	8.04	6.582	9.96	9.330
Difference of means test F test	.996 (P=.411)		.453 (P=.770)		1.094 (P=.360)		.349 (P=.845)	

4.2 Job satisfaction of university teachers in different specialty areas

According to Table 2, the mean job satisfaction in the humanities is 2.32; 2.21 in social sciences; 2.00 in the natural sciences; 2.00 in engineering; and 2.12 in teachers training and education science (F value=1.212; p=.306). The result shows university teachers from different disciplines have no significant difference in job satisfaction.

Table 2. ANOVA (different disciplines vs. job satisfaction)

Variables		Job satisfaction
Humanities	Mean	2.32
	Std. Deviation	1.152
Social Sciences	Mean	2.21
	Std. Deviation	.804
Natural Sciences	Mean	2.00
	Std. Deviation	.707
Engineering	Mean	2.00
	Std. Deviation	.750
Teacher Training & Education Science	Mean	2.12
	Std. Deviation	.904
Difference of means test	F test	1.212 (p=.306)
	Post hoc	

4.3 The relationship of individual interests and the research production for the past three years

According to Table 3, those who have interest in both teaching and research show more research productivity than those who only have a single interest, either teaching or research. According to Table 4, the correlation between individual interests and research production for the past three years is significant ($F=10.376$, $p<0.001$). From the multiple comparisons (Table 5), the group of "in both, but leaning toward research" shows more research productivity (7.609) than the group of "in both, but leaning toward teaching" for the past three years and reaches a significant result. The group of "in both, but leaning toward research" also show its higher productivity (12.205) compared to the group of "Teaching".

4.4 The correlation between individual expectation and institutional practice in terms of promotion

Promotion for university teachers is one of the crucial elements when it comes to professional development. Based on Person Correlation analysis, Table 6 shows the correlation between individual expectations and institutional practice on promotion. No matter in research, teaching, administration and management, or social service, the correlation between individual expectations and institutional practice in terms of promotion is moderately correlated (.493, .398, .426, .444). In other words, the correlation between individual expectation to get promotion and the institutional practice is not high.

Table 3. Past three years research production

Interest	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Teaching	15	9.67	9.875	2.550	4.20	15.14	1	35
In both, but leaning toward teaching	156	14.26	13.358	1.069	12.15	16.38	1	97
In both, but leaning toward research	164	21.87	15.316	1.196	19.51	24.23	0	82
Research	16	11.94	10.611	2.653	6.28	17.59	1	38
Total	351	17.52	14.651	.782	15.98	19.05	0	97

Table 4. ANOVA (individual interests and research production)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6184.858	3	2061.619	10.376	.000
Within Groups	68944.806	347	198.688		
Total	75129.664	350			

Table 5. Multiple comparisons

Dependent Variable: past three years research production Scheffe

(I) Main interest	(J) Main interest	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence	
					Lower Bound	Upper Bound
Teaching	Both, but leaning toward to teaching	-4.596	3.810	.693	-15.30	6.11
	Both, but leaning toward to research	-12.205*	3.802	.017	-22.89	-1.52
	Research	-2.271	5.066	.977	-16.50	11.96
Both, but leaning toward to teaching	Teaching	4.596	3.810	.693	-6.11	15.30
	Both, but leaning toward to research	-7.609*	1.576	.000	-12.04	-3.18
	Research	2.325	3.700	.941	-8.07	12.72
Both, but leaning toward to research	Teaching	12.205*	3.802	.017	1.52	22.89
	Both, but leaning toward to teaching	7.609*	1.576	.000	3.18	12.04
	Research	9.934	3.692	.066	-.44	20.31
Research	Teaching	2.271	5.066	.977	-11.96	16.50
	Both, but leaning toward to teaching	-2.325	3.700	.941	-12.72	8.07
	Both, but leaning toward to research	-9.934	3.692	.066	-20.31	.44

* The mean difference is significant at the 0.05 level.

5. Conclusion

The research requirement for Taiwanese university teachers has become the main focus of an academic career, led by the forced criteria of evaluation. This also explains the result of a positive correlation between research hours and job satisfaction. Compared to teaching, teachers get more academic feedback from the outcome of research. However, this finding exposes the priority setting of university teachers in Taiwan, that is, research plays a more crucial role than teaching, even though the era of massified higher education opening more enrollment opportunities to the public has arrived. The deflective focus of

university teachers, leaning toward the research, will lower the quality of teaching in higher education. The teaching and research nexus has been becoming a dilemma for the development of Taiwanese higher education.

Under the trend of globalization and university rankings, university teacher hardly can possess the autonomy of engaging in teaching. Therefore, the role of higher education institutes needs to be reflected. It has been done from the point of functional evolution: elite to universal, to massification. It seems research has replaced the importance of teaching. This new academic focus has turned into the dominant discourse among university teachers. The triangle pillars, research, teaching, and service, now are now becoming out of balance.

Table 6. Individual expectation vs. institutional practice on promotion

			Individual side:				
			Research	Teaching	Administration and management	Social services	Other
Institutional side:	Research	Correlation	.493**	.397**	.142**	.190**	.181
		Sig. (2-tailed)	.000	.000	.008	.000	.314
		N	357	357	347	349	33
	Teaching	Correlation	.434**	.398**	.257**	.202**	.171
		Sig. (2-tailed)	.000	.000	.000	.000	.341
		N	355	358	346	350	33
	dministration and management	Correlation	.094	.153**	.426**	.337**	.369*
		Sig. (2-tailed)	.082	.004	.000	.000	.038
		N	347	348	345	344	32
	Social services	Correlation	.168**	.180**	.412**	.444**	-.010
		Sig. (2-tailed)	.002	.001	.000	.000	.957
		N	348	350	342	348	32
	Other	Correlation	.136	.270	.466*	.355	.869**
		Sig. (2-tailed)	.498	.174	.014	.070	.000
		N	27	27	27	27	18

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

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University Academic Staffs' Career and Research Productivity: Similarities and differences in six Asian nations

Tsukasa Daizen *

Introduction

Society in the 21st century has been identified as a knowledge-based one. To sustain and develop the society, the creation, communication and application of new knowledge are important (Technology and Science Council, 2005). Specifically, the university, which is primarily concerned with conducting education and research activity, is very important with respect to the formation of students' character; the training of young researchers and advanced professionals; the progress of national strategy such as the promotion of culture; and increasing global competitiveness. In Japan, from about 1990, higher education reforms such as the advancement of education and research activity, the individualization of higher education institutions; and the activation of higher education management have been implemented in response to social and national expectations.

1.1 The report of the university council

The National Council on Educational Reform, which was established by Prime Minister Yasuhiro Nakasone under the direct control of the Cabinet, submitted four reports and was dissolved in 1987. In response to one of the reports of the National Council on Educational Reform and with the primary aim of discussing the nature of higher education in Japan, the University Council was

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established as a consultative body of the Minister of Education in September, 1987. It was reorganized with ministries and government offices in January, 2001 to the Central Education Council's working group on universities. Meanwhile, the working group reported many policies.

1.2 Facilitation of the awarding of the Doctorate

The Degree Regulations were revised by clearly defining the basic concept of the graduate school course system and establishing a graduate school setting in 1974. In other words, it was decided to confer a degree upon the one who completed the course of the graduate school and acquired the desired ability which the course demanded; for example, in the doctoral course, superior research capability necessary to independently perform research activities in his/her major field.

Whereas, in the field of the natural sciences, a doctoral degree is conferred according to the purpose of the degree conferment system based on this graduate school course system. Few doctoral degrees are conferred in the fields of the humanities and social sciences.

As the reason, the way of thinking of the graduate school course system and the degree system based on it is not well understood in the humanities and social sciences. An excessively advanced and systematic article is required to complete a doctoral course. However, for globalization and active acceptance of foreign students to progress, improvement in the situation of degree conferment along the basic idea of the graduate school course system is strongly needed in the various quarters.

Furthermore, because a graduate student generally cannot acquire a doctoral degree within the standard years required for graduation, the learning motivation of graduate students is spoiled. To address these situations, a 1991 report of the University Council called for "the review of the degree system and the evaluation of the graduate school" and it was pointed out that it was an urgent problem to review the degree system and implement an aggressive measures to facilitate degree conferment.

Table 1 presents the situation of acquisition of the course doctorate in Japan. In 1991 it was 63.9% in all disciplines. According to the University Council report, the rate continued rising for all disciplines. By 2010 it exceeded 80% in the specialized fields of science and engineering; it became approximately 100% in agriculture; and 90% in the field of health studies. On the other hand, in the humanities, social sciences, and each pedagogical field the rate was half that of

the natural sciences. Nonetheless the rate in these fields increased from 4.7%, 11.0%, and 16.3% in 1991 to 48.9%, 57.8%, 50.6% in 2010.

Table 1. The situation of acquisition of the course doctorate in Japan

		Mar-82	Mar-87	Mar-90	Mar-93	Mar-96	Mar-99	Mar-01
(a) The number of graduates from High school		1,449,109	1,654,685	1,766,917	1,755,338	1,554,549	1,362,682	1,326,844
		Apr-88	Apr-93	Apr-96	Apr-99	Apr-02	Apr-05	Apr-07
(b) The number of new students to a doctoral course education level	Humanities	899	1,047	1,398	1,602	1,587	1,621	1,555
	Social sciences	607	813	1,225	1,514	1,681	1,571	1,503
	Natural sciencse	929	1,317	1,697	1,786	1,630	1,621	1,322
	Engineering	1,258	2,410	3,248	3,310	3,274	3,359	3,264
	Agriculture	502	844	987	1,143	1,112	1,057	1,006
	Health sciences	2,973	3,660	4,490	5,189	5,561	5,696	5,672
	Education	153	207	329	347	374	410	453
	Others	157	383	971	1,385	2,015	2,218	2,151
	Total	7,478	10,681	14,345	16,276	17,234	17,553	16,926
		Mar-91	Mar-96	Mar-99	Mar-02	Mar-05	Mar-08	Mar-10
(c) The number of the course doctorate acquisitors	Humanities	42	162	295	461	543	694	760
	Social sciences	67	181	362	525	778	855	869
	Natural sciencse	586	995	1319	1415	1432	1388	1415
	Engineering	983	2143	2680	2985	3417	3455	3240
	Agriculture	385	641	776	900	971	965	1004
	Health sciences	2503	3175	3613	4136	4579	4666	4943
	Education	25	32	90	129	185	180	229
	Others	188	387	635	801	1272	1377	1542
	Total	4779	7716	9770	11352	13177	13580	14002
(d) The course doctorate acquisitor ratio who go to a doctoral course education level three years ago (d)=(c)/(b)*100	Humanities	4.7%	15.5%	21.1%	28.8%	34.2%	42.8%	48.9%
	Social sciences	11.0%	22.3%	29.6%	34.7%	46.3%	54.4%	57.8%
	Natural sciencse	63.1%	75.6%	77.7%	79.2%	87.9%	85.6%	107.0%
	Engineering	78.1%	88.9%	82.5%	90.2%	104.4%	102.9%	99.3%
	Agriculture	76.7%	75.9%	78.6%	78.7%	87.3%	91.3%	99.8%
	Health sciences	84.2%	86.7%	80.5%	79.7%	82.3%	81.9%	87.1%
	Education	16.3%	15.5%	27.4%	37.2%	49.5%	43.9%	50.6%
	Others	119.7%	101.0%	65.4%	57.8%	63.1%	62.1%	71.7%
	Total	63.9%	72.2%	68.1%	69.7%	76.5%	77.4%	82.7%
(e) The course doctorate acquisitor ratio who graduates from High school nine years ago (e)=(c)/(a)*100	Total	0.3%	0.5%	0.6%	0.6%	0.8%	1.0%	1.1%

Note: The data of lists are collected through “Report on School Basic Survey”.

1.3 Promotion of the movement of university professors and the employment of a variety of talented persons as university professor

To enhance educational and research activities in Japanese higher education, the 1994 report “About the improvement of the employment of university professor” stated that the movement of university professors was important. And, it was followed by the 1995 report “A term limit system of the university academic staff” which recommended a term limit system for university professors to promote their movement. It also promoted the employment of working people and foreign students as university academic staff.

This paper seeks to determine whether, in addition to research funds and hours which are generally confirmed as determinants of research productivity, carrier variables such as facilitation of awarding the doctoral degrees (conferring

a doctoral degree just after completing a course of study); promoting the movement of university academic staff; and employing persons with a variety of occupational experiences as university academic staff, determine research productivity. It does so by using the APA data of six countries.

To achieve this purpose, two sections clarify the situation of research productivity of Japanese university academic staff, which is the explained variable of this research. A third section performs a multiple regression analysis and confirms the difference of significant explanatory variables by six countries. The article clarifies whether in Japan there are any differences in significant variables by a specialized field or a generation. Finally, through clarifying variables to promote the research activities of university academic staff, a measure to activate the research activities in the university is presented.

2. The situation of the number of research papers

Academic articles were used as the indicator of research productivity. Their distribution resembles log-normal distribution as shown in Figure 1. Log-normal distribution has the character in which corresponding distribution turns into a normal distribution when the logarithm of the random variable according to Log-normal distribution is calculated. So, in the following analysis, the logarithm of research productivity score is used.

Figure 2 displays the distribution of the logarithm of research productivity score (LRPS).

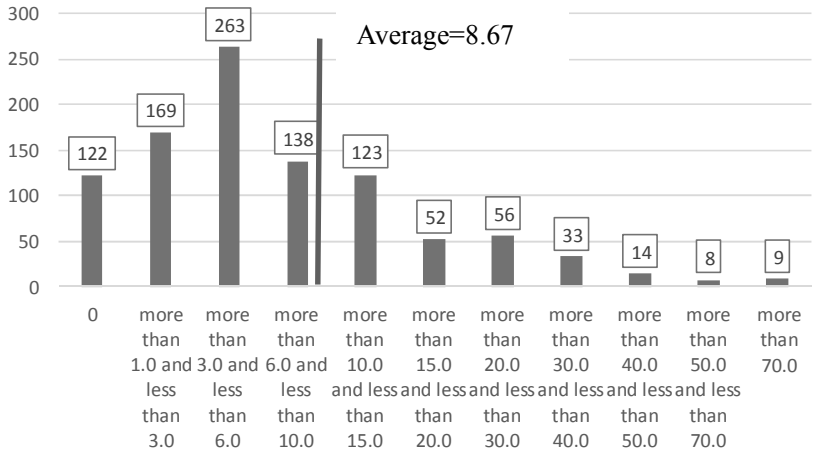


Figure 1. Distribution of the number of research papers

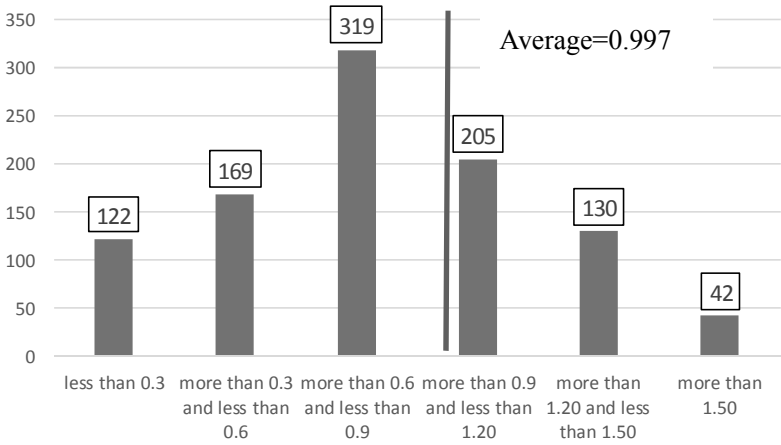


Figure 2. Distribution of LNRP

3. Explanatory framework and variables of research productivity

It is faculty members and their associates, colleagues and graduate students, who perform research projects. Therefore, the results of a research project are dependent upon their personal abilities and efforts (Daizen, 2008). However, the success of their work is influenced by their attributes and the environment of their research activity. This fact has been documented by extensive studies of research productivity (Bellas & Toutkoushian, 1999; Bland, Center, Finstad, Risbey & Staples, 2006; Bonzi & Day, 1991; Daizen, 1996a, 1996b, 2008, 2011; Kotrlik, Bartlett, Higgins & Williams, 2002; Stack, 2004).

A model for examining the factors which influence research productivity is presented schematically in Figure 3 and is discussed below.

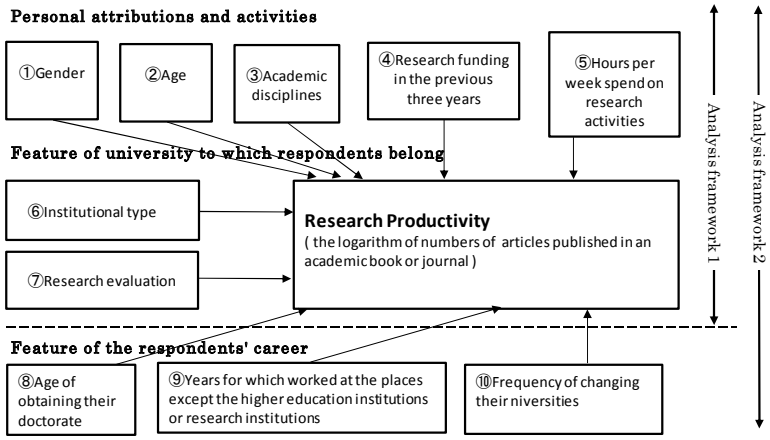


Figure 3. Framework for the analysis

The variables used in this paper are presented in Table 2.

In developing and applying the model, the initial step is to clarify the relationship between each independent variable and the dependent variable research productivity.

Table 2. Variables used in the analysis

Variables	Category
Dependent variables	
Research Productivity	the logarithm of numbers of articles published in an academic book or journal
Independent variables	
Personal attributions and activities	
①Gender	Male=1, Female=0
②Age	
Age40	Over 40 and under 49 years of age=1, Others=0
Age50	Over 50 and under 59 years of age=1, Other=0
③Academic discipline	
Humanities & Social sciences	Discipline of current academic unit which faculty belong to is Humanities or Social sciences =1, Others=0
Natural sciences	Discipline of current academic unit which faculty belong to is Natural sciences=1, Others=0
Engineering & Agriculture	Discipline of current academic unit which faculty belong to is Engineering or Agriculture=1, Others=0
④Research funding in the previous three years	Research funding of more than an average=1, Research cost of less than an average=0
⑤Hours per week spend on research activities	Actual hours of research activities when classes are not in session
Feature of university to which respondents belong	
⑥Institutional type 1)	
TypeI	The institution which offer a doctorate degree by all specialized fields
TypeII	The institution which offer a doctorate degree by more than 50 % of specialized fields
⑦Research evaluation	Someone at or outside your institution evaluate your research activities=1, No one evaluate your research activities=0
Feature of the respondents' career	
⑧Age of obtaining their doctorate	
DocAge2032	Under 32 years old=1, Others=0
DocAge3399	Over 33 years old=1, Others=0
⑨Years for which worked at the places except the higher education institutions or research institutions	actual number
⑩Frequency of changing their universities	Actual number

Note1) Case of China, Project 985 Higher Education Institutions are TypeI, and Project 211 Higher Education Institutions are TypeII.

Table 3. The frequency distribution of the variables used for analysis

		Cambodia	China	Taiwan	Japan	Malaysia	Vietnam	Total	
Dependent variables									
Research Productivity (the logarithm of numbers of articles published in an academic book or journal)	Average	0.6148	0.1976	1.6121	1.7529	1.5381	0.9429	0.9117	***
	Minimum value	0	0	0	0	0	0	0	
	Maximum value	3.93	6.57	3.93	5.02	4.26	3.83	6.57	
	Number of respondents	140	1916	330	977	548	432	4343	
Independent variables									
Personal attributions and activities									
①Gender	Male	85.0%	53.0%	63.0%	85.0%	62.0%	52.0%	63.0%	***
	Female	15.0%	47.0%	37.0%	15.0%	38.0%	48.0%	37.0%	
	Number of respondents	381	2373	363	1028	610	742	5497	
②Age	Over 20 years and under 39 years of age	65.5%	60.1%	12.0%	25.1%	45.2%	68.5%	50.3%	***
	Over 40 years and under 49 years of age	23.3%	31.1%	39.2%	29.2%	23.5%	18.6%	28.3%	
	Over 50 years and under 59 years of age	10.3%	8.3%	35.6%	25.4%	23.7%	11.9%	15.6%	
	Over 60 years	0.8%	0.4%	13.2%	20.2%	7.5%	1.0%	5.8%	
	Number of respondents	377	2350	357	1010	599	724	5417	
③Academic discipline	Humanities&Social sciences	32.2%	43.6%	39.3%	23.3%	32.6%	47.4%	37.9%	***
	Natural sciences	15.6%	14.9%	10.2%	19.9%	9.9%	15.4%	15.1%	
	Engineering&Agriculture	25.7%	27.1%	12.0%	33.3%	31.0%	5.5%	25.0%	
	Others	26.4%	14.3%	38.5%	23.6%	26.5%	31.7%	22.1%	
	Number of respondents	397	2422	384	1040	635	671	5549	
④Research funding in the previous three years	More than an average	10.0%	16.0%	35.0%	22.0%	11.0%	7.0%	17.0%	
	Less than an average	90.0%	84.0%	65.0%	78.0%	89.0%	93.0%	83.0%	
	Number of respondents	385	1512	243	956	428	200	3724	
⑤Hours per week spend on research activity	Average	13.8	18.4	20.2	21.8	11.6	15.6	18.3	***
	Number of respondents	51	902	281	809	437	66	2546	
Feature of university to which respondents belong									
⑥Institutional type	Research university	12.3%	63.5%	51.7%	69.3%	83.1%	24.7%	55.4%	
	Non-research university	87.7%	36.5%	48.3%	30.7%	16.9%	75.3%	44.6%	
	Number of respondents	43	563	150	717	506	181	2160	
⑦Research evaluation	Someone at or outside your institution evaluate your research activities	33.0%	40.0%	31.0%	29.0%	36.0%	46.0%	37.0%	
	No one evaluate your research activities	67.0%	60.0%	69.0%	71.0%	64.0%	54.0%	63.0%	
	Number of respondents	182	2143	365	842	610	609	4751	
Feature of the respondents' career									
⑧Age of obtaining their doctorate	Under 33 years old	4.7%	21.7%	29.1%	49.2%	24.8%	5.7%	24.3%	***
	Over 33 years old and under 40 years old	1.9%	14.5%	43.4%	21.8%	31.5%	12.4%	18.5%	
	Over 40 years old	2.5%	6.1%	16.6%	10.7%	19.9%	10.2%	9.5%	
	Don't have doctorate	90.9%	57.7%	10.9%	18.3%	23.8%	71.7%	47.6%	
	Number of respondents	364	2228	350	973	584	707	5206	
⑨Years for which worked at the places except the higher education institutions or research institutions	Average	2.50	1.96	1.73	1.89	2.30	2.73	2.10	***
	Number of respondents	288	2084	337	915	521	598	4743	
⑩Frequency of changing their universities	Average	1.11	0.23	1.10	0.58	0.70	1.20	0.55	***
	Number of respondents	305	2422	369	1034	589	453	5172	

Note: *** p<0.001

4. Results of analysis

To clarify which of the explanatory variables presented in Table 2 significantly determine the LNRP, a multi-regression analysis was performed.

The results are displayed in Table 4.

Table 4. Result of multiple linear regression analysis (Japan)

Variables	Analysis framework I standardized coefficients ß	t value	significance probability	Analysis framework II standardized coefficients ß	t value	significance probability
Dependent variables						
Research Productivity						
Independent variables						
Personal attributions and activities						
①Gender	0.130	3.130	**	0.114	2.684	**
②Age						
Age40	0.032	0.677		0.030	0.600	
Age50	-0.036	-0.754		-0.019	-0.349	
③Academic discipline						
Humanities & Social sciences	-0.139	-2.568	**	-0.120	-2.060	*
Natural sciences	-0.060	-1.111		-0.079	-1.375	
Engineering & Agriculture	0.038	0.668		0.028	0.467	
④Research funding in the previous three years	0.369	8.665	***	0.357	8.173	***
⑤Hours per week spend on research activities	0.087	2.150	*	0.085	2.068	*
Feature of university to which respondents belong						
⑥Institutional type						
TypeI	0.087	1.832	+	0.072	1.457	
TypeII	0.089	1.923	+	0.083	1.749	+
⑦Research evaluation	-0.036	-0.907		-0.022	-0.537	
Feature of the respondents' career						
⑧Age of obtaining their doctorate						
DocAge2032				0.176	2.421	*
DocAge3399				0.161	2.608	**
⑨Years for which worked at the places except the higher education institutions or research institutions				-0.012	-0.293	
⑩Frequency of changing their universities				0.007	0.180	
Note: + p<0.10, * p<0.05, ** p<0.01, *** p<0.001	R^2=0.258			R^2=0.268		

4.1 Overall trend

The significant variables which determined research productivity were "④ Research funding in the previous three years" and "①Gender" at the 0.1% level of significance and "⑤Hours per week spend on research activities" at the 5% level of significance.

Judging from the standardized regression coefficient, male faculty have higher LNRP scores and research funding and hours spent per week on research activities become higher so that the LNRP score became higher. This result was approximately the same as that clarified in Daizen and Kimoto (2013).

As a result of re-analyzing the determinants of research productivity by adding three career variables, the significant career variable which determined research productivity was "⑧Age of obtaining their doctorate" at the level of significance of 0.01. Judging from the standardized regression coefficient, if university professors didn't have a doctorate, their LNRP score became lower.

4.2 Comparison according to the country

Table 5 contains the result of analysis per country based on Analysis Framework 1. As in Japan, the number of research hours in Taiwan were meaningful variables of the productivity study and in Malaysia, the number of research hours and research funds were meaningful variables as well. Furthermore, in Malaysia research productivity of the university professor who worked in a Type I university and whose research activities are evaluated, was higher. Additionally in Cambodia and Vietnam, no variable significantly explained study productivity.

Table 5. The determinants of LNRP (By Country)

Variables	Cambodia	China	Taiwan	Malaysia	Vietnam
Dependent variables					
Research Productivity					
Independent variables					
Personal attributions and activities					
①Gender	.423	.015	.139	.009	.897
②Age					
Age40	.617	-.017	-.119	-.102	.425
Age50	.162	.037	-.148	.092	.114
③Academic discipline					
Humanities & Social sciences	-	.208 **	.176	-.074	-.722
Natural sciences	-	.037	.292	.083	-.262
Engineering & Agriculture	.056	.136 +	.078	-.160	-1.064
④Research funding in the previous three years	-.136	-.022	.106	.138 *	-
⑤Hours per week spend on research activities	-.319	.057	.280 **	.202 **	-.248
Feature of university to which respondents belong					
⑥Institutional type					
TypeI	.253	-.040	.064	.388 ***	-
TypeII	-	-.035	-.124	.152	-.104
⑦Research evaluation	-.057	-.038	.107	.221 ***	.140
Feature of the respondents' career					
⑧Age of obtaining their doctorate					
DocAge2032	-	-	-	-	-
DocAge3399	-	-	-	-	-
⑨Years for which worked at the places except the higher education institutions or research institutions	-	-	-	-	-
⑩Frequency of changing their universities	-	-	-	-	-
Note + p<0.10, * p<0.05, ** p<0.01, *** p<0.001	adjusted R^2= -.104	adjusted R^2= .011	adjusted R^2= .050	adjusted R^2= .268	adjusted R^2= -1.300

For Taiwanese and Malaysian university academic staffs, we analyzed determinants of research productivity by using the Analysis Framework 2 which added three carrier variables to Analysis framework 1. Table 6 is the result of the analysis. In both countries, the university academic staff who possessed a doctorate published research articles more than those who did not possess a doctorate. The same can be seen in Japan. In Taiwan, the person who acquired a doctorate at 32 years old or younger published more research papers, but, in Malaysia, the person who acquired a doctorate at 33 years old or more published more research papers. Furthermore, in Malaysia, university academic staff who had a long experience in a place other than a higher education system published more research papers.

Table 6. The determinants of LNRP (Malaysia)

Variables ／ Nation	Malaysia
Dependent variables	
Research Productivity	
Independent variables	
Personal attributions and activities	
①Gender	.047
②Age	
Age40	-.146 *
Age50	-.050
③Academic discipline	
Humanities & Social sciences	-.050
Natural sciences	.091
Engineering & Agriculture	-.170
④Research funding in the previous three years	.157 **
⑤Hours per week spend on research activities	.159 **
Feature of university to which respondents belong	
⑥Institutional type	
TypeI	.335 ***
TypeII	.114
⑦Research evaluation	.189 **
Feature of the respondents' career	
⑧Age of obtaining their doctorate	
DocAge2032	.165 +
DocAge3399	.367 ***
⑨Years for which worked at the places except the higher education institutions or research institutions	.192 **
⑩Frequency of changing their universities	-.099
Note + p<0.10, * p<0.05, ** p<0.01, *** p<0.001	adjusted R^2= .381

4.3 Results by age

Table 7 presents the result that clarified the determinants of LNRP according to the generation. The significant variable which was common in a

university academic staff under 44 years old and a university academic staff over 45 years old was "④Research funding in the previous three years". In addition, the significant variable which determined the LNRP was "⑧Age of obtaining their doctorate" which were only in a university academic staff and were over 45 years old.

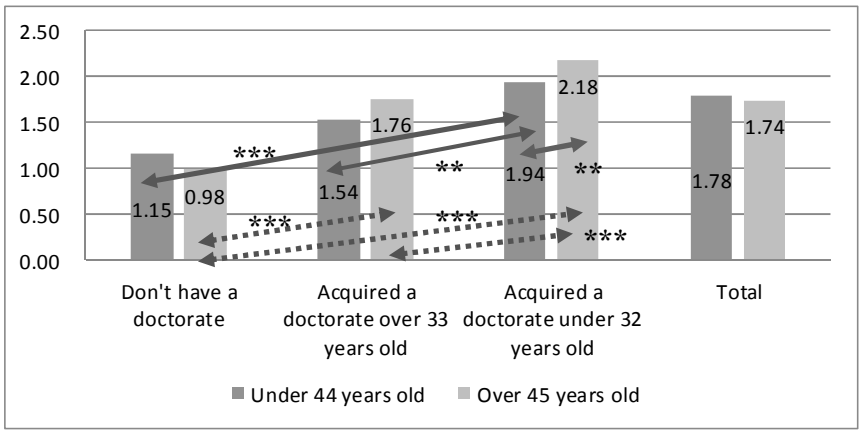
Table 7. Result of multiple linear regression analysis (Japan・By age)

	Under 44 years old			Over 45 years old		
Variables	**standardized coefficients** β	**t value**	significance probability	**standardized coefficients** β	**t value**	significance probability
Dependent variables						
Research Productivity						
Independent variables						
Personal attributions and activities						
①Gender	0.110	1.682	+	0.107	1.870	+
②Age						
Age40	0.044	0.644				
Age50				-0.058	-1.034	
③Academic discipline						
Humanities & Social sciences	-0.055	-0.671		-0.205	-2.388	*
Natural sciences	0.027	0.303		-0.174	-2.243	*
Engineering & Agriculture	0.218	2.381	*	-0.152	-1.899	+
④Research funding in the previous three years	0.233	3.505	***	0.425	7.344	***
⑤Hours per week spend on research activities	0.058	0.909		0.109	2.043	*
Feature of university to which respondents belong						
⑥Institutional type						
TypeI	0.039	0.491		0.128	1.973	*
TypeII	0.108	1.436		0.061	0.961	
⑦Research evaluation	0.007	0.121		-0.028	-0.532	
Feature of the respondents' career						
⑧Age of obtaining their doctorate						
DocAge2032	0.100	0.981		0.185	1.853	+
DocAge3399	0.083	0.879		0.213	2.607	**
⑨Years for which worked at the places except the higher education institutions or research institutions	-0.051	-0.828		0.028	0.489	
⑩Frequency of changing their universities	-0.013	-0.207		0.030	0.538	
Note: + p<0.10, * p<0.05, ** p<0.01, *** p<0.001	R2=0.182			R2=0.349		

Figure 4 shows the average of the LNRP by generation and doctorate acquisition age. There was no significant difference in the average LNRP of University academic staff between 44 years or younger and 45 years or older at 5% level of significance. The university academic staff who acquired a doctorate at 32 years old or younger published significantly more research papers than university academic staff who acquired a doctorate at 33 years old or more or the university academic staff who did not acquire a doctorate.

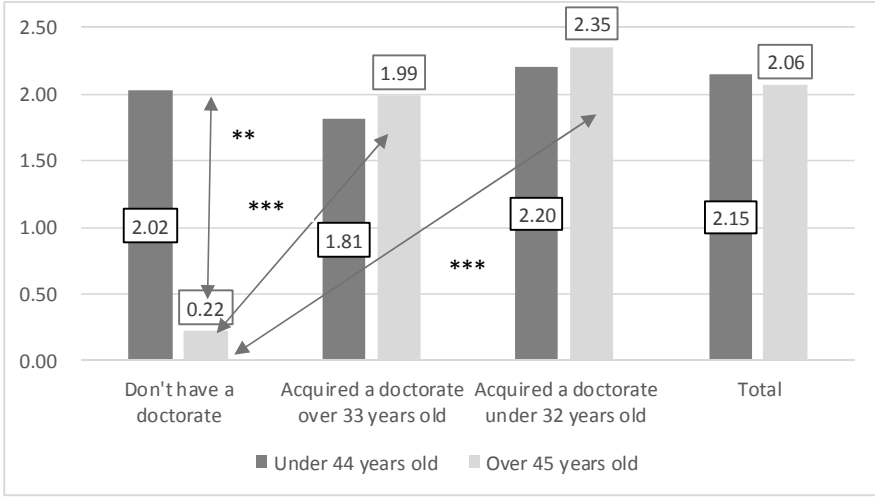
Among university academic staff who acquired a doctorate at 32 years old or younger, the average LNRP of the university academic staff 45 years or older was significantly larger than the average LNRP of those 44 years or younger. Perhaps this shows that the quality of university academic staff who acquired a doctorate dropped by conferring a doctorate on so many students.

Figure 4. Average of the LNRP according to the doctoral degree acquisition age



Note: * p<0.05, ** p<0.01, *** p<0.001

Figure 5. Average of the LNRP according to the doctoral degree acquisition age (Engineering & Agriculture)



Note: * p<0.05, ** p<0.01, *** p<0.001

Figure 5 shows the average LNRP for engineering and agriculture by generation and doctorate acquisition age. From this figure, two points became clear. First, the average number of research papers of university academic staff who did not have a doctorate was significantly smaller than the average number of research papers of those who had a doctorate in a group over 45 years old. Second, among the university academic staff who did not have a doctorate, those under 44 years old published significantly more research papers than those over 45 years.

Because the doctorate acquisition rate of young university academic staff became approximately 100% in the field of engineering and agriculture, the university academic staff who do not have a doctorate and are under 44 years old may become eager to earn a doctor degree which requires thesis writing.

Conclusion

Based on the Japanese data analysis, three points became clear.

(1) The significant variables which determined research productivity were "①Gender" and "④Research funding in the previous three years" at the 1% level of significance (Table 3).

(2) As a result of re-analyzing the determinants of research productivity by adding three career variables, the significant career variable which has significantly determined research productivity was "⑧Age of obtaining their doctorate" at the 1% level of significance (Table 3).

(3) But, only in the case of university academic staff over 45 years, "⑧Age of obtaining their doctorate" significantly determined the research productivity at the 1% level of significance (Table 6).

Next, based on the five Asian countries' data analysis, two points became clear.

(4) In Malaysia, "⑤Hours per week" was a significant meaningful variable of the research productivity at the 1% level of significance (Table 5).

Furthermore, in Malaysia, research productivity of university professors who worked in a Type I university and whose research activities are evaluated, was higher.

In addition, in Cambodia and Vietnam, no variable significantly explained research productivity.

(5) For Taiwanese and Malaysian university academic staffs determinants of the research productivity were analyzed by using the Analysis Fame II, "⑧Age of obtaining their doctorate" significantly determined the research productivity

(Table 5).

In both countries, university academic staff who possessed a doctorate published research articles more than university academic staff who did not possess a doctorate like Japan.

Furthermore, in Malaysia, university academic staff who had a long experience at any place other than a higher education system published more research papers.

From the aforementioned results, the determinants of research productivity may be considered as follows.

Research productivity is basically determined by the amount of research funds and the hours of research activities. It means that the quantity of research papers increases by investing significant research funds and many hours in research activities.

Furthermore, acquiring a doctoral degree at a younger age or not is a significant determinants of research productivity. Acquiring a doctoral degree at younger age shows others research ability is high and raises self-awareness as an excellent researcher. In addition, in Japan, male university academic staffs publish more research papers than female counterparts. Why this is so is a subject for future research.

In Malaysia, research productivity of university academic staffs become higher if the prestige of the university to which they belong is higher or their research activities are evaluated more strictly or the number of years that they worked at a university is longer. The higher prestige of the university to which they belong shows that their research ability is high and raises their self-awareness as an excellent researcher. In addition, more university academic staffs engage in research activities if their work is evaluated.

Particularly in fields of applied study such as the social science, engineering, agriculture, medicine, university academic staffs recognize many research theme clearly by having worked for many years at a university and they raised research productivity. Malaysian university academic staffs have the highest ratio to belong to applied disciplines than the university academic staffs of the other five countries.

Finally, in neither Japan nor Malaysia, the extent of movement of university academic staffs was the significant explanation variable of research productivity. Instead of the number of movements of university academic staffs or teachers, the way of the movement of them is an important factor of their research productivity. It is a future examination topic.

The following two problems are recognized from this analysis. Firstly, the

explanatory framework of research productivity which was set for Japanese university academic staff, is of value in explaining Malaysian academics' research productivity only. However, it is not so for explanation of research productivity of Taiwanese, Cambodian, Chinese and Vietnamese university academic staff.

Secondly, it is necessary to reexamine the significant explanation variables by using the new explanation framework of research productivity which was based on the new explanation variable treated in recent studies. For example, as a new variable, Academic inbreeding (Smyth & Mishra, 2014); Career stage (Jung, 2014); Graduate training (Eloy *et al.*, 2012; Su, 2011); Size (Abramo, 2012); Foreign-born faculty (Webber, 2012); Research ranking or Department prestige (Aminpour, 2012; Su, 2011) are assumed. Future studies on research productivity of university academic staff is expected on the basis of these problems.

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Conclusion

What is a Mature University in this Competitive World?

Yumiko Hada*

Professor Cummings, in his keynote address, focused on the strength of the state and the university academic system, which is a key element in forecasting the future of our universities and how they should stand in relation to future society. As Pham Nghi of Vietnam stated, the state should be the guardian and have a steering role for universities, by setting the general aims and providing funding to stimulate good performance. In previous times, Humboldt also thought our educational system should be free from government control to allow it to pursue the ultimate power of human beings. Nowadays, the environment of all universities has greatly changed (Figure 1).

Taking all these thoughts together, the maturity of the academic system can be regarded as the final stage of a university and one of the most democratic stages. And the mature and democratic university should exist in a system that exhibits openness and moderate governance.

The APA project was a follow-up study to the previous CAP project: the Changing Academic Profession project. Although five countries, China, Japan, Korea, Malaysia, and Hong Kong, were included in the CAP survey and some similar questions were derived from the CAP questionnaire in the APA survey, we still believe that it would be more relevant and important for the Asian academics to form a research team and to launch a project focused on Asia's academy. For the past four years, we have explored issues concerning Asia's academy from our own perspective by incorporating numerous new questions in the APA survey. However, as noted earlier, the legacy and impact of the CAP is so considerable and so significant in our APA project, more time is devoted to

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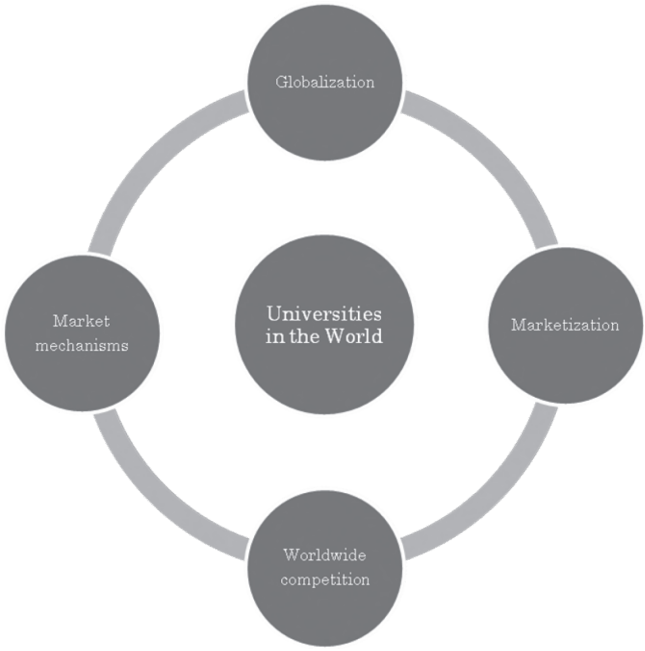
the presentation and discussion of major findings and observations from the CAP survey. These findings may provide an in-depth understanding of what has been achieved in the APA study and what issues to be addressed in future.

Therefore, this summary of the CAP 19 countries is based on the perspective of the maturity of the academic system, judged by "Openness" and the "Moderate Governance System". In terms of openness, one has to consider gender and mobility. For moderate governance, one considers a system that is not purely top-down, upholds academic freedom, and has communication between administrators and faculty members. That is, if a university is mature, the system in the university will be open and the governance will be moderate; academic freedom will be high, and collegiality will be good.



Source: Created by the author (2012)

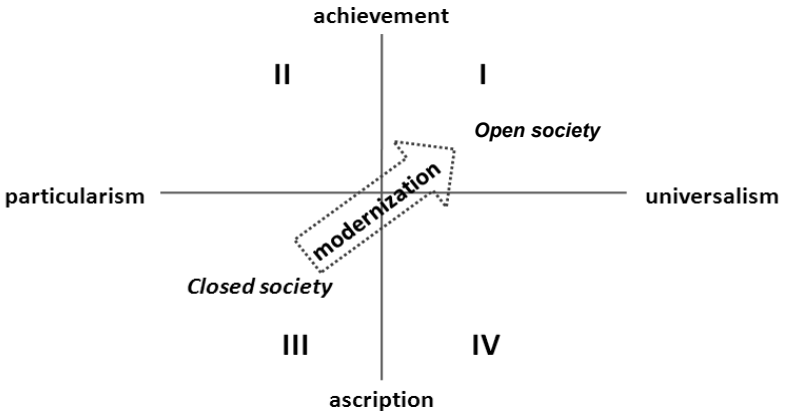
Figure 1. World universities in environmental changes

1. Hypotheses I ⇒ Openness

As can be seen in Figure 2, Professor Arimoto stated that, in a modern university, there is movement from a closed system to an open one, from Quadrant III to Quadrant I. This process of modernization will be fundamental

for our universities in the future.

To judge the openness of universities in a country, we think the following two indexes are very useful: Gender and Mobility. In an open society, the academic profession generally moves toward dealing equally with all academics, male and female. The gender balance in our academic world is very important.



Source: Akira Arimoto (2011, p.24)

Figure 2. Pattern of modernization from closed to open society

1-1. Gender

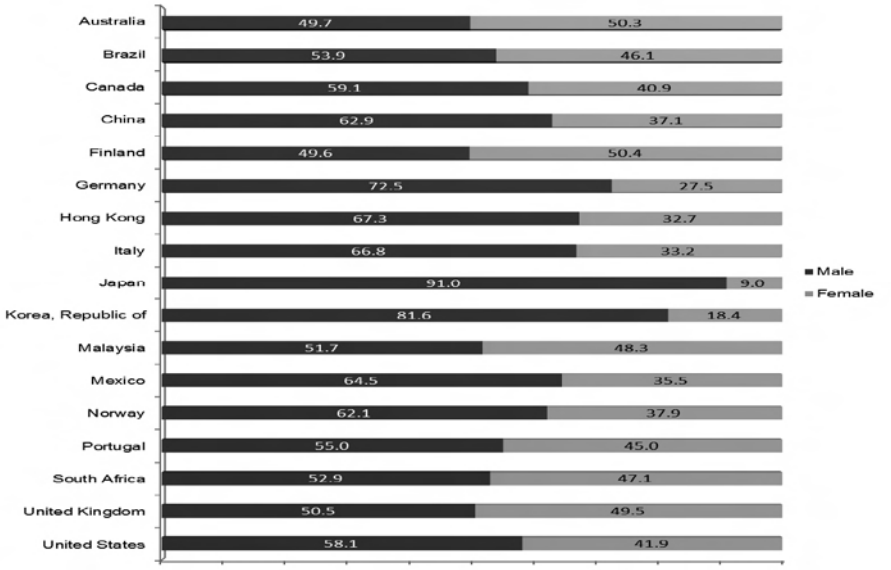
In Australia, Finland, Malaysia, South Africa, and the United Kingdom the percentage of male and female academics is almost equal. On the other hand, in Japan the treatment of female academics as seen in their small number and low status compared to their male counterparts tells a different story. As Figure 3 reveals, among the CAP respondents the proportion of 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).

1-2. Mobility

Although one must always think about balance, in an open society, academic mobility is relatively high. Phenomena such as lack of mobility, inbreeding, and unchangeable status in the institutional hierarchy are more likely to occur in a closed society.

As for mobility, academics, on average, over the whole CAP sample, have been employed in approximately two institutions (1.94) during their academic

careers. Those in the United States (2.62) have the highest average followed by Argentina (2.57) and Canada (2.49); China (1.28) has the lowest followed by Malaysia (1.48) and Portugal (1.55).



Source: Akira Arimoto (2011, p.25)

Figure 3. Gender by country

2. Hypotheses II ⇒ Moderate Governance

Following various environmental changes, globalization, marketization, worldwide competition, and especially market mechanisms have spread worldwide and as a result the rationalization and bureaucratization of academia and top-down administration and management structures have become increasingly widespread.

However, in the United Kingdom there are three general societal beliefs: government intervention in education as dangerous; government power should be limited; and people will support the voluntary spirit of education. Then the power of both central and local governments is strictly limited in the educational system.

Therefore, more moderate governance, the opposite of rigorous governance, is considered to be an element of the maturity of an academic system. As

demonstrated in Table 1, maturity can be seen in the six items: Mobility, Top-down Management, Communication, Collegiality, Cooperation with staff, and Academic freedom and in Gender balance, which is kept in Australia, Finland, Malaysia, South Africa, and the United Kingdom.

① As for Mobility, Argentina, Australia, Canada, the United Kingdom and the United States are high.
② As for Management, Hong Kong and Norway are the typical top-down type, as are Argentina and Brazil, while China, Japan, Malaysia, South Africa, the United Kingdom and the United States are rather bottom-up type or shared governance type, and Australia is the most anti-top-down style.
③ As for Communication, Malaysia is in the best condition, and Argentina, Brazil, and Mexico are also in good condition, while Australia, Germany, Japan, Korea, and the United Kingdom seem not to have achieved mutual understanding.
④ As for Collegiality, Mexico is the highest and Argentina, Canada, Japan, and Malaysia are comparatively high, while Italy is the lowest and Australia, Korea, and South Africa are also low.
⑤ As for Cooperation with staff, Japan is the highest and Canada, China, and the United States are high, while again Italy is the lowest.
⑥ As for Academic freedom, Mexico, Argentina, Canada, Japan and the United States are high in comparison to Finland, Germany, *etc.*

Now, two points are assigned to the top positions (◎), 1 point to upper level positions (○), 0 point to intermediate level positions (no mark), −1 point to lower level positions (×), and −2 points to the lowest positions (●) by order of ranking. As a result, Table 1 was calculated as follows (Table 2).

Figure 3 contains the proportion of female academics in individual countries. While the difference between the highest proportion of female academics in Finland (50.4%) and the lowest proportion of female academics in Japan (-9.0%) is calculated, the result is 41.4%. Namely, 50.4 (Finland)−9.0 (Japan)=41.4. The result is divided into several equal parts − -3, -2, -1, 0, 1, 2, 3, and 7. The proportion of seven equally-divided parts amounts to 5.9. Therefore, the proportion of female academics in each country is divided into several groups by 5.9 from -3 to 3. These are shown in Table 2. Because no data of the proportion of female academics is provided in Argentina, it is 0.

Table 1. Traits of the AP in 18 countries

	Country / Item	AR	AU	BR	CA	CH	FI	DE	HK	IT	JP	KR	MY	MX	NO	PT	ZA	UK	US
Openness	**Mobility**	○	◎		○	×			○	×	×		×	×		×		○	○
	Desire to transfer	●	○	○		×		○			◎		○	×				○	○
	Student-teacher ratio		○								×		◎	●		○		○	
	Contract system	◎	○	●			○	○	○		×	○	×	×		○	×	×	
Moderate Governance	**Top-down type**	○	●	○		×			◎		×		×		◎		×	×	×
	Communication	○	×	○				×			×	×	◎	○			●	×	
	Collegiality	○	×		○					●	○	×	○	◎			×		
	Cooperation with staff				○	○	×	×		●	◎	×				×	×		○
	Academic freedom	○			○		●	×			○			◎	×		×		○

Note1: AR: Argentina, AU: Australia, BR: Brazil, CA: Canada, CH: China, Fl: Finland, DE: Germany, HK: Hong Kong, IT: Italy, JP: Japan, KR: Korea, MY: Malaysia, MX: Mexico, NO: Norway, PT: Portugal, ZA: South Africa, UK: United Kingdom, US: United States

Note2: ◎ ranked at top, ○ ranked at upper level, × ranked at lower level, ● ranked at bottom

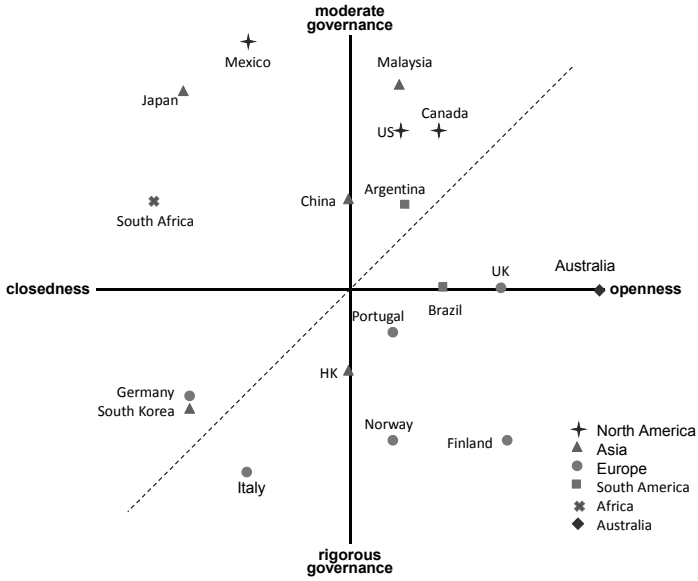
Source: Created by the Author based on A. Arimoto (2011)

Table 2. Calculation of points

	AR	AU	BR	CA	CH	FI	DE	HK	IT	JP	KR	MY	MX	NO	PT	ZA	UK	US
Gender	0	3	2	1	1	3	-2	-1	-1	-2	-2	2	-1	1	2	2	2	1
Mobility	1	2	0	1	-1	0	0	1	-1	-1	0	-1	-1	0	-1	0	1	1
Total Point	1	5	2	2	0	3	-2	0	-2	-3	-2	1	-2	1	1	2	3	2
Top-Down	-1	2	-1	0	1	0	0	-2	0	1	0	1	0	-2	0	1	1	1
Communi-cation	1	-1	1	0	0	0	-1	0	0	-1	-1	2	1	0	0	-2	-1	0
Collegiality	1	-1	0	1	0	0	0	0	-2	1	-1	1	2	0	0	-1	0	0
Cooperation with Staff	0	0	0	1	1	-1	-1	0	-2	2	-1	0	0	0	-1	-1	0	1
Academic Freedom	1	0	0	1	0	-2	-1	0	0	1	0	0	2	-1	0	-1	0	1
Total Point	2	0	0	3	2	-3	-3	-2	-4	4	-3	4	5	-3	-1	-4	0	3

Source: Created by the Author (2012)

And when these points are placed in order in the graph, the result is shown in Figure 4. The vertical line is Moderate Governance, and the horizontal line is Openness.



Source: Created by the Author (2012)

Figure 4. Maturity of the academic system

As stated in the beginning, the maturity of the academic system is judged as the final stage of a university and one of the most democratic stages for all universities. This maturity of the academic system is assessed by "Openness" and "Moderate Governance System".

It is sad to say, however, an ideal system cannot be found in any country. It was believed that the United Kingdom could stay in an ideal position in Figure 4 because of the three general beliefs that:

Government intervention in education is dangerous;
Government power should be limited; and
People will support the voluntary spirit of education.

However, the United Kingdom stays rather under rigorous governance. On the contrary, almost all European countries tend to be under rigorous governance, and almost all Asian countries display moderate governance comparatively. It

is important to know where each university stands, then one can determine how to form a strong university and from that position one can move on. And furthermore the important viewpoint should be made that these observations are national frameworks and national averages, while what really counts for institutions and for students is the position of their own university.

Finally, it will be important to know how much variety is possible within each national system, and which strategies are most effective to make one's own university excellent within that national framework. In the international scene, as universities are increasingly active globally, and moving beyond the national framework.

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Appendices

Appendix 1: Conference Program*

The Changing Academic Profession in Asia
The Formation, Work, Academic Productivity, and Internationalization of the Academy

Date: January 24-25, 2014
Venue: Hiroshima Garden Palace

Friday, January 24

8:30 - Registration

***** Opening Ceremony *****

9:00 - 9:15 **Opening Remarks**
Fusahito Yoshida, Executive and Vice President (Research), Hiroshima University, Japan
Masashi Fujimura, Director & Professor, Research Institute for Higher Education, Hiroshima University, Japan
Akira Arimoto, President's Adviser, Director and Professor of Research Institute of Higher Education, Kurashiki Sakuyo University / Professor Emeritus of Hiroshima University, Japan

9:15 - 9:25 **Orientation**
Futao Huang, Professor, Research Institute for Higher Education, Hiroshima University, Japan

***** Keynote Speeches *****

Chairs:
Shinichi Yamamoto, Professor, Graduate school of Higher Education Administration J. F. Oberlin University / Professor Emeritus of Hiroshima University, Japan
Fumihiro Maruyama, Professor, Research Institute for Higher Education, Hiroshima University, Japan

9:25 - 10:05 **Keynote Speech 1**
"Institutionalization of R-T-S Nexus in the Academic Profession: From an International Comparative Perspective"
Akira Arimoto, President's Adviser, Director & Professor of Research Institute for Higher Education, Kurashiki Sakuyo University / Professor Emeritus of Hiroshima University, Japan

10:05 - 10:45 **Keynote Speech 2**
"Strong States, Strong Systems"
William K. Cummings, Professor of International Education, The

* As of January, 2014

Graduate School of Education and Human Development and The Elliott School of International Affairs, The George Washington University, USA

10:45 - 11:00 Coffee Break

***** Session 1: Rewards & Internationalization of the Academy *****

11:00 - 11:30 **Presentation 1: Cambodia**
"Quality of Teaching and Research at Higher Education Institutions in Cambodia"
Yuto Kitamura, Associate Professor, Graduate School of Education, The University of Tokyo, Japan
Naoki Umemiya, JICA Expert (University Administrative Management), Malaysia-Japan International Institute of Technology(MJIIT), Malaysia / Japan

11:30 - 12:00 **Presentation 2: Japan**
"The Internationalization of the Academy in Asia: Major Findings from the International Survey"
Futao Huang, Professor, Research Institute for Higher Education, Hiroshima University, Japan

12:00 - 12:30 Discussion

12:30 - 13:30 Lunch

***** Session 2: Formation of the Academy *****

Chairs:
Keiichiro Yoshinaga, Associate Professor, Center for Higher Educational Development, Tokyo University of Agriculture and Technology, Japan
Satoshi P. Watanabe, Professor, Research Institute for Higher Education, Hiroshima University, Japan

13:30 - 14:00 **Presentation 3: China**
"The Formation of the Academy in China"
Fengqiao Yan, Associate Dean & Professor, Graduate School of Education, Peking University, China
Lu Li, Doctoral Student, Graduate School of Education, Peking University, China

14:00 - 14:30 **Presentation 4: Malaysia**
"Career Prospects of Malaysian Academics"
Aida Suraya Md. Yunus, Professor, Director of Centre for

Academic Development, Universiti Putra Malaysia, Serdang, Selangor, Malaysia / Fellow, National Higher Education Research Institute, Penang, Malaysia

14:30 - 15:00 Discussion

15:00 - 15:15 Coffee Break

15:15 - 15:45 **Presentation 5: Vietnam**
"Academic Career Development in Vietnam"
Thanh Nghi Pham, Professor, Institute of Psychology, Vietnam Academy of Social Sciences, Vietnam

15:45 - 16:15 **Presentation 6: Japan**
"Formation of Academic Profession in A Matured Higher Education System"
Akiyoshi Yonezawa, Associate Professor, Graduate School of International Development, Nagoya University, Japan

16:15 - 17:00 Discussion

18:00 - 20:00 Reception at Hiroshima Garden Palace

Saturday, January 25

8:30 - Registration

***** Session 3: Work & Academic Productivity of the Academy *****

Chairs:
Reiko Yamada, Professor, Faculty of Social Studies Department of Education and Culture, Doshisha University, Japan
Khieu Vicheanon, Deputy Secretary General, Cambodian Accreditation Committee, Cambodia

9:00 - 9:30 **Presentation 7: Singapore**
"The Global City and Singaporean Universities: The making of academic lives"
Kong Chong Ho, Assosiate Professor, National University of Singapore

9:30 - 10:00 **Presentation 8: Taiwan**
"The Impact of Research Productivity on Higher Education in Taiwan"
Robin Jung-Cheng Chen, Assistant Professor, National Chengchi University, Department of Education, Taiwan
Ching-Shan Wu, Director-General, K-12 Education Administration, Taiwan

10:00 - 10:30	**Presentation 9: Japan** "The Career and Academic Productivity of the Academic Profession: The Similarity and Difference of Six Nations in Asia" Tsukasa Daizen, Professor, Research Institute for Higher Education, Hiroshima University, Japan
10:30 - 10:45	Coffee Break
10:45 - 11:30	Discussion
11:30 - 11:50	**Concluding Remarks** Yumiko Hada, Professor, Research Institute for Higher Education, Hiroshima University, Japan
10:50 - 11:00	**Closing Speech** Akira Arimoto, President's Adviser, Director and Professor of Research Institute for Higher Education, Kurashiki Sakuyo University / Professor Emeritus of Hiroshima University, Japan

Appendix 2: List of Participants*

OVERSEAS PARTICIPANTS

Invited Experts

Cambodia

Khieu Vicheanon	Deputy Secretary General, Cambodian Accreditation Committee

China

Fengqiao Yan	Associate Dean & Professor, Graduate School of Education, Peking University
Lu Li	Doctoral Student, Graduate School of Education, Peking University

Malaysia

Aida Suraya Md. Yunus	Professor, Director of Centre for Academic Development, Universiti Putra Malaysia, Serdang, Selangor / Fellow, National Higher Education Research Institute, Penang

Singapore

Kong Chong Ho	Associate Professor, National University of Singapore

Taiwan

Ching-Shan Wu	Director-General, K-12 Education Administration
Ling-Yi Wang	Assistant Research Fellow, National Academy for Educational Research
Robin J. Chen	Assistant Professor, National Chengchi University, Department of Education

Vietnam

Thanh Nghi Pham	Professor, Institute of Psychology, Vietnam Academy of Social Sciences

USA

William K. Cummings	Professor of International Education, The Graduate School of Education and Human Development and The Elliott School of International Affairs, The George Washington University

and another 5 overseas participants

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* As of January, 2014

JAPANESE PARTICIPANTS

Vice-President

Fusahito Yoshida	Executive and Vice President (Research), Hiroshima University, Japan

Invited Experts

Akira Arimoto	President's Adviser, Director and Professor of Research Institute of Higher Education, Kurashiki Sakuyo University / Professor Emeritus of Hiroshima University
Akiyoshi Yonezawa	Associate Professor, Graduate School of International Development, Nagoya University
Keiichiro Yoshinaga	Associate Professor, Center for Higher Educational Development, Tokyo University of Agriculture and Technology
Naoki Umemiya	JICA Expert (University Administrative Management), Malaysia-Japan International Institute of Technology (MJIIT)
Reiko Yamada	Professor, Faculty of Social Studies Department of Education and Culture, Doshisha University
Shinichi Yamamoto	Professor, Graduate school of Higher Education Administration J. F. Oberlin University / Professor Emeritus of Hiroshima University
Yuto Kitamura	Associate Professor, Graduate School of Education, The University of Tokyo

Research Institute for Higher Education（RIHE）

Masashi Fujimura	Director and Professor
Tsukasa Daizen	Professor
Futao Huang	Professor
Fumihiro Maruyama	Professor
Yumiko Hada	Professor
Satoshi P. Watanabe	Professor
Jun Oba	Associate Professor
Masataka Murasawa	Associate Professor
Kazunori Shima	Associate Professor

and another 24 Japanese participants

R.I.H.E. PUBLICATION IN ENGLISH

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No. 1: Kaneko, M. (1987). *Enrollment Expansion in Postwar Japan*.
No. 2: Guocai, Z. (1989). *Higher Education Research in China: An Annotated Bibliography*.
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