

Dilemmas of Expansion: The Growth of Graduate Education in Malaysia and Thailand

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Abstract

Faced with escalating demand for instructional staff to serve the expanding undergraduate enrolments, many middle income countries in Southeast Asia are investing heavily in expanding their provision of graduate education. An attractive secondary benefit is that graduate programmes contribute to a local university-based research capacity that governments believe will result in a positive economic return to the country. This paper presents the results of a case study of the dynamics associated with growth of graduate education in the two countries that lead the region in the development of graduate education, Malaysia and Thailand. The study further elaborates the reasons that higher education institutions in these two countries are expanding their graduate-level programmes, how the growth of graduate education is affecting the professional lives of the faculty members and administrators leading those programmes, and elaborates institutional-level issues associated with this expansion.

Keywords: graduate education, accountability, university rankings, publication

1. Introduction

Higher education enrolments across Asia have experienced explosive growth over the last 20 years, the result of increasing school participation rates, increasing levels of affluence, and the perceived importance of advanced education in subsequent life opportunities (Asian Development Bank, 2011). To accommodate these enrolment increases, higher education systems have had to “*expand out*” by constructing new universities, hiring new faculty members, and allowing and encouraging the entry of private higher education providers. Particularly in middle income countries across the region, this, in turn, has required that higher education systems “*expand up*”. Faced with escalating demand for instructional staff to serve the increased number of public and fast emerging private higher education institutions, countries have expanded their provision of graduate education (master’s and doctoral programmes). From the perspective of many governments, expanding graduate education has an attractive secondary benefit. Many governments see universities as centers of research that will yield positive economic returns to the country. University research is typically done mainly at the graduate level. Hence, expanding graduate education is viewed as a means of increasing the economic competitiveness of the country.

In many countries, decisions regarding the appropriate balance between the government’s choices to invest in top-tier research universities and to invest in upgrading a wider set of weaker institutions are controversial. A recent Asian Development Bank (2011) study argues that governments should direct more of their resources to second tier (regional public) and third tier (largely private) colleges and universities rather than concentrate resources on top-tier universities seeking to be world-class institutions. Others view the investment in top-tier research universities as playing an essential role in national development (Altbach, 2013). Most governments in the region believe that a top-tier university is an international signal of modernity, a source of economic return to the country, and a necessary component of their higher education systems.

To the extent these agendas vie for the same financial and human resources, expanding up and expanding out operate as competing agendas. While observers understand that both are necessary if quality higher education is to be available to the growing numbers of students, there is less agreement as to the appropriate balance between these agendas. While this balance may vary from country to country, the premise of this study is that there are

key policy issues that need to be considered as governments seek their own balance in the allocation of their education resources. To that end, the purposes of this study were (a) to further elaborate the reasons that selected governments and universities are expanding their graduate-level programmes and (b) to identify the issues that education and government leaders believe are key factors in their decisions about expanding graduate enrolments, ensuring a qualified instructional staff to teach them, and promoting university-based research.

This study was conducted as a focused case study of two middle-income countries that lead Southeast Asia in the development of graduate education, Malaysia and Thailand. Both countries have experienced rapid growth in undergraduate enrolments, both have developed an extensive network of public colleges and universities, both have also embraced the expansion of private higher education as a way to help absorb social demand for higher education, and both have aggressively expanded their graduate programmes. Both countries have highly respected universities. In both countries, government and education leaders operate from carefully considered rationale regarding the value and anticipated payoffs from expanding graduate level education.

At the same time, these two neighboring countries differ in nuanced but important ways in the outcomes they seek, the strategies they use, and the issues they have encountered as their higher education systems have “expanded up”. While both countries lead the region in the provision of graduate education, their dominate rationale and primary strategies for doing so diverge. The level of financial and administrative autonomy available to their top universities differs between countries. Consequently, these two countries offer particularly useful settings in which to investigate the different rationale and approaches that underlie governments’ investment in graduate education.

2. Conceptual Framework

This study was grounded in the framework offered by Galal (2002), as elaborated by Welmond (2008) and Chapman and Miric (2009) which posits that effective educational practice (graduate education, in this case) requires attention to three dimensions. First, education needs to be understood as a production function in which the quantity and quality of inputs determine educational outcomes. When outcomes are unsatisfactory, the solution is to increase the quantity of inputs, improve their quality, or change their mix. In the case of graduate education, expansion depends on a sufficient flow of resources, e.g., interested students, qualified instructional staff, adequate research facilities, and operating funds. However, while inputs are necessary, their presence is not sufficient to ensure the success of graduate-level training (Chapman, Austin, Farah, Wilson, & Ridge, 2014). They have to be used well.

Second, then, Galal (2002) argues that managers need to motivate individuals in the organization to utilize those inputs in productive ways. From this perspective, successful graduate education can be seen as a principal-agent problem. The principal (e.g., ministry of higher education officials, university administrators) is interested in particular outcomes (such as raising a university’s research productivity) but has to rely on agents (e.g., university administrators, instructional staff and students) to obtain these outcomes (Lane & Kivisto, 2008). The challenge, then, is for individuals at one level of the system to get individuals at a different level of the system to act in desired ways. This is accomplished through the application of incentives in combination with an accountability system to ensure that incentives only go to those who deserve them (Lane & Kivisto, 2008). Hence, an effective accountability system is a necessary condition to effective operation of the higher education system.

While properly targeted incentives and clear accountability are essential, higher education leaders face another dilemma. Finding appropriate indicators of faculty performance on which to hold them accountable can be challenging. Some of the valued behaviours, such as good teaching, are not easily visible to university administrators. Others, such as research, may be in technical areas beyond the expertise of administrators to assess. Administrators, then, may have only second-hand knowledge of how instructors perform in the confines of their classrooms or laboratories, making it difficult to allocate incentives in a timely and accurate way. Consequently, in a third dimension, Galal argues that a way to address this lack of first-hand information is for administrators to decentralize significant aspects of the responsibility for assessing the actions of faculty members, either to the faculty members themselves or to others better able to judge performance. The premise is that instructional staff members have a better understanding of the quality of their immediate colleagues’ work than do administrators who are typically farther away from the classroom or laboratory action (Chapman et al., 2014). In summary, this framework highlights the need to understand the adequacy of resources, the incentive and accountability systems that are intended to motivate personnel to use these resources well, and the appropriateness and adequate functioning of the accountability system.

3. Methodology

During May 2013, a total of 51 interviews were conducted with administrators and faculty members at four public research universities in Malaysia and three in Thailand, central government officials responsible for higher education across the two countries, and officials across two international organizations working in the area of higher education, as detailed in Table 1. The statistical profiles of those research universities can be found in Table 2. The semi-structured interviews were about 45 minutes in length and elicited information in nine areas as detailed in Figure 1. Interviewers kept contemporaneous notes and interviews were recorded. Thematic analysis was used to identify main findings. Findings are organized in terms of the major dimensions of Galal's framework: (a) sufficiency of inputs, (b) incentives and accountability, and (c) decentralization of oversight.

Table 1. List of number of interviewees and their functions

Function	Malaysia	Thailand
University administrators	17	10
University faculty	3	3
Government officers	3	12
International organizations	0	3
Total	23	28

Table 2. Statistical profiles of research universities involved in this study

University	Undergraduate (000)	Graduate (000)	Ratio of undergraduate to graduate
Universiti Kebangsaan Malaysia (2011)*	15	10	1.5: 1
University of Malaya (2013)	13	11	1.2:1
Universiti Putra Malaysia (2013)	14	10	1.4:1
Universiti Sains Malaysia (2011)	19	9	2.0:1
Chulalongkorn University (2013)	25	13	1.9:1
Mahidol University (2010)	18	8	2.1:1
Suranaree University of Technology (2011)	10	2	6.1:1

Note. * School years are presented in parentheses.

- 1) What are the government's expected outcomes for investing in graduate education?
- 2) In your view, what are regarded as the main trade-offs between the expansion of undergraduate and graduate education? To what extent is the expansion of graduate education seen as a priority in your country/university?
- 3) What are the sources of instructional staff for graduate programmes?
- 4) What are the manners of evaluating graduate school faculty for promotion? How does your university hold individual faculty accountable?
- 5) In your view, how much emphasis is placed on research (as opposed to teaching)?
- 6) What are the main sources of funding to support university-based research? How does the commercialisation of university-based research work?
- 7) What is the link between your university and the private sector?
- 8) How is graduate education financed at this institution/country?
- 9) What type of employment do most of your graduate students pursue after graduation?

Figure 1. Areas of inquiry during the interviews

4. Findings

4.1 Motivation for Increasing Graduate Education

In both Malaysia and Thailand, government and education officials see the development of graduate education as contributing to national economic development, but in somewhat different ways. In Malaysia, interviewees saw a fairly direct line between the expansion of graduate education and national economic development. Multiple interviewees cited the Korean model as one which Malaysia seeks to emulate. The model emphasizes substantial investment in education as a means of building an educated workforce in the expectation that evidence of an educated workforce, in turn, will attract international investment. This international investment would, then, fuel the economic development of the nation. To this end, the universities' interest in gaining international recognition and prestige is more than cosmetic; there are national economic benefits to be gained.

Malaysian interviewees pointed out that, for the investment in graduate education to yield the desired payoffs, top universities not only had to be good, but they had to be widely seen to be good by the international community. In the view of many, the benefits of upgrading the higher education system will only be achieved as prospective students choose to study in Malaysia, as business and industry locate in Malaysia, and as international investors see the country as offering a high quality setting for their investment. A widely noted metric of higher education excellence is international university rankings. Consequently, university personnel were quite concerned about their university's placement in these rankings. High rankings were viewed as a way to earn international respect, justify government investment in their institutions, and recruit students and faculty. Since publication rates are a key ingredient in most commonly used university ranking formula, pushing faculty to increase their publication in top-tier international journals was viewed by many interviewees as an important strategy for gaining the desired international attention.

One Malaysian interviewee summed up this thinking about the importance of rankings in an analogy: The performance of a nation's football team in international competition tends to be the basis on which observers judge the football prowess of the entire country. If the national team does poorly, the presumption is that football skills across the entire country are weak. If the national team does well, the presumption is that there is wider football strength in the country. The image of the whole country is based on the perception of a few. If Malaysia wants to be seen internationally as a top academic destination, the top universities need high rankings to establish that image.

In Thailand, university personnel took a somewhat more benign view. They also valued high international rankings for their universities and believed that higher rankings would earn international respect and attract top students. There was concern over the last five years that Thai universities dropped in their standing on these international rankings. Expanding graduate education was seen as helping to offset this decline through their research publications, but also through the skill sets graduates took with them into their subsequent employment. While there was a widespread sense among interviewees that rankings were important, the relevance of graduate education and university-based research to Thai society was also important. Indeed, interviewees expressed considerable ambivalence about the value of publishing in top-tier international journals. Since most international journals are published in English, research findings in these journals would be largely inaccessible to Thai citizenry, most of whom do not understand English. There was a strong view that it was important for the universities to "give back" to the Thai society for the financial support that the universities had received and that publishing in English would not necessarily achieve this. In short, local relevance was often valued over international rankings.

4.2 Provision of Inputs

Viewed through the lens of Galal's framework, governments in both countries have made significant financial commitments to supporting the expansion of graduate education. In Malaysia, the government wants to have their own indigenous research capability and not rely too much on industrial research undertaken by foreign companies. To that end, since 2007 the government has assigned a priority to enlarging the country's capacity to offer graduate education, as explicated in the *National Higher Education Strategic Plan Beyond 2020*. The government would like to accelerate the production of doctorates. There are about 21 000 PhD holders in Malaysia; the government's goal is to produce 100 000 PhD holders (including locally trained, overseas trained, and split-programmes with foreign universities) by 2020.

To help accomplish this, the Malaysia government has been generous in providing inputs to graduate education. In 2008, the Ministry of Higher Education (MoHE) designated four universities as Research Universities, and it later added a fifth university to this group and directed special funds to assist those institutions to expand their graduate-level research and teaching facilities. Between 2008 and 2009, these five research universities received

an increase of approximately 71% in funding from the government (World Bank, 2011). Additionally, the government has allocated another 500 million ringgit (US\$155 million) to finance graduate education. It also created a high-impact research fund of 590 million ringgit (US\$183 million) over five years. These investments are reflected in enrolment growth at the graduate level, increasing four-fold, from about 21,100 in 2000 to 85,200 in 2010.

The Thai government is also committing significant resources to expanding graduate education. It recently categorized its existing higher education institutions into four types: (a) research and postgraduate universities; (b) specialized (e.g., science & technology) and comprehensive universities; (c) four-year universities and liberal arts colleges; and (d) community colleges. Government funding is allocated in line with their different missions (OHEC, 2013). Research and graduate universities focus on offering graduate degree programmes (especially doctoral) and producing researchers. In 2009, the Office of Higher Education Commission (under the Ministry of Education) initiated National Research Universities Project with additional budget of baht 12 billion (about US\$ 370 million) during 3-year fiscal period 2010-2012 (OHEC, 2010). Currently, nine universities are selected for this project. The project was initiated based on the government's belief that Thailand's competitiveness in research is a significant indicator of the production of and quality of human resources (Rungfamai, 2011). These universities are expected to produce research that can be transferred and generate income for communities and industries. Additionally, these research universities are expected to achieve high ranking in world university rankings and help Thailand to become the Association of Southeast Asian Nations (ASEAN) Education Hub (OHEC, 2010).

While funding is an important input, it is how those funds are converted to other types of inputs (e.g., how the money is spent) that determines the quality of graduate education in these countries. Two of the main expenditures are for students and instructional staff.

4.2.1 Students as Inputs

In both countries, interviewees indicated that their universities had ambitious plans for increasing the overall number of graduate students and the proportion of graduate relative to undergraduate students. In both countries, graduate programmes recruited domestic students from those completing their undergraduate work at their own university or from other universities in their country. Given the increase in undergraduate enrolment over the last few years, there appeared to be a sufficient number of students interested in continuing their education at the graduate level. However, recruitment was often linked to funding; students enrolled when funding was available. That funding could come from government scholarships, university scholarships, faculty members' funded projects, or students' own resources.

In Malaysia, the costs of graduate study in most programme areas are highly subsidized by the government. That is somewhat less true in Thailand. A reflection of this is that Malaysian government expenditures on higher education *per capita* are twice the level of Thailand (UNESCO-UIS, 2014). Thai universities have a broader resource base and more administrative autonomy than their counterparts in Malaysia. They receive only limited financial support from the Thai government and the universities in this study generate a considerable amount of their own funding through auxiliary enterprises. For example, Mahidol University in Thailand operates seven hospitals. Chulalongkorn University owns considerable real estate in downtown Bangkok which they rent. Both universities bid on and receive contracts from government agencies and both sell research and consulting services to private sector enterprises. Tuition provides a further source of income. While universities in Thailand can set their own tuition rates, they hit some limits. As a practical matter, tuition rates are constrained by competitive considerations in how much a university can charge.

One area in which universities had more latitude was in the recruitment of international students. Of particular note in this regard were the differences between countries in how universities viewed the recruitment of international students into graduate programmes. Interview data indicated that both Malaysia and Thailand recruit international students for their graduate programmes, but in different ways and for somewhat different reasons. Universities in both countries viewed graduate education as a strategy for increasing their research output. To that end, research publications were a graduation requirement for both master's and doctoral students. In Malaysia, graduate education was also seen as an income generating activity through the tuition students paid. In Thailand, this was not the case and most international graduate students were fully funded by the institutions they attended.

The Ministry of Higher Education in Malaysia actively seeks to further increase the number of international students studying in Malaysian colleges and universities, largely as a source of national income. Consequently, Malaysia seeks to become a higher education hub at both the undergraduate and graduate levels. Already over

65,000 international students are enrolled in Malaysian colleges and universities, which accounts for six percent of total higher education enrolments. The Malaysian government's target is to increase international enrolment to 10% of total higher education enrolment by 2020 (MoHE Malaysia, 2006). Table 3 displays the major source of international students in Malaysia. About one-fifth of its international students come from the Association of Southeast Asian Nations (ASEAN). Additionally, Malaysia hosts a disproportionately large share of students from Muslim cultural backgrounds.

Table 3. Number and major sources of international students in Thailand and Malaysia, 2011

International students in Malaysia		International students in Thailand	
Country of origin	Number	Country of origin	Number
Indonesia	8,955	China	9,329
China	7,621	Lao PDR	1,311
Iran	7,397	Myanmar	1,310
Nigeria	4,290	Viet Nam	1,100
Yemen	3,056	Cambodia	944
Bangladesh	1,722	United States	826
Botswana	1,635	Republic of Korea	437
Sudan	1,569	Japan	394
Pakistan	1,552	Germany	389
Iraq	1,498	Bangladesh	376
Other countries	25,454	Other countries	3,739
Total	64,749	Total	20,155
Of which, the percentage from ASEAN countries	19%	Of which, the percentage from ASEAN countries	26%

Note. Data year for Malaysia is 2010.

Source: UNESCO Institute for Statistics database, July 2013

Top Malaysian universities had a financial incentive to recruit international students. The financial value of international graduate students in Malaysia relates to government control over domestic tuition rates at both undergraduate and graduate levels. Tuition rates for Malaysia undergraduate students in Malaysian public universities are set by the government and constant across public universities. However, since universities can control the tuition rates they charge to international undergraduates, international students are a more lucrative market (than are domestic students). At the graduate level, Malaysian universities can set their own tuition levels, allowing institutions greater flexibility to utilize tuition as a way to meet university costs. One implication is that, even though the unit cost of graduate education in Malaysia is presumably higher than undergraduate, graduate education offered a more lucrative strategy for universities under pressure to generate more of their own income. Consequently, shifting the balance from undergraduate-to-graduate enrolment offered economic advantage to the universities. As an economic move, then, all four of the research universities involved in this study were in the process of reducing their undergraduate enrolments while increasing their graduate enrolment, with a goal of eventually achieving the ratio of undergraduate to graduate enrolment being 50:50. With respect to international students, all of these research universities enrolled a disproportionate share of international students at the graduate-level.

Interviewees indicated that international students' reasons for selecting Malaysia vary, but four factors were particularly prominent: (1) *Cultural comfort*: Malaysia is a friendly environment for Muslim students. Muslim students can study in a country in which Muslim values and practices are understood, widely shared, and respected. (2) *Cost*: Relative to the cost of higher education in traditional destination countries (e.g., U.S., U.K., and Australia), the costs of undergraduate and graduate degree programmes in Malaysia are a bargain. (3) *Value for money*: Not only are costs relatively low, but quality of Malaysian higher education is seen to be good, yielding a growing perception that higher education in Malaysia represents value for the money. Finally, (4)

quality of life: Malaysia offers good quality of life; it is widely regarded as a comfortable place to live and study.

The Thai perspective was different. In both Chulalongkorn University and Mahidol University, international enrolment was only around five percent or less of the student body. Several reasons were offered for the low international enrolment: most undergraduate classes are taught in Thai and few international students have the language ability to take those courses. Many Thai faculty members are not particularly comfortable working in English and reluctant to develop and offer English language courses. Further, campuses are not always set up to host international students. As one interviewee observed, there is only one Halal restaurant on the Mahidol Salaya campus, and a Muslim student would find it difficult to have so few dining options. Consequently, international students were not recruited as extensively as in Malaysia. There was an effort to increase graduate level enrolments, but primarily as a strategy to increase research publications en route to raising university rankings.

4.2.2 Instructional Staff as Inputs

In Malaysia, research universities are staffed primarily by Malaysian scholars who have done their graduate coursework abroad, typically in a Western university. With the expansion of doctoral programmes in Malaysia, there is an increase in scholars educated in the country, but this is still a relatively new phenomenon. There were different views among interviewees about the relative advantage of faculty members from these different backgrounds. Some believe that faculty members trained abroad bring a world view, work ethic, and ability in critical thinking and research that are necessary to building an academically vital environment. They see a risk of intellectual inbreeding and narrowing of creative thinking to be significant risks in hiring too many Malaysian-trained doctorate holders. Others observe that foreign study is expensive and, with the rise of local doctoral programmes, hiring faculty with foreign training is less necessary than in the past. As money gets tight, there will be greater pressure on hiring locally trained personnel. To counter the inbreeding concern, some universities (i.e., the University of Malaya) tend not to hire their own graduates. Nonetheless, universities differ on this point.

For the most part, coursework at Thai universities is taught in Thai, with some English course offerings. This tends to favor the recruitment of Thai instructors. Since Thailand already has strong doctoral programmes, a sufficient pool of Thais with a graduate degree is available. The tendency, then, has been to favour hiring their own graduates as instructors.

4.3 Incentives and Accountability

4.3.1 Faculty

Viewed through the lens of Galal's framework, research universities in both countries have received significant financial and human resource inputs needed in extending the provision of graduate education. The challenge facing university administrators in both countries has been to create incentive and accountability systems capable of harnessing and aligning the energy of faculty members behind national and institutional goals and attracting qualified students. In both Malaysia and Thailand, faculty accountability has been accomplished through a rather elaborate cascading system of key performance indicators (KPIs). Indeed, governments and universities in both countries employ KPIs as the backbone of their accountability systems. However, in both countries, the KPI systems have been a source of considerable controversy, with strong supporters and strong critics. Supporters argued that KPIs are clear, transparent, and fair. Everyone understands the professional expectations placed on them. As such, KPIs represent a common accountability system that can be applied across departments and individuals. Critics argued that the metrics employed in the KPIs were too rigid and often failed to acknowledge the value of professional work that was not publishable in an Institute for Scientific Information (ISI) journal.

In Malaysia, universities must report to the Ministry of Higher Education on a series of KPIs which they must meet in order to continue to receive generous government funding. These KPIs emphasize the overall number of publications produced, the number of patents filed, the amount of teaching, and the amount of external research funds received. Within the university, academic departments and research units have KPIs that largely mirror the university's, with an emphasis on publication rates and external funds received. Individual faculty members have KPIs that, again, largely mirror those above. Faculty members are expected to teach four courses per year, publish one to two articles in top-tier international journals (depending on rank, with senior faculty members expected to publish more), secure external funding, and be involved in some form of community outreach. KPIs are largely the same across research universities, departments, and faculty ranks. Expectations are explicit and, for the most part, uniformly applied across departments and fields of study. Viewed from through the lens of the Galal framework, a well-elaborated accountability system is in place.

Virtually all interviewees believe the KPI system puts great pressure on faculty, especially young faculty, and many regard the system as unfair. One reason is that the KPI system in Malaysia is viewed as somewhat inflexible. In the view of many senior level interviewees, fairness dictates that everyone be subject to the same expectations regarding teaching load, publication output, external fund raising, and community outreach. The current KPI system, they believe, provides them with a verifiable and transparent basis for judging the performance of individual faculty members from across a variety of disciplines. The system appeared to earn support among faculty members in STEM areas (science, technology, engineering, and mathematics). However, faculty in arts, humanities and, to a considerable extent, social sciences, see it as inappropriate and unfair. Interviewees observed that university administrators had difficulty in knowing how to evaluate a book or art show relative to a publication in an ISI journal, typically to the detriment of those not in the hard sciences. While some of the Malaysian universities are experimenting with introducing more flexibility, these efforts were at an embryonic stage.

In important respects, the effectiveness of the KPI-based accountability system implemented in Malaysia is limited by a larger structural issue concerning incentives. Salaries are fixed by the government and standard across all faculty of similar rank. This means that there are few financial incentives for stellar performance. Furthermore, since most instructional staff are tenured (e.g., have strong employment security), failure to meet KPIs does not put their jobs at risk. They may lose out on promotions and annual raises, but their jobs are secure. To offset this limitation, all of the four universities have implemented bonus systems, in which faculty members are paid extra for each publication (the amount based on the impact factor of the journal) and for bringing in grants and contracts. These amounts are designed to be motivating; an assistant professor can earn a bonus of US\$2000 or more for publishing in a top-tier journal.

Thailand employed a more flexible KPI system than seen in Malaysia. The top research universities in Thailand also emphasized publications in top-tier journals as a key ingredient in faculty KPIs, but with more nuance. The status of the Thai universities in this study as “autonomous universities” gave them a degree of insulation from central government expectations that was not enjoyed in Malaysia. As part of this autonomy, many faculty members at top Thai universities were employees of their university and did not have the employment protection offered by the civil service standing enjoyed by faculty at most other universities. This flexibility was exhibited in interviewee reports of how publication expectations were applied differently across different colleges and academic departments. Not everyone was treated identically. This flexibility had benefits. As one interviewee pointed out, those faculty members most likely to resist the “publish and do so in English” pressure tended to be older and more senior faculty members. The university could not easily lose that level of expertise and seniority without negative repercussions. Further, they needed those individuals for institutional leadership. At the same time, that same autonomy gave university administrators more ability to insist that faculty members publish. The job security of faculty members in Thai autonomous universities depended more on their annual performance reviews than did the job security of faculty who were still civil service employees. Hence, university administrators were able to emphasize publication while doing so in a manner that honored differences among faculty members.

4.3.2 Graduate Students

In important respects, graduate students were caught up in the larger accountability system that was denominated in terms of publications. Graduate students were an important contributor to publications, both as they assisted in conducting faculty members’ research and as they published as part of their graduate programme requirements. Hence graduate students are an important aid in helping to move their institutions up in world university rankings. In both countries, master’s and PhD students in selective universities were required to publish their research in journals as a condition of graduation. For them, as well as for faculty members, publications mattered.

A key incentive for students is the prospect of securing employment at the end of their graduate work. In Malaysia, employment of graduates of master’s and doctoral programmes has not been a problem. About 93% of doctoral graduates and another 79% of master’s graduates find employment within six months of graduation (MoHE Malaysia, 2013). However, interviewees pointed out that a doctorate degree does not necessarily help in getting jobs in industry. The majority of PhD graduates find employment in academe. Across the country, in 2012, over a half of doctoral graduates (52%) and some master’s graduates (14%) were employed as instructors in colleges and universities. The foreign trained PhD graduates tend to already have jobs in their home country and are on leave from their employers to do their graduate study. Those who are not are still able to quickly find employment back to their own countries. In Thailand, similar to that in Malaysia, a high proportion of doctoral graduates work in academia. A 2007 survey found that 70% of Thai doctoral students already had jobs in the

public sector, which included 40% in public higher education institutions and 30% in other public sector units (Chittmittrapap & Luksaneeyanawin, 2007).

Preparing instructional staff to teach in the wider circle of Malaysian colleges and universities across the country was a valued outcome of the expanding graduate education, but it evolved into being more of a by-product than a central goal of the expansion. However, graduate level instruction is more focused on preparing graduate students to conduct research than on preparing them to be effective future instructors in higher education institutions. Broadly raising the quality of future undergraduate instruction would not necessarily attract the international attention that is achieved by increased international rankings of a country's top universities. Still, the demand for more and better qualified instructors across other Malaysian higher education institutions ensured that virtually all master's and doctoral graduates would find employment.

4.4 Decentralizing Accountability

Galal argues that a way to address this lack of first-hand information is for administrators to decentralize significant aspects of the responsibility for assessing the actions of faculty members to those best positioned to accurately judge their work. Within the context of universities, that typically would be their college or departmental colleagues. As the preceding discussion has illustrated, universities in Malaysia and Thailand tended to operate differently in the extent that responsibility for applying KPIs was decentralized. The administration of KPIs tends to be more centralized in Malaysian universities, less so in Thai universities.

5. Conclusion

The purposes of this study were (a) to elaborate the reasons that selected governments and higher education institutions are expanding their graduate-level programmes and (b) to identify the issues that education and government leaders believe are key factors in their decisions about expanding graduate enrolments, ensuring a qualified instructional staff to teach them, and promoting university-based research. This study found that governments initially encouraged and funded the expansion of graduate education primarily to prepare more and better qualified instructional staff capable of staffing the rapidly expanding network of colleges and universities in pursuit of a longer-term objective of raising the quality of higher education across the country. In this regard, both countries were successful. Over time, governments increasingly came to view their investment in graduate education as a means of promoting the economic competitiveness of the country. Viewed through the lens of the Galal framework, top universities in both countries received the necessary *inputs* to support these agendas, much of them from the government. At the same time, these inputs came with strings attached. The expectation was that high levels of university-based research would pay off in higher university rankings which would eventually increase each country's attractiveness to international business and investment.

Both countries had a clear system of institutional and individual level accountability in which publications rates played an important role. The criterion on which faculty members' productivity was to be judged was well understood, even if not always appreciated. Graduate students were also clear about the publication requirements associated with graduation. In both settings, explicit accountability systems were in place. Perhaps the sharpest difference between countries, then, was in the extent to which the operation of the publication-oriented accountability systems was decentralized, with Thailand having a somewhat more decentralized decision process in how key performance indicators were applied than was observed in Malaysia. Given the greater autonomy granted to top Thai universities (compared to top Malaysian universities), institutional-level administrators had more flexibility in adjusting reward systems. Malaysian universities sought to compensate for their more limited flexibility in allocating incentives within the formal system by creating special bonus systems that operated outside of the fixed government salary schedule. The case study of these two countries illustrates both the pervasiveness of governments' expectations that graduate education will contribute to national economic development and national differences in the manner in which that agenda is pursued.

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