High Educ (2016) 71:231–251
DOI 10.1007/s10734-015-9898-2

Building human resources management capacity for university research: The case at four leading Vietnamese universities

T. L. Huong Nguyen[1]

Published online: 21 May 2015

Abstract At research-intensive universities, building human resources management (HRM) capacity has become a key approach to enhancing a university's research performance. However, despite aspiring to become a research-intensive university, many teaching-intensive universities in developing countries may not have created effective research-promoted HRM policies. This study investigates the extent to which four leading universities in Vietnam have motivated their academics to improve research performance. By analysing policy documents and 55 semi-structured interviews with university leaders, managers, and academics, the study found that compared to the "ideal" research-enhanced HRM policies employed by research-intensive universities, the four case-study Vietnamese universities have shown their recognition of academic research; however, their HRM policies are not powerful enough to encourage academics to do research to the best of their potential. In realizing their vision of becoming research-oriented universities, the four Vietnamese universities should employ a long-term HRM capacity-building strategy by providing stronger remuneration packages for academics, applying explicit indicators in assessing lecturers' research performance, and building a comprehensive staff development agenda for research team building. However, for the four universities to implement these recommendations, changes must also be made at the system level. The Vietnamese government must allocate more research funding and confer a higher level of autonomy to universities so that they can implement their desired HRM policies to accelerate institutional research capacity and performance.

Keywords Research management · University research · Research leadership · Human resources management · Capacity building · Public administration

✉ T. L. Huong Nguyen
lanhuonghic@yahoo.com; huongnguyen@swin.edu.au

[1] Swinburne Business School, Swinburne University of Technology, Mail H25, PO Box 218, Hawthorn, VIC 3122, Australia

Introduction

The rise of a globalized knowledge economy has been accompanied by the proliferation of global university rankings and governments worldwide now pursue higher education strategies with a view to participating in the world-class university movement (Marginson 2014). In the Asia–Pacific region, apart from highly developed countries such as Japan and Australia (and possibly Singapore), developing countries such as China, Malaysia, Thailand, Indonesia, and Vietnam have aspired to build world-class global research universities (Meek and Suwanwela 2006; Marginson 2011). While these universities can act as an information centre for a national developing academic system to access the advanced global knowledge network (Altbach 2013), the challenge is that they often lack institutional capacity for research building. They may not have the most basic conditions for doing research such as human resources, infrastructure and funding, and a favourable policy environment (Nguyen 2013b).

To help universities in developing countries better integrate into the world's academic ranking system, we need to gain further understanding of their capacity-building needs. Although a number of researchers (such as Bosch and Taylor 2011; Connell 2004; Hazelkorn 2004; Taylor 2006) and practitioners (such as Bushaway 2003) have examined what universities should do to enhance their research performance, this body of work mostly draws from the experiences of the more established research systems. Some attempts have been made to describe the situation in developing countries. For example, Altbach and Balán (2007), Liu et al. (2011) and Altbach and Salmi (2011) investigate the institutional practices of building world-class universities in developing Asian and Latin countries. Salazar-Clemeña and Almonte-Acosta (2007), and Olsson and Meek (2013) provide some empirical accounts of South-east Asian countries' research management capacity. However, these are still very limited in number and scope. There are few empirical publications on university research capacity building in Vietnam.

This paper presents partial findings from a study that examines the prospects, challenges and possibilities that four leading Vietnamese universities experienced in building and enhancing research capacity. The overall research project examines five aspects of university research capacity building: research resources (Nguyen 2013b), research structural organization (Nguyen and Meek forthcoming), research-related human resources policies, research management plans, and research cultures. This paper investigates issues related to the third component of this five-element research capacity-building framework. More specifically, the paper examines the extent to which four leading universities in Vietnam have motivated their academics to improve research performance and the participants' preferred human resource policies for enhancing academic research productivity. From these findings, the paper suggests relevant human resource strategies for improving research performance at these and similar institutions.

This paper contributes significantly to the university research capacity-building literature in developing countries. As stated, research capacity building in the less developed countries has been poorly investigated. By examining the experience of four leading Vietnamese universities in building HRM[1] capacity for research, this study enriches the body of the literature on research capacity building in developing higher education systems. Findings from this study are very useful not only for research policy-makers and

[1] 'a strategic approach to managing employment relations which emphasizes that leveraging people's capabilities and commitment is critical to achieving sustainable competitive advantage or superior public services' Bratton and Gold (2012), p. 7).

university leaders and managers in Vietnam but also for those in a similar organizational context to develop effective HRM policies for university research promotion.

The context of Vietnamese university research development

Vietnam provides an interesting case of a fast-developing higher education system. The latest statistics from the Ministry of Education and Training show that by the academic year 2011–2012, Vietnam had a total of 204 universities and 215 colleges (Bộ giáo dục và đào tạo 2012). Among the 204 universities, 54 were non-public, including RMIT and British University Vietnam which are 100 % foreign owned. Since 2004, the government has identified a group of 16 key universities (Chính phủ 2004a; Thủ tướng chính phủ 2008a, b). These include two national, three regional universities, and 11 normal universities specializing in various disciplines such as teacher education, medical sciences, economics, agriculture and forestry, technology, and the military forces. These key universities are generally expected to become leading institutions in Vietnam, especially in research.

Vietnam is not exempt from the influence of the world-class university movement. Since 2006, Vietnam has planned to establish four, new, world-class universities with support and sponsorship from more developed countries. The Vietnamese–German University (established in 2008) and the Hanoi University of Science and Technology in partnership with the French government (established in 2009) have been operating. The other two universities are still being negotiated and are expected to encompass being "a new model, of high quality, and quickly reaching international standards" (Trần Thị Hà, as cited in Ha 2009, para 1). According to the latest plan for the national universities and colleges network, by the year 2015 Vietnam plans to have 20 universities with at least an internationally recognized teaching course at each university. Vietnam also aims to have at least one Vietnamese university to be ranked in the world's top 200 universities by the year 2020 (Thủ tướng chính phủ 2007).

Vietnam is also an interesting case of a latecomer's development of a university research culture. Along with China, Cuba, North Korea, and Laos, Vietnam is one of the world's five remaining single-party socialist states espousing communism. Following the Soviet model, in Vietnam, research has historically been undertaken through centrally funded and controlled research institutes outside universities. The focus of universities was, until recently, almost entirely on teaching and learning. Since the 1990s, universities have been encouraged by the government to develop their research capacity. The government's expectations have been demonstrated in a number of policy documents such as Hội đồng bộ trưởng (1992), Bộ giáo dục và đào tạo (2007), Thủ tướng chính phủ (2010), and Quốc hội (2012)—see Nguyen (2013a) for a detailed discussion.

Although the Vietnamese government has been very keen and ambitious in enhancing university research, Nguyễn (2014) found that there appears to be almost no powerful and/or special strategies, policies, and processes put in place to enhance university research in Vietnam. In spite of recent efforts in developing a complete legal structure for managing the science and technology portfolio, Vietnam lags behind not only North-east Asia and Singapore but also most of other Asia–Pacific developing countries such as Thailand and Malaysia in building research capacity. The national framework for research development is not really motivating for academics given the limited availability of research funding as well as the bureaucratic and outdated procedures for funding allocation (Quân 2012).

Although universities have been encouraged to strengthen their research, an overview of Vietnamese university research performance reveals that Vietnamese universities have limited research capacity and low research productivity and produce poorly utilized and irrelevant research (Hien 2010; Nguyen and Pham 2011; Nguyễn 2014). To enhance research capacity, both the Vietnamese government and universities need to take actions. Arguably, at the national level, more specific and stronger research policies need to be created. At the institutional level, universities need to assess the efficiency and effectiveness of their research management processes and strategies to identify appropriate solutions for enhancing their institutional research capacity and performance.

A general lack of scholarly publications on higher education in Vietnam and on university research management in particular impedes our understanding of the barriers and challenges for Vietnam. The most significant scholarly English publications on higher education in Vietnam recently are Harman et al.'s (2010) book on reforming higher education in Vietnam, Hayden et al.'s (2012) consulting report on a Master Plan for Vietnam's Higher Education System, and Trần et al.'s (2014) book on the need for flexibility, mobility, and practicality in higher education in Vietnam. A literature review of university research management found only some consulting papers commissioned by the World Bank, UNDP, and OECD. These works include: Ca (2006), Chirot and Wilkinson (2010), and Ly (2013), respectively. Some journal articles investigate the research performance of higher education in Vietnam compared to that of some other South-east Asian countries (Hien 2010; Nguyen and Pham 2011). Sixteen publications in Vietnamese were also found, but almost all of these publications are from non-peer-reviewed and/or non-empirical. Apart from Nguyen (2013b) which investigates the research resources management challenges at leading Vietnamese universities, almost no empirical research has been published on institutional research management practices Vietnam. By investigating the extent to which research-enhanced HRM practices at four leading Vietnamese universities have been aligned with those of world-class research universities, this paper extends the discussion on how to improve Vietnamese university research management and capacity building.

An analytical framework for research-enhanced HRM policies at universities

This study finds three main groups of the ideal HRM practices that research-intensive universities employ to enhance research: (1) hiring the right people, (2) developing staff, and (3) rewarding staff. The study also notes some lessons for developing countries in developing research-enhanced HRM policies. Together, these serve as the analytical framework for examining the research-enhanced HRM practices at four leading Vietnamese universities (see Table 1).

Hiring the right people

Both well-established and newly developed world-class universities recruit academics based on their research achievement and potential. In well-established research universities, candidates are assessed against the skills necessary for quality research; they are required to have a proven track record in publishing (Edgar and Geare 2013). Some research-intensive universities apply a careful probationary procedure before a full

Table 1 An analytical framework for research-enhanced HRM policies at universities

Tasks	Ideal research-enhanced HRM practices	Emerging lessons for developing countries
Hiring the right people	Based on research achievement and potential; Require an international reputation in research and/or target best appointments internationally; Offer attractive packages of remuneration and apply careful probationary procedures	Attract the diasporas at the initial phase; Maximize the diasporas' contribution; Localize research expertise in the long run
Developing staff	Advance academics' qualifications; Provide research skills development programmes; Nurture the research career as an institutional responsibility	Provide support to help existing academics deal successfully with stress associated with new requirements for faculty research performance and capability
Rewarding staff	Actively use research performance indicators to assess staff performance; Provide both financial and non-financial rewards; Provide relevant rewards at relevant times.	In developing criteria for faculty research performance evaluation and reward: Allow academics to decide their targeted journals for publication; Develop different teaching-research proportion workloads for different disciplines and different career tracks for academics.

Source: Author

appointment is made; some require academics to have an international reputation in research; some target the best appointments internationally (Taylor 2006). These universities are willing to offer attractive packages of remuneration and other benefits to secure the right appointment.

In order to hire the "right" people, universities that aspired to become world-class universities in some emerging countries (such as China and India) have radically changed their employment policies in a way that favour candidates with PhD qualifications from overseas or with overseas work experience (Wang et al. 2011). Although it is often quite difficult to attract highly qualified foreign scholars to developing countries due to worse living conditions, lower pay and possibly a loss of access to their national research grant schemes and other funding sources, etc., these universities have been actively engaged in attracting the diaspora who are outstandingly talented scholars and scientists working overseas to return to their countries of origin to develop the core academics (Jayaram 2011; Postiglione 2011; Wang et al. 2011). These policies seem to work quite well; however, a number of problems associated with such policies have also been identified.

Firstly, while the repatriation of foreign national academics can serve as excellent role models and can contribute significantly to a local university's research productivity and culture, such expectations are not always met. For example, in investigating the deployment of the Chinese knowledge diaspora—the 111 Project[2] at Peking University, Cai (2012) found that although foreign national Chinese scholars are expected to stay in China for a period of 1–3 months, in practice, due to their dual responsibilities for both their overseas home institution and for Peking University, very few could meet this time expectation. The author cautions that in actively seeking out the world' leading academics to

[2] This project aims to attract 1000 overseas scholars from the top 100 universities and research institutions worldwide.

work for them, universities should take appropriate measures to avoid hiring highly prestigious scholars only for "decorating" purposes without generating any real impact (Cai 2012). Secondly, those universities seeking to build their research profile using expatriate academics need to ensure that visa application procedures should be simplified so that expatriate scholars' enthusiasm for contribution is not diminished due to unnecessary bureaucracy. Finally, while universities in developing countries may lure and keep top scientists from abroad in the initial phase, in order to achieve a sustainable strong research culture, these universities must nurture their own highly qualified local researchers as a long-term development strategy (Postiglione 2013).

Developing staff

A systematic staff research development programme is generally considered a basic requirement for building university research capacity. Developing staff means providing them with conditions favourable to upgrading their research competencies and sustaining their research motivation (Cooke and Green 2000; Calma 2010). Most importantly, universities need to consider the management of staff research careers as an institutional responsibility (Connell 2004). In other words, rather than simply letting academics find research development opportunities by themselves, universities should be proactive in providing and/or supporting their staff with such opportunities throughout their career life.

For example, the university research office can help to advance academics' informal research qualifications. They can organize research development workshops to provide academics with support in preparing for research proposals, writing papers for publication, managing a research project, supervising postgraduate research, etc. (Taylor 2006). Senior researchers may also be trained in research management skills. Early career researchers may be provided with mentoring support (see also Cheetham 2007; Rath 2009). Universities can also contribute to advancing academics' formal academic qualifications by allowing them to study for a PhD degree.

Some useful lessons have been noted for research-emerging universities in developing countries to transition their academics from teaching-focused to research-oriented. For example, taking Zhejiang University as a case study, Li et al. (2013) examine job perceptions of 468 young faculty members in the fields of humanities and social sciences. In the midst of Chinese higher education reform, a key change for research universities is the transition from a system that provided guaranteed tenure for virtually all academic staff regardless of their performance to a contract-based one that use both quantitative and qualitative research and teaching indicators to evaluate and promote faculty. The authors found that faculty members are still "struggling between external accountability and internal values and interests, between the new expectations of the reformed faculty appraisal and promotion criteria and the old system" (Li et al. 2013, p. 275). The authors recommend that so as to build effective research-enhanced HRM policies, universities should provide adequate support to help academics overcome the challenges that this transition may create such as career fatigue for early and mid-career academics, work–life balance for female faculties, and job burnout and turnover for those without a doctoral degree (Li et al. 2013).

Rewarding staff

A key strategy for attracting and retaining talented academics is to recognize their research performance and reward them for it. A research-encouraging reward system can bring about marked increases in academics' research outputs over time and across all types of

institutions (Letham and Wexley 1981, as cited in Bland and Ruffin 1992). Such a system can help to create psychological pressures to produce research publications; it can influence attitudes to research and work habits and encourage consideration of work mobility. Arguably, universities in developing countries should develop a reward system that maximizes inward mobility so that foreign national and foreign-trained local academics would remain in the local country for a considerable length of time to work.

Universities can reward academic research by linking employment, promotion, and tenure with research outputs (Rhee 2011). In other words, they can actively employ input and output research performance indicators (Taylor 2006). Key input measures may include past research income (by source), number of research students and number of research staff, number and percentage of research active staff, applications for research funding, and success rates in applications. Major output measures may include: the number of publications and citations, completed research student theses, research applications (patents, licences), and academic distinctions such as editorships and special awards. These performance indicators could be the basis for rewarding academics' research.

Universities may reward academics for their research performance financially or non-financially. Non-financial rewards can be in the form of praise and recognition by managers (Santo et al. 2009), mention in bulletins, and "lionization" at scientific conferences (Hedjazi and Behravan 2011). Popular forms of financial rewards may be salary bonuses (for instance, market loadings), accelerated promotion, funding for travel, conference attendance, and further research (Taylor 2006). For example, at Shanghai Jiao Tong University, in 1999, the university provided a reward of about UD$ 1480 for each paper indexed in SCI. Ten percentage this amount was given to the researcher as a financial reward, and the remaining 90 % was awarded to fund further research. This policy has helped to increase the university's total number of SCI papers which increased to 2331 in 2007, reaching similar standards as some top 100 world-class university (Wang et al. 2011).

Universities should also consider the effectiveness of reward types. Some researchers caution that money seems to enhance productivity or to be a motivating factor only for staff whose salaries are lower in comparison with other members' in the same unit, or for a whole unit compared with other units in the organization (Gustad 1986, as cited in Bland and Ruffin 1992). In fact, in reviewing the literature on rewards, Bland and Ruffin (1992, p. 392) note:

> Although salary, awards, promotions, and the like are important rewards, what most motivates researchers are the intrinsic pleasures of challenging work, intellectual accomplishment, stimulating colleagues, and being valued by one's colleagues (local and national).

However, in a study comparing the relative importance of various factors for the time faculty allocate to teaching and research, Fairweather (2009) points out that actual reward in the form of basic salary is the single strongest predictor of the relative time spent on teaching and research. Hedjazi and Behravan (2011) also found that financial rewards are more welcomed by faculty members than symbolic ones. Some other researchers note that the most effective combination of financial and non-financial rewards seems to vary for each individual. Even for the same person, preferred rewards are also likely to change over a lifespan (McKeachie 1979, as cited in Bland and Ruffin 1992). Thus, it seems that universities should not only offer the preferred rewards but also enable researchers to access the rewards they prefer when their needs change (Bland and Ruffin 1992). All in all, while research rewards can provide academics with some financial gains, more

importantly, they recognize their special expertise, intellectual ability, and value to one's colleagues (McKeachie 1979, 1983, as cited in Bland and Ruffin 1992; Postiglione 2013).

Researchers have yet recorded many specific lessons for rewarding staff in emerging research universities in developing countries. However, Li et al. (2013) suggest that in actively using research performance indicators to assess and reward staff, instead of giving the right to the Department of Human Resources, universities could allow a group of experts in each discipline to decide the lists of academic journals that count in evaluating faculty research outputs (Li et al. 2013). Also, because there are differences among different academic areas, universities could develop different teaching-research workloads for different disciplines. Instead of applying the same research performance standards to all lecturers, universities could classify lecturers into research-oriented, research and teaching combined or teaching-oriented staff, thereby requiring corresponding levels of research performance.

In summary, to enhance research performance, a research-intensive university often employs three main HRM policies: hiring the most talented academics, developing them, and rewarding them. These policies help to develop the best possible academic staffs who are not only highly skilled but also strongly motivated to do research. However, it should be noted that universities do not operate in a vacuum. The context in which they operate is crucial to the decision-making process. There appears to be a series of contextual elements that may be necessary (or at least supportive) conditions for building institutional research capacity. For example, in analysing what it takes to establish and sustain research universities at eleven universities studies, Salmi (2011) proposes eight groups of external factors that directly influence either positively or negatively the ability of research universities to prosper. These include: (1) political and economic stability; (2) vision, leadership and reform capacity; (3) governance and regulatory framework; (4) quality assurance and enhancement; (5) resources and incentives; (6) articulation and information mechanisms; (7) location; and (8) telecommunications and digital infrastructure. Within this list, the most HRM influential factors may be (1) to (6). Thus, apart from the three main groups of HRM policies discussed above, in accurately evaluating a university's research capacity building in general one should bear in mind the key external factors which comprise the tertiary education ecosystem that may facilitate or prohibit research.

Using the above analytical framework, this study examines the extent to which the "ideal" HR research-enhanced policies and practices have been employed at four leading Vietnamese universities, from which we suggest relevant HRM strategies for enhancing Vietnamese university research. More specifically, this study asks the following questions:

- What HRM policies have the four case-study Vietnamese universities developed to enhance research?
- How effective are these policies as perceived by these universities' leaders, managers, and lecturers?
- What HRM policies should be improved or developed to promote research at the four case-study Vietnamese universities?

Methods

The primary source of evidence consisted of semi-structured interviews with 55 participants. The purpose of the interview was to gain respondents' perceptions on the availability, appropriateness and effectiveness of current HRM policies and practices. The

participants consisted of individuals directly involved in research and managing research at the case-study universities, including: six senior university leaders; nine administrative managers; 18 deans/deputy deans; six directors of research institutes; and 16 lecturers. Each interview lasted from 45 to 60 min. The interviews were conducted in Vietnamese and transcribed into Vietnamese before analysis; then, supporting quotes were translated into English. The computer-assisted qualitative data analysis software NVIVO 9 was used to analyse the data. The analytical framework for university research-enhanced HRM policies presented above is used as a tool to analyse the empirical data.

Participants were recruited from four leading mono-discipline Vietnamese universities. Each of these universities specializes in a collection of related disciplines, namely engineering, natural sciences, health care, and economics. Of the four selected universities, one is a university member of one of the two Vietnamese national universities that report to the prime minister, two universities are managed by the Ministry of Education and Training, and one is administrated by a line ministry. They are all identified as key universities, which are expected to become leading universities in Vietnam, especially in research. Although it has not been articulated in policy documents, these four universities are expected to serve as models for other institutions charged with developing a broad array of higher education teaching and research functions; they are not intended to be models for centres of research excellence. Table 2 presents the four universities' selected demographic data.

Findings

The four universities' HRM policies to enhance research

The four case-study universities had almost no explicitly stated philosophy with respect to HRM management in general and promotion of research in particular. Compared to the "ideal" HRM policies presented above, the four case-study Vietnamese universities have shown their recognition of lecturers' research work to a limited extent.

In hiring academics, PhD holders are welcomed, but no prior research performance evidence is expected

The literature suggests that, in recruiting academic staff, high-research-performance universities rely on candidates' research performance and potential (Edgar and Geare 2013). In this study, all of the four universities welcomed PhD graduates, especially those graduating from developed countries. For example, at the natural sciences university, "overseas trained Ph.D. holders are recruited straightaway without having to sit for selection exams" (Deputy Dean, Natural Sciences). At the engineering university, "a newly recruited lecturer can only get 85 % of the basic salary in the first year as a probation staff; however, the university pays them 100 % right upon recruitment" (Manager, Human Resources). The majority of the participants saw these policies as appropriate, very open and welcoming towards young PhD holders. It also helped the university to build stronger human resources.

However, the four universities did not employ any specific research performance indicators to recruit PhD holders. Even though these institutions considered numbers of publications as one of the selection criteria, normally they only assessed candidates against their teaching capacity and general work ethics. After being selected, academics were expected to fulfil their research workload.

Table 2 Four universities' selected demographic data

University	Students	Academics	Student/ teacher ratio	Professors/ A. Professors (%)	Academics with a PhD (%)	Academics with a Masters (%)	National research projects	Ministry research projects	Institutional research projects	Domestic research publications	International research publications	Academic year
The natural sciences	4800	358	13.4	31	69	26	28	167	125	321	205	2011–2012
The engineering	42,000	1266	33	14	47	45	48	189	246	300	100	2010–2011
The economics	45,000	759	59	15	34	52	5	15	50	n/a	30	2011–2012
The medical sciences	5000	255	20	60	80	20	n/a	n/a	n/a	n/a	n/a	2011–2012

In developing staff, academics' formal qualifications are advanced; however, very few on-the-jobs up-skills research development programmes are provided

In an OECD study, Connell (2004) found staff development a central issue for both research-intensive and research-emerging institutions. The four universities in this case study also offered staff development opportunities; however, they typically did this through allowing their academics to do formal Masters and PhD classes to upgrade their qualifications, either in Vietnam or overseas. If lecturers attended masters or PhD training at home institutions, the four universities exempted their tuition fees. If they could secure funding to undertake study overseas, the universities helped facilitate their overseas placements.

Universities did not put any money aside to support lecturers in attending international research conferences or training workshops. Only the economics university provided some ad hoc classes for writing research proposals and journal articles. The other three universities did not seem to provide any systematic research or publication writing development programmes. To improve their research capability, academics had to take personal initiatives:

> I don't feel that I am prevented by university leaders or managers from doing anything. In other words, they are all kind, they encourage and support in the sense that they don't stop me from doing things, but they haven't been able to actively offer me favourable conditions to do my work… I have to be mainly active in my own work. (Lecturer, Natural Sciences)

This situation may indicate that if lecturers wanted to develop their research skills, they had to be active in seeking relevant professional development classes. Their universities rarely proactively offered such programmes.

In rewarding staff, academics with research performance are distinguished from those without; however, good performers are yet to be differentiated from more mediocre ones

The literature shows that research-intensive universities reward academics' research performance mainly through management praise, salaries, and accelerated promotion (Fairweather 2009; Hedjazi and Behravan 2011; Santo et al. 2009). Correspondingly, the four universities also recognized lecturers' research through both non-financial and financial awards. They used three major mechanisms: (1) calculating research-related activity in total workload; (2) setting research performance as a prerequisite for nominating lecturers for institutional, ministerial, and national best staff titles of the year; and (3) rewarding lecturers who publish in refereed international journals. The following section describes these three mechanisms in further detail.

Calculating research-related activity in total academic workload

While in the past, the four case-study universities only recognized teaching-related activities, recently they have started to calculate academics' research-related activities in total academic workload. Academics perceived this policy as the most visible form of rewarding their research performance:

> When research tasks are quantified and calculated in terms of hours, it shows lecturers that doing research is both a right and a responsibility. (Deputy Dean, Basic Medical)

In other academic systems (such as Australia), for a pre-defined annual workload, full-time academics are often paid a salary package sufficient to live a middle-class lifestyle. In Vietnam, a full-time academic is also paid a minimum basic salary (Chính phủ 2004b) to work for a total number of about 1760 h per year (Bộ giáo dục và đào tạo 2008) .[3] Whether Vietnamese academics' salaries are sufficient to place them in the middle class is a question that needs to be investigated empirically, but the general perception is that the minimum basic salary meets only 60 % of an employee's minimum needs (Hoàng 2012). As a result, apart from working these minimum hours to receive the minimum basic salary, academics often work overtime to receive a secondary payment, either from their own universities or from moonlighting elsewhere. As a result, calculating research-related activity in total academic workload was very well perceived by the academics.

Although allocating research into the workload encouraged academics to do research, it did not seem to influence their research behaviours significantly. In its "General regulation on university lecturers' working hours", MOET required academics to spend a certain number of working hours on research each year based on their academic ranks (Bộ giáo dục và đào tạo 2008) .[4] Nonetheless, the four universities allowed academics to do non-research tasks (such as teaching) to make up for their deficit research workload.

> For those who can't do research, for example, older generation lecturers or lecturers who can't win a research grant, they have to teach for others to do research. For example, of 500 work hours, 350 are allocated for teaching and 150 are for research. A lecturer without any research work has to teach 200 h to make up for 150 h of research. (Rector)

In contrast, research-intensive universities elsewhere do not seem to allow academics to use non-research tasks to compensate for lack of research work. For example, in the USA doctoral/research universities, in deciding academic promotions, if a candidate's research is deemed inadequate, no amount of teaching or service will compensate for this dearth of activity (Park 1996, as cited in Rosser and Tabata 2010).

Setting research performance as a prerequisite for nominating lecturers for staff awards

Three of the four universities considered an academic's research achievement as the prerequisite for nominating the "Institution Level Best Staff", "Ministry Level Best Staff", or "National Level Best Staff" awards. If a lecturer completed his/her expected annual workload, he/she was only eligible for the lowest ranked *Lao động* tiên tiến "Advanced Staff" title. These awards, however, were not created specially at the four universities to reward academics' performance. The Competition and Rewards Law requires all state-owned organizations including universities to apply this policy (Quốc hội 2003). Each award consists of a certificate of completion and some bonus money.

[3] MOET issues this general regulation on university lecturers' working hours.

[4] Of the 1760 h per year, for all academics, 900 h are expected to spend on teaching. Lecturers, associate professors or principal lecturers, and professors or senior lecturers are expected to spend 500, 600, and 700 h on research, respectively.

Participants generally agreed that these awards were great because university recognition could make academics feel better about their contribution.

> Although these awards do not bring many economic rights, it is a form of showing that, if people work well, continuously, and seriously, they are appreciated. This recognition in research can bring people happiness, not in terms of finance but purely in spirit. (Dean, Applied Medical)

However, a number of participants were concerned about the poor criteria using for evaluating academic research performance. For some, the minimum requirements were so low that "almost anyone could satisfy them" (Deputy Dean, Basic Medical). For some others, "a clear criterion for evaluating research performance has not yet been developed" (Rector).

In short, current appraisal practices are only able to distinguish lecturers who did research from those who did not. But among those who do research, current assessment practices do not allow good performers to be differentiated from more mediocre ones. This performance assessment practice is criticized as being summative in nature, merely superficial, and more often than not, controversial (Nguyen et al. 2006). One Dean in engineering commented that, "at the moment, competition among staff is not real; it's just like one kind of movement".

Rewarding lecturers who publish in refereed international journals

At the medical and natural sciences universities, researchers who publish in refereed international journals are honoured and rewarded with bonus money. At these institutions, impact factors of the journals are considered as an important criterion for deciding the level of awards. This policy was very positively perceived. However, participants also thought that the amount of money was not large enough to considerably influence the research behaviours of the non-researching staff, particularly in the context where lecturers had to moonlight in order to make an adequate living.

The participants' suggested HRM policies to promote research

Participants welcomed all of the HRM policies for promoting research; however, they expected the universities to (1) provide stronger financial incentives; (2) apply more explicit indicators to assess lecturers' research performance; and (3) apply a comprehensive system in building HRM research capacity.

Provide stronger financial incentives

Given that most of the academics had to work at a second job to supplement their incomes, a number of participants suggested that, in order to promote research, "the first policy is to have an appropriate salary level that they can live on and gradually live better" (Director, Research Institute, Economics). This participant commented further that once a person decides to work as a lecturer, they know beforehand that they cannot be very rich, but their income should be enough for a living.

At the two universities where academics were not rewarded financially for publishing in peer-reviewed international journals, the participants generally expected their university to reward them financially. At the two universities where lecturers were already rewarded

financially for publishing in peer-reviewed international journals, the participants expected the amount of rewards to be higher. Currently, the bonus money was still too small to really impact academics' research behaviours.

Apply more explicit indicators to assess lecturers' research performance

As research assessment criteria for institutional, ministerial, and national best staff awards were still rather general, most participants expected that, as a part of overall performance assessment, universities would develop more specific criteria for assessing lecturers' research. At the economics university where "visible" research outcomes in the form of publications were not seriously considered, there was an opinion that: "If a lecturer is titled as Advanced Staff, they should show how many articles, books, or research projects they have completed in the last three years; if not, the university should not give them such a title" (Director, Research Institute, Economics). At the natural science university, publication counts had been used; however, the Rector confessed that "we only assess lecturers' research performance in terms of the number of journal articles published and the number of research projects they participate in. We still have difficulties in assessing lecturers' research quality". It was generally expected that academics' research performance could be assessed more meticulously, both in terms of quantity and quality.

Develop a well-rounded system to nurture strategic research team building

A minority of researchers, especially those from the economics university, emphasized the need to recruit the right people, develop research stars, and train new researchers in order to build strategic research teams.

Firstly, in recruiting the right people, universities must "roll out the red carpet" (Rector) to welcome "all people graduated from prestigious international universities" and "if they are trained locally, they should have a High Distinction for their overall study" (Director, Research Institute, Economics). The university should confer autonomy to academic departments to "select the right candidate" (Director, Research Institute, Economics). This is possibly because in a lot of state-owned organizations in Vietnam, including universities, HRM departments and organizational leaders may still have the absolute right in selecting staff. An academic department head may be consulted, but they do not often have the final say. This may lead to the situation where selected people satisfy only the HRM manager's needs, not the department's requirements.

Secondly, universities should focus on developing research stars. This is to enable them to concentrate on doing research and to train younger generations of researchers. While advocating this strategy, one Dean from the technology university stressed that "recognition of a research star should be based on the number of international publications, citation indexes, and intellectual property certificates, etc." (Dean, Engineering). This is probably because in Vietnam, a number of older researchers have also been identified as "cây đa cây đề" ("highly experienced researchers"), but the standards for identifying these people may not be internationally comparable. In many cases, these people may be honoured primarily for their length of service.

Thirdly, universities should pay more attention to train new researchers. This can be done through both formal PhD courses or other short-course research training workshops and informal on-the-job learning by directly getting involved in completing actual research projects. The economics university recently offered some research methods up-skill

seminars, which was very positively perceived. The participants expected that such activity could be conducted more regularly.

It is argued here that by implementing these three main HRM capacity-building strategies, Vietnamese universities will be better placed to develop core research teams, either institutional or departmental based. "Hopefully by doing so, universities can be more competitive in showing their research capacity, hence responding better to social needs for research" (Deputy Dean, Natural Sciences).

Discussion

These findings, on what motivates and facilitates performance, both confirm and contradict other studies on research capacity building of academic staff.

In recruiting academics, high-performing research universities apply a number of "research-based" policies such as relying on candidates' demonstrated research performance for selection, requiring an international reputation in research, and targeting best appointments internationally (Edgar and Geare 2013). In this study, although the four universities had a policy to attract PhD holders, selection for employment was not based on their research achievement. The four institutions were far from setting a policy to attract the best candidates from overseas.

In developing staff, research-intensive universities elsewhere often nurture the research career as an institutional responsibility, not only by upgrading academics' formal qualifications but also by providing short, research development courses for researchers at various stages of their career (Connell 2004). The four case-study universities have been very keen on upgrading lecturers' formal qualifications; however, they have organized very few professional development courses to up-skill lecturers' research capacity.

In rewarding researchers, research-intensive universities actively use research performance indicators and provide relevant rewards at appropriate times of a researcher's career (Fairweather 2009; Taylor 2006). The four universities in this study do little more than praise academics who have demonstrated research performance. Their reward policies were not powerful enough to strongly motivate either active researchers or non-researchers.

The contradictions between HRM practices at the four case-study universities and those depicted in the literature truly reflect the early development of university research capacity building in Vietnam. Although the four case-study universities were considered as "key" universities to accelerate academic research performance in Vietnam, by international standards, they were basically teaching-intensive institutions. The four universities seem to be at the "instilling" or the lowest institutional research development phase (Bosch and Taylor 2011). At this stage, performance management criteria are based on quantity of research activity rather than quality or number of outputs, and professional development of researchers is done mainly by improving academics' own qualifications.

This study also found a considerable mismatch between the four universities' current HRM policies and practices and those expected by the university leaders, managers, and academics. These stakeholders keenly suggested three major groups of HRM strategies for enhancing these universities' research productivity: (1) providing stronger remuneration packages for academics, particularly those with excellent research performance; (2) applying explicit indicators in assessing lecturers' research performance; and (3) building a comprehensive system to nurture strategic research team building. All of these suggestions appear to be sensible.

Firstly, it seems reasonable to pay continuing academics a decent salary so that they would dedicate wholeheartedly to their job. As the basic minimum salary is insufficient for an academic to lead a middle-level lifestyle, the majority of lecturers, particularly young ones, have to do several jobs simultaneously to earn a living. For those early career academics, while earning an income is the highest priority, why bother doing research, which is not only difficult to do technically but also poorly paid compared to teaching? On top of this, academics also have to suffer from the bureaucratic administrative procedures for managing a research project, the unclear criteria for assessing a research proposal, and the problematic practices in assessing quality of research project outcomes (Nguyen 2013a). Without adequate salaries, professionals would be hard pressed to do their best quality work (Altbach 2003). Prior studies advocate financial rewards for researchers, especially those living under substandard conditions (Fairweather 2009; Hedjazi and Behravan 2011) and those moving from a developed to a developing system (Postiglione 2011). Salaries can be viewed as an indication of an academic's status.

Secondly, explicit indicators for assessing lecturers' research performance have been developed elsewhere with success. At almost all research-intensive universities worldwide, in staff appraisal, developing and using research performance indicators have been a common practice (Connell 2004). Indeed, this is the precondition for any universities wanting to identify and develop a core group of research-productive academics. If the four universities could assess both the quantity and quality of academics' research and reward their research performance accordingly, they will be more likely to attract and retain the best research high performing academics.

Thirdly, the international literature suggests that it is necessary to develop a comprehensive system to nurture strategic research team building. This may require autonomy at the departmental level to select the right candidate and the institutional leaders' vision and willingness to value experienced academics and to develop young research stars. Talent and governance are key components in building a world-class university (Salmi 2009). Human resources, particularly internationally recognized researchers, were perceived as the most important type of research resources but severely lacking at the four institutions (Nguyen 2013b). Some countries such as China and India have been successful in attracting talented diaspora academics. Arguably, Vietnamese universities should follow suit and develop a sustainable research development agenda.

Although all of the above suggestions are well aligned with research-enhanced HRM practices at most world-class universities, they appear to be beyond the four universities' reach. Firstly, while the four universities should pay research high performers a decent salary, they may not have sufficient resources to do so. While the Vietnamese government provides the majority of university finance, funding is weighted towards teaching.[5] As a result, top university leaders believed that "creating a strong research focus is not warranted, and until such time as funding and state policies change direction, there is no need to implement appropriate, supportive policies to encourage research endeavours" (Nguyen 2013b, pp. 127).

Despite being a reasonable suggestion, the second suggestion of implementing a research performance-based assessment system may be easier said than done. In order to do so, these universities must be able to set a clear mechanism for evaluating the quality of

[5] The current rate of state expenditure for R&D is 1 % GDP, equivalent to about USD 1 billion. In 2013, only 5.6 % of the state R&D expenditure was allocated to universities managed by the Ministry of Education and Training. Each of the two national universities was given only <2 % of the total state budget (Bộ Tài Chính 2013).

research outcomes. The three main measurement mechanisms are: publication counts, peer review, and bibliometrics (such as citation rates and journal impact factors) (Nguyen and Meek forthcoming). Apart from some common potential problems associated with applying such systems such as inconsistency of panels in peer review and incomparability of citations across different research fields (Adams 2009), there seems to be a lack of effective benchmarks to promote research excellence in the Vietnamese national research system. The majority of Vietnamese scientific journals are non-peer-reviewed; yet, existent policies and practices may still judge them more or less equal to international peer-reviewed publications (Nguyen 2013a).

Finally, while it is reasonable that the four universities should develop long-term comprehensive plan for research team building, as discussed above, the lack of government commitment in allocating sufficient research funding may prevent them from doing so. Salmi (2009) identified three major approaches in building a world-class university: picking winners—upgrading existing universities to excellence, hybrid formula—merging existing universities, and clean-slate approach—create completely new universities from scratch. It appears that the Vietnamese government has applied all of these three strategies with limited success. Although the Vietnamese government have picked 16 key universities, created two national universities by merging existing smaller universities, and are building four new international universities, as stated above, they have not created any powerful and/or special strategies, policies, and processes to make these universities research-intensive universities. With the current level of government funding and commitment, none of these universities is likely to appear in the top 200 universities by 2020 as expected by the Vietnamese government. Before questioning a university's capacity or willingness to enhance their research capacity, it appears that, first of all, Vietnam must develop a realistic research development strategy and specific action plans at the system level.

Conclusion

In conclusion, compared to the "ideal" research-enhanced HRM policies employed by research-intensive universities, the four case-study Vietnamese universities have shown their recognition of academic research; however, their HRM policies are not powerful enough to encourage academics to do research to the best of their potential. The study suggests that in realizing their visions of being recognized as research-intensive universities, the four universities must employ a strategic long-term HRM capacity-building strategy. They should provide stronger remuneration packages for research high performing academics, apply explicit indicators in assessing lecturers' research performance, and build strategic research teams. In doing so, they should take into consideration the emerging lessons for building research universities in other developing countries (such as China and India), as depicted in the conceptual framework.

In the initial stage, Vietnamese universities should consider inviting the Vietnamese diaspora to return and create the most favourable conditions for them to maximize their contributions to institutional research development. In the long run, strategies should be developed so that these Vietnamese overseas scholars could transfer their research skills and expertise to local Vietnamese academics. The ultimate aim is for local Vietnamese academics to gradually and sustainably boost their research capacity and performance. To ensure smooth transition and effective development, Vietnamese universities should

provide local academics with relevant professional development programmes and support to nurture rather than immediately challenging their research capacity. However, in order for the four universities to implement these recommendations, there must be changes in the wider system level. The Vietnamese government must allocate more funding and confer a higher level of autonomy so that Vietnamese universities can implement their desired research-supported HRM policies.

In developing HRM policies for research development, these universities should also keep in mind that while academic salaries are important, money alone is not sufficient. In other words, once academics' basic needs for a living are met, other non-financial matters may come into play. These can be an academic environment in which an academic can freely pursue their research curiosity and/or nurture their intellectual development (Boyer 1990). They can also be the opportunity for an academic to interact with the wider community to satisfy their civic responsibility. For research to be sustainably developed, a healthy academic culture should also be cherished, within national and/or institutional strategic research priorities. Implementation of these tasks would take a long time, sustained efforts, strong determination, and commitment; however, the ultimate outcomes should be highly rewarding.

Acknowledgments I thank Professor David Beckett and Professor Bernadine Van Gramberg for their critical reading and suggestions on earlier drafts of this paper. I would also like to express my appreciation for the useful comments of the editor and the two anonymous referees of the Journal.

References

Adams, J. (2009). The use of bibliometrics to measure research quality in UK higher education institutions. *Archivum Immunologiae et Therapiae Experimentalis, 57*(1), 19–32.

Altbach, P. G. (2003). Centers and peripheries in the academic profession: The special challenges of developing countries. In P. G. Altbach (Ed.), *The decline of the guru: The academic profession in developing and middle-income countries* (pp. 1–22). New York: Palgrave Macmillan.

Altbach, P. G. (2013). Advancing the national and global knowledge economy: The role of research universities in developing countries. *Studies in Higher Education, 38*(3), 316–330.

Altbach, P. G., & Balán, J. (2007). *World class worldwide: transforming research universities in Asia and Latin America*. Baltimore, MD: Johns Hopkins University Press.

Altbach, P. G., & Salmi, J. (2011). *The road to academic excellence the making of world-class research universities*. Washington: World Bank Publications.

Bland, C. J., & Ruffin, M. T. (1992). Characteristics of a productive research environment: Literature review. *Academic Medicine, 67*(6), 385–397.

Bộ giáo dục và đào tạo. (2007). *Quy định về tiêu chuẩn đánh giá chất lượng giáo dục trường đại học, Ban hành kèm theo Quyết định số: 65/2007/QĐ-BGDĐT ngày 01 tháng 11 năm 2007 của B*ộ trưởng Bộ Giáo dục và Đào tạo [A regulation on the standards for evaluating the quality of universities, issued in accordance with Decision 65/2007/QĐ-BGDĐT, dated 1/11/2007 by the Ministry of Education and Training].

Bộ giáo dục và đào tạo. (2008). *Quy định Chế* độ làm việc đối với giảng viên (Ban hành kèm theo Quyết định số 64/2008/QĐ-*BGDĐT ban hành ngày 28/11/2008 của B*ộ trưởng Bộ Giáo dục và Đào tạo) [A regulation on university lecturers' workload: Issued in accordance with Decision number 64/2008/QĐ-BGDĐT, dated 28/11/2008 by the Minister of the Ministry of Education and Training].

Bộ giáo dục và đào tạo. (2012). Số liệu thống kê GD&ĐT năm 2012 [Statistics in education and training in 2012]. Retrieved September 5, 2013. http://www.moet.gov.vn/?page=11.11&view=4446

Bộ Tài Chính. (2013). *Dự toán ngân sách nhà nước năm 2013* [State budget plan for 2013]. Retrieved November 26, 2013. http://www.mof.gov.vn/portal/ page/portal/mof_vn/1351583/2126549/2115685/2134514/81643242/81643382?p_folder_id = 81638620&p_recurrent_news_id=81639464

Bosch, A., & Taylor, J. (2011). A proposed framework of institutional research development phases. *Journal of Higher Education Policy and Management, 33*(5), 443–457.

Boyer, E. L. (1990). *Scholarship reconsidered: Priorities of the professoriate*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.
Bratton, J., & Gold, J. (2012). *Human resource management: Theory and practice* (5th ed.). Basingstoke: Palgrave Macmillan.
Bushaway, R. W. (2003). *Managing research*. Philadelphia: Open University Press.
Ca, T. N. (2006). *Universities as drivers of the urban economies in Asia: The case of Vietnam*. Hanoi: World Bank.
Cai, H. (2012). Deploying the Chinese knowledge diaspora: a case study of Peking University. *Asia Pacific Journal of Education, 32*(3), 367–379.
Calma, A. (2010). Funding for research and research training and its effects on research activity: The case of the Philippines. *The Asia-Pacific Education Researcher, 19*(2), 213–228.
Cheetham, A. (2007, May). *Growing a research culture*. Paper presented at the Address to Academic Senate, University of Western Sydney.
Chính phủ. (2004a). *Công văn số 1269/CP-KG, ngày 6/9/2004 về việc tiếp tục hoàn thiện mạng lưới các trường đại học, cao đẳng* [Document number 1269/CP-KG, dated 6/9/2004 on continuing to develop a complete national network of universities and colleges].
Chính phủ. (2004b). *Nghị định của chính phủ Về chế độ* tiền lương đối với cán bộ, công chức, viên chức và lực lượng vũ trang, số 204/2004/NĐ-*CP, ngày 14 tháng 12 năm 2004* [A Government's Decree on the salaries for government, military, and state-owned organization officials, numbered 202/2004/ND-CP, dated 14/12/2004].
Chirot, L., & Wilkinson, B. (2010). The intangibles of excellence: Governance and the quest to build a Vietnamese Apex Research University (White Paper). The New School, Harvard Kennedy School, Fulbright Economics Teaching Program. http://www.ash.harvard.edu/extension/ash/docs/Apex.pdf
Connell, H. (2004). *University research management: Meeting the institutional challenge*. Paris: OECD.
Cooke, A., & Green, B. (2000). Developing the research capacity of departments of nursing and midwifery based in higher education: A review of the literature. *Journal of Advanced Nursing, 32*(1), 57–65.
Edgar, F., & Geare, A. (2013). Factors influencing university research performance. *Studies in Higher Education, 38*(5), 774–792.
Fairweather, J. (2009). Work allocation and rewards in shaping academic work. In J. Enders & E. de Weert (Eds.), *The changing face of academic life: Analytical and comparative perspectives* (pp. 171–192). Basingstoke: Palgrave Macmillan.
Ha, T. (2009). 400 triệu USD xây dựng bốn trường ĐH "trình độ quốc tế" [400 million USD for building four world-class universities]. http://tuoitre.vn/Tuoi-tre-cuoi-tuan/321247/400-trieu-usd-xay-dung-bon-truong-dh-trinh-do-quoc-te.html
Harman, G., Hayden, M., & Nghi, P. T. (Eds.). (2010). *Reforming higher education in Vietnam*. Dordrecht: Springer.
Hayden, M., Pettigrew, A., Meek, L., Ryan, N., Harman, K., Harman, G., et al. (2012). *Master plan for Vietnam's higher education system*. Lismore: Southern Cross University.
Hazelkorn, E. (2004). Growing research: Challenges for late developers and newcomers. *Higher Education Management and Policy, 16*(1), 119–142.
Hedjazi, Y., & Behravan, J. (2011). Study of factors influencing research productivity of agriculture faculty members in Iran. *Higher Education, 62*(5), 635–647.
Hien, P. (2010). A comparative study of research capabilities of East Asian countries and implications for Vietnam. *Higher Education, 60*(6), 615–625.
Hoàng, C. (2012). Lương tối thi u mới đáp ứng 60% nhu cầu tối thi u [Minimum salaries have only met 60% of minimum needs]. http://vietnamnet.vn/vn/chinh-tri/89798/luong-toi-thieu-moi-dap-ung-60–nhu-cau-toi-thieu.html
Hội đồng bộ trưởng. (1992). *Quyết định của chủ tich hội* đồng bộ trưởng *số 324-CT ngày 11/9/1992 về việc tổ chức lại mạng lưới các cơ quan nghiên cứu khoa học và phát triển công nghệ* [Decision of The Chair of The Comittee of Ministers, number 324-CT dated 11-9-1992 on restructuring the national network of research and technology development institutions].
Jayaram, N. (2011). Toward world-class status: The IIT system and IIT Bombay. In P. G. Altbach & J. Salmi (Eds.), *The road to academic excellence the making of world-class research universities*. Washington: World Bank Publications.
Li, Y., Li, J., & Sun, Y. (2013). Young faculty job perceptions in the midst of Chinese higher education reform: the case of Zhejiang University. *Asia Pacific Journal of Education, 33*(3), 273–294. doi:10.1080/02188791.2013.787388.
Liu, N. C., Wang, Q., & Cheng, Y. (2011). *Paths to a world-class university Lessons from practices and experiences*. Rotterdam: Sense Publishers.

Ly, P. T. (2013). Case study: The effectiveness of research and innovation management at policy and institutional levels in Vietnam. In Å. Olsson & L. Meek (Eds.), *Effectiveness of research and innovation management at policy and institutional levels: Cambodia, Malaysia, Thailand and Vietnam* (pp. 140–162). Paris: OECD.

Marginson, S. (2011). Global perspectives and strategies of Asia–Pacific research universities. In N. C. Liu, Q. Wang, & Y. Cheng (Eds.), *Paths to a world-class university: Lessons from practices and experiences* (pp. 3–27). Rotterdam: Sense Publishers.

Marginson, S. (2014). University rankings and social science. *European Journal of Education, 49*(1), 45–59. doi:10.1111/ejed.12061.

Meek, V. L., & Suwanwela, C. (2006). *Higher education, research, and knowledge in the Asia Pacific region*. New York: Palgrave Macmillan.

Nguyen, T. L. H. (2013a). *Building university research capacity-building in Vietnam: Prospects, problems, and possibilities.* (PhD thesis). The University of Melbourne.

Nguyen, T. L. H. (2013b). The challenges of developing research resources at leading Vietnamese universities. *Higher Education Management and Policy, 24*(2), 115–130.

Nguyễn, T. L. H. (2014). Research in universities. In L. Trần, S. Marginson, H. Đỗ, Q. Đỗ, T. Lê, N. Nguyễn, T. Vũ, T. Phạm, & H. Nguyễn (Eds.), *Higher education in Vietnam: flexibility, mobility and practicality in the global knowledge economy*. New York: Palgrave Macmillan.

Nguyen, & Meek. (forthcoming). Key considerations in organizing and structuring university research. *Journal of Research Administration.*

Nguyen, K. T., Griffin, P., & Nguyen, C. (2006, Nov). *Generating criteria for assessing lecturers in Vietnam's universities: A conceptual paper*. Paper presented at the Australian Association for Research in Education (AARE) International Education Research Conference, Adelaide, SA.

Nguyen, T. V., & Pham, L. T. (2011). Scientific output and its relationship to knowledge economy: An analysis of ASEAN countries. *Scientometrics, 89*(1), 107–117.

Olsson, Å., & Meek, L. (2013). *Effectiveness of research and innovation management at policy and institutional levels in Cambodia, Malaysia, Thailand and Vietnam*. Paris: OECD.

Postiglione, G. A. (2011). The rise of research universities: The Hong Kong University of Science and Technology. In P. G. Altbach & J. Salmi (Eds.), *The road to academic excellence the making of world-class research universities*. Washington: World Bank Publications.

Postiglione, G. A. (2013). Anchoring globalization in Hong Kong's research universities: network agents, institutional arrangements, and brain circulation. *Studies in Higher Education, 38*(3), 345–366.

Quân, N. (2012). Đ i mới cơ chế tài chính: Khâu đột phá trong đ i mới hoạt động KH—CN [Innovating financial mechanisms: A breakthrough in innovating research and innovation activities]. http://khoahoc.baodatviet.vn/Home/KHCN/phanbien/Doi-moi-co-che-tai-chinh-Khau-dot-pha-trong-doi-moi-hoat-dong-KH–CN/201211/242195.datviet

Quốc hội. (2003). *Luật của nước C*ộng *hòa xã h*ội chủ nghĩa Việt nam số 15/2003/QH11 *ngày 26/11/2003 về thi đua, khen thưởng* [Law of the Socialist Republic of Vietnam, rule number 15/2003/QH11 on Competition and Rewards].

Quốc hội. (2012). *Luật Giáo dục Đại học, số hiệu 08/2012/QH13, ban hành ngày 18/6/2012* [Higher Education Law, rule number 08/2012/QH13, issued on 18/6/2012].

Rath, J. (2009). A report of a New Zealand-based funding initiative designed to improve a university's research culture. *Journal of Research Administration, 40*(1), 90–100.

Rhee, B. S. (2011). A world class research university on the periphery: The Pohang University of Science and Technology, The Republic of Korea. In P. G. Altbach & J. Salmi (Eds.), *The road to academic excellence the making of world-class research universities*. Washington: World Bank Publications.

Rosser, V., & Tabata, L. (2010). An examination of faculty work: Conceptual and theoretical frameworks in the literature. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 25, pp. 449–475). The Netherlands: Springer.

Salazar-Clemeña, R. M., & Almonte-Acosta, S. A. (2007, Sept). *Developing research culture in Philippine higher education institutions: Perspectives of university faculty*. Paper presented at the seminar on "Competition, Cooperation and Change in the Academic Profession: Shaping Higher Education's Contribution to Knowledge and Research", Hangzhou. http://unesdoc.unesco.org/images/0015/001578/157869e.pdf

Salmi, J. (2009). *The challenge of establishing world-class universities*. Washington DC: World Bank.

Salmi, J. (2011). The road to academic excellence: Lessons of experience. In P. G. Altbach & J. Salmi (Eds.), *The road to academic excellence the making of world-class research universities*. Washington: World Bank Publications.

Santo, S. A., Engstrom, M. E., Reetz, L., Schweinle, W. E., & Reed, K. (2009). Faculty productivity barriers and supports at a school of education. *Innovative Higher Education, 34*(2), 117–129.

Taylor, J. (2006). Managing the unmanageable: The management of research in research-intensive universities. *Higher Education Management and Policy, 18*(2), 9–33.

Thủ tướng chính phủ. (2007). *Quyết định số 121/2007/QĐ-TTg của Thủ tướng chính phủ phê duyệt quy hoạch mạng lưới các trường đại học và cao đẳng giai đoạn 2006–2020* [Decision number 121/2007/QĐ-TTg of the Prime Minister approving the plan for developing the national network of universities and colleges for the period 2006–2020].

Thủ tướng chính phủ. (2008a). *Công văn số 177/TTg-KG ngày 31 tháng 01 năm 2008 về việc bổ sung trường đại học trọng điểm* [Document number 177/TTg-KG, dated 31/01/2008 on adding a new university to the list of developing key universities].

Thủ tướng chính phủ. (2008b). *Công văn số 1136/TTg-KGVX ngày 11 tháng 7 năm 2011 về việc bổ sung Trường Đại học Vinh vào danh sách xây dựng thành trường đại học trọng điểm* [Document number 1136/TTg-KG, dated 11/7/2011 on adding Vinh university to the list of developing key universities].

Thủ tướng chính phủ. (2010). *Quyết định số 58/2010/QĐ-TTg, 22/9/2010, Điều lệ trường đại học* [Decision number 58/2010/QĐ-TTg, 22/9/2010, University Regulations].

Trần, L., Marginson, S., Đỗ, H., Đỗ, Q., Lê, T., Nguyễn, N., et al. (2014). *Higher education in Vietnam: Flexibility, mobility and practicality in the global knowledge economy*. London: Palgrave Macmillan.

Wang, Q. H., Wang, Q., & Liu, N. C. (2011). Building world class universities in China: Shanghai Jiao Tong University. In P. G. Altbach & J. Salmi (Eds.), *The road to academic excellence the making of world-class research universities*. Washington: World Bank Publications.