CHAPTER THREE

3 HIGHER EDUCATION DEVELOPMENT IN CAMBODIA: IMPLICATIONS FOR THE ASEAN ECONOMIC COMMUNITY

Abstract

The rise of the knowledge-based economy has made higher education become even more crucial as an engine for economic growth in a global and regional context. This article aims to assess the performance of higher education institutions (HEIs) in Cambodia in preparing their graduates for the competitive labour market in the ASEAN Economic Community (AEC). The triple helix model for innovation is used as a guiding tool for analysis projecting the entrepreneurial university as an outcome of the collaboration of the higher education sector with government and industry. Providing a comparative framework that benchmarks the Cambodian case against best practices across Southeast Asia, this study shows that the institutional collaboration in the Cambodian higher education sector has remained underdeveloped, posing great challenges to Cambodian HEIs in preparing their graduates for the competitive regional labour market. The paper concludes with implications for the AEC and actions to be considered by Cambodian HEIs in preparation for the economic integration.

Keywords: Triple Helix; knowledge-based economy; higher education; entrepreneurial university; labour market

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3.1 Introduction

The last decade has witnessed the critical position of higher education (HE) in the global economy (Marginson, 2010). HE has entered the development agenda of governments and International Non-Governmental Organizations (INGOs). “HE is the modern world’s basic education… HE is no longer a luxury; it is essential for survival”, the World Bank emphasizes (2000, p. 138). HE substantially contributes to the building of the knowledge-based economy\(^1\) for the twenty-first century (Welch, 2011).

The governments of the member countries of the Association of Southeast Asian Nations (ASEAN) are no exception in stressing HE for their socio-economic development (Welch, 2011). However, the HE sector in the region is facing major challenges. At the end of 2015, ASEAN members will form the ASEAN economic community (AEC) featuring (1) a single market and production base, (2) a highly competitive economic region, (3) a region of equitable economic development, and (4) a region fully integrated into the global economy (ASEAN, 2008, p. 6). The 2015 AEC will form an integrated market comprised of ten ASEAN countries with different levels of economic development ranging from highly developed to the least developed economies. This development divide within the ASEAN poses major challenges to the envisioned integrated market (Pushpanathan, 2012). The AEC – in promoting the free flow of goods, services, investments, capital and skilled labour (ASEAN, 2008, p. 6) – will transform the labour market within and among its member countries. The free flow of skilled labour is expected to have far-reaching consequences for higher education institutions (HEIs) and their graduates in the ASEAN countries, in particular because of the development divide.

Focusing on Cambodia, one of the less developed countries in the ASEAN community, Sen (2013) advises that the AEC will increase the competition in the HE market in the region, pushing HEIs towards quality enhancement on the one hand and tightening the labour market for graduates on the other. HEIs in the region will have to make greater efforts to supply qualified graduates for an exceedingly competitive labour market. While low-income countries like Cambodia are struggling to develop its HEIs, high-income countries like Singapore or Malaysia have created the conditions that enable their universities to successfully compete in the regional market. Noticeably, universities in Singapore, Malaysia

\(^{1}\) “... trends in advanced economies toward greater dependence on knowledge, information and high skill levels, and the increasing need for ready access to all of these by the business and public sectors” (Organisation for Economic Cooperation and Development - OECD, 2005, p. 28).
and Thailand emulate the strategies of universities in the Western world, adding a third mission to their traditional core tasks of teaching and research, i.e. industry engagement for enhancing the employability of their graduates in the knowledge-based economy.

This article aims at contributing to the body of knowledge on industry engagement of current HEIs in the ASEAN region. Although the trend toward industry engagement has been widely discussed for universities around the globe (C. Sam & van der Sijde, 2014), literature for the ASEAN countries is limited, and this applies particularly to the less developed economies in the region. The region shows a significant growth in both the demand and supply of HE, but some countries are better positioned than others to take advantage of the knowledge-based economy. The developed economies, namely Singapore and Malaysia, provide examples of best practices in the region. Their tertiary sector is far advanced in terms of their universities’ industry engagement and implementation of the concept of the entrepreneurial university, a global trend in the twenty-first century. Among the developing countries in the region, Thailand has made an effort to build its HE sector to respond to the global trend while other countries are struggling to meet requirements as providers of basic academic training. The three countries are discussed in the paper as they appear to fully embrace the concept of entrepreneurial university. Cambodia, on the other hand, constitutes a contrast case which is selected as the lens through which to view the challenges and opportunities that emerging economies encounter when integrating the concept of entrepreneurial university in their HE policy.

Due to its tragic history, Cambodia is struggling to establish both a viable domestic industry and a tertiary sector (S. Chan & Strange, 2012). In the new common market, Cambodia is among the rapidly growing economies. As the number of HEIs keeps increasing in Cambodia, they have produced more graduates every year than the domestic economy is able to absorb. Unemployment among Cambodian graduates is soaring (Taing, 2011; Thust & Hor, 2013). The issue is whether the AEC will open an avenue for Cambodian graduates to find employment either at home or in the other member states of the ASEAN common market. Against the background of the competitive ASEAN HE sector, this paper aims to assess the current performance of Cambodian HEIs in preparing their graduates and labour market in the 2015 AEC. A comparative perspective is applied to establish the gap that Cambodia faces vis-à-vis economies with an advanced HE sector.
The article is structured as follows. The next section discusses the methods of data collection and analysis of the three different datasets underlying this paper. This is followed by a review of selected literature addressing the roles of universities in the knowledge-based economy both in the West and in Southeast Asia. The article then proceeds with a discussion of the Cambodian case, to be followed by a critical assessment of the performance of Cambodian HEIs in labour market mobilization in comparison to high-performing ASEAN countries. A final section provides implications for Cambodia and reflects upon actions to be considered by Cambodian HEIs to prepare for the AEC.

3.2 Research methodology

3.2.1 Research methods and data sources

This article is based on a triangulated dataset, drawing on the data established from the results of (1) a comparative literature review, (2) a content analysis of relevant reports, and (3) empirical research in the Cambodian HE sector conducted by the first author. First, the literature review includes a comparative analysis of the HE sectors across different systems and (Western and Southeast Asian) countries. Literature search was conducted through online Google Scholar and library search and by browsing the bibliographies of recent publications.

Second, secondary data such as government publications, congress reports, research publications, and education archives were collected at the Cambodian Ministry of Education, Youth and Sport (MoEYS), the library at the Cambodian Development Research Institute (CDRI) in Phnom Penh, and the Hun Sen library at the Royal University of Phnom Penh (RUPP), Cambodia. The data was used to shed light on the background and development of the HE sector in Cambodia. The data was sorted and categorized into topical themes such as historical development of HE, privatization, current issues, relevant policies and regulations, and research constraints at HEIs.

Third, the empirical evidence is based on semi-structured interviews with key actors in the Cambodian HE sector. Forty interviewees – from government institutions, HEIs, industry and international donor agencies – were identified by purposive and snowball sampling, constituting powerful methods in qualitative studies to gather rich data about issues of inquiry (Patton, 2002). From these 40 participants, 15 were purposively selected to act as the key resource persons for this paper due to their extensive experience and active involvement in the HE sector (see Appendix 1). The key participants are considered the
crucial sources of in-depth information about both the past and contemporary issues about the phenomenon under study (Fraenkel, Wallen, & Hyun, 2012). Moreover, interviews provide an interactive environment with individuals to delve into the experiences and perspectives of the participants (Schostak, 2006).

3.2.2 Data analysis

The interviews were conducted from late 2012 to 2013 based on a pre-designed topic list addressing quality of the current HE sector in terms of graduates and curricula, problems and challenges in the sector, interventions of the key stakeholders (government, HEIs, and industry), stakeholder collaboration and challenges, entrepreneurship education at HEIs, and HEIs’ readiness for the 2015 AEC. All the interviews have been transcribed and the ones conducted in Khmer language (the first author’s native language) have been transcribed into English to facilitate the coding and analysing process across transcripts. It should be noted that most interviews were conducted in Khmer language to ensure that in-depth information about the key issues of inquiry was obtained through both verbal and non-verbal language capturing the nuances of the communication.

In addition, document analysis and synthesis from the secondary data has been conducted to allow the researchers to compare it with the empirical data from the interviews. The academic literature about Singapore, Malaysia, and Thailand, related to the issues under study, has been examined to ascertain best evidence for illustration. Notably, all the three datasets have been imported into NVivo 10, a qualitative data software tool, which is employed to support the data analysis process in order to ensure that all the data have been exhaustively used across all the three datasets. Beekhuyzen et al. (2010) assert that the use of NVivo helps make the data analysis process “transparent”.

The comparison across the three datasets allows the researchers to develop a deeper understanding about the issues under study. The triple helix model, involving government-university-industry interaction for innovation, is applied as a guiding tool for analysis and reflection on the stakeholder collaboration in the current HE context in Cambodia. Moreover, the concept of entrepreneurial university is employed to assess how HEIs in Singapore, Malaysia, and Thailand are progressing to advance their HE sector for economic development. Meanwhile, this analysis offers a crucial guide to analyse the case of HEIs in Cambodia. In order to provide empirical evidence to the findings, relevant quotes from the
interviews have been extracted and used where applicable in conjunction with the secondary data throughout the finding section of this paper. Creswell (2013) indicates that the interpretation of research findings could either concur or contrast with the existing body of knowledge in academic literature. The findings are then discussed, linking the researchers’ interpretation with research by other scholars in the field in comparison with the other three countries, drawing some implications for the Cambodian HE.

Several measures were applied to ensure the ethical standards of the study. All the data were collected with great attentiveness to confidentiality, privacy, and voluntariness. As such, an informed consent form was developed and presented to request permission from all the interviewees from relevant institutions. The form provided the interviewees with information on the background of this research and its aim, confidentiality, and voluntary participation. The interviewees were assured that the information they provided would be carefully protected from third parties and used for this research purpose only.

3.3 Literature review

3.3.1 Role of university in the knowledge-based economy

Over the past decades, the role of universities worldwide underwent several “academic revolutions” – to use Etzkowitz’s term (2003) – before the present university started to take form (C. Sam & van der Sijde, 2014). The first academic revolution entails the incorporation of research elements at a graduate level in a largely teaching-focused institution (Etzkowitz, 2003a; Etzkowitz & Leydesdorff, 2000). Academic research was not business bound since the university was basically seen as a provider of trained people to work in other institutions (Etzkowitz, 2008). The second academic revolution emphasizes the inter-relationship between teaching and research in which the combination of both domains is assumed to be productive for socio-economic development (Etzkowitz, 2003a, 2008). In other words, research findings and knowledge can be applied by government and industry to promote economic growth. Etzkowitz and Leydesdorff (2000) assert that the increasing importance of teaching and research for development has brought the third mission into existence – the role of universities in economic development. Under the third mission, universities have become actively engaged in a range of activities: patenting and licensing (Mowery & Sampat, 2001; Sampat, 2006; Shane, 2004), research-based spin-out ventures (Etzkowitz, 2008), contract
research (Etzkowitz et al., 2000; Welch, 2011), and continuous professional development (Fink et al., 1999; Zukas, 2012).

In modern society, due to the emergence of the knowledge-based economy, information technology and global competitiveness, universities have expanded their roles from the generation and dissemination of new knowledge to knowledge exploitation for innovation in the form of the entrepreneurial university (Etzkowitz, 2003a, 2008; Etzkowitz & Dzisah, 2007; Etzkowitz et al., 2000; Etzkowitz & Zhou, 2007). In line with this, Fayolle and Redford (2014) assert that the incorporation of the third mission activities have transformed the traditional university into an entrepreneurial university, blurring a government-university-industry boundary. Clark (1998a) has encouraged universities to become entrepreneurial in education. Framed in terms of the third mission, entrepreneurial activities are increasingly becoming an integral part of many universities in the United States and worldwide (Etzkowitz, Asplund, & Nordman, 2001b). Etzkowitz and Leydesdorff (2000) also note that the role of universities has become progressively critical and challenging as demands on academic institutions to meet this expectation keep rising. Universities are viewed as the powerful engines of innovation and development in science and technology and other creative areas (Sharma, Kumar, & Lalande, 2006).

Therefore, universities in many developed and emerging economies are inclined to operate in line with the triple helix model of innovation as designed by Leydesdorff and Etzkowitz (1996). The model has increased the role of university as the crucial source of knowledge for economic development through its increasing involvement in firm formation based on technologies initiated in academic research. In this sense, universities push beyond their traditional roles of knowledge preservation and transfer by taking on business and governance functions, and such an emerging role has engaged the university in venture capital and incubation activities supported by industry and government (Etzkowitz, 2008). Entrepreneurship has become a new role that modern universities need to embrace besides their traditional roles as educators and creators of scientific knowledge. The role opens avenues to the commercialization of academic knowledge to respond to the global competitiveness, changing social demands, and limited public funding and resources.

The transition from the traditional to the modern universities has largely been initiated in the West. However, with the rise of East and Southeast Asia as the global powerhouse of economic growth, the question has to be raised as to whether universities in this region reflect
this shift and take the same route to modernization as their Western counterparts. Aware of
the pitfall of ethnocentrism, we will critically assess the applicability of Western-based
literature to the HE sector in Southeast Asia where many HEIs are still struggling to produce
quality education.

3.3.2 Regional trends toward the entrepreneurial university in Southeast Asia
The last few decades have seen a rapid expansion of the HE sector in Southeast Asia. This
growth has undoubtedly brought about significant changes to the sector in the region. M. N.
N. Lee and Healy (2006) have indicated some reforms in Southeast Asia: privatization of HE,
corporatization of public HEIs, introduction of the fee-paying system, and public-private
partnership in HE. Moreover, an increasing social demand for HE has heightened pressures
on HEIs to diversify their income sources due to limited public funding. In this sense, HEIs
are encouraged to perform entrepreneurially to become financially independent (Clark,
1998a). Notably, the HE expansion in the region has led to the establishment of different
types of HEIs, such as traditional teaching and research universities, virtual universities,
polytechnics, technical institutes, open learning institutes, and community colleges, to serve
the growing different needs of diverse groups of students (M. N. N. Lee & Healy, 2006).
Chet (2006) has cautioned that such a massive growth may result in the formation of HEIs of
“dubious quality” if the quality assurance system is not properly in place as was evidenced in
the case of Cambodia.

The most distinct feature of HE across the region is the rise of privatization. That is,
the private sector has come in to fill in the widening gap between the growing demand for HE
and the limited public funding (Asian Development Bank, 2012). The turn of the twenty-first
century has seen private HEIs becoming dynamic and dominant in absorbing far more
students for the tertiary entry than the public ones in some countries in the region (Welch,
2007, 2011). This development trend has implications for how HEIs are reorganized to
sustain themselves in the competitive HE market (M. N. N. Lee & Healy, 2006).

3.3.3 The entrepreneurial university as a driver of the triple helix model: Country cases
Currently, in the developed countries in the region, HEIs are moving toward the
entrepreneurial university model to diversify their income sources and contribute to economic
development. Two countries stand out in this development, Singapore and Malaysia. In
Singapore, the National University of Singapore (NUS), which used to be a traditional
university focusing on teaching and research, adopted an entrepreneurial university model in 2001 (Leong, Wee, & Ho, 2008; Wong, 2007; Wong, Ho, & Singh, 2007). Such a shift corresponds with the interests and policies of the government which plays a dominant role in research and development (R&D) to transform a manufacturing- to knowledge-based economy (Leong et al., 2008). The rise of the entrepreneurial university is marked by the establishment of a new division in the NUS known as NUS enterprise (Leong et al., 2008; Wong, 2007). This division has enabled the university to build its capacity as an incubator for new technology companies, a role traditionally played by industry (Leong et al., 2008). Moreover, start-up funds are created to provide seed funding for university spin-offs and student enterprises (Leong et al., 2008). The New Venture Support has also been established to assist NUS professors to commercialize their inventions and knowledge (Wong, 2007). Meanwhile, the entrepreneurship centre in the NUS enterprise is created to offer entrepreneurship education to students and to raise awareness and interest in entrepreneurship among students and faculty through outreaching activities (Wong et al., 2007).

The Singapore government plays an active role in this transformation by promoting a university-industry linkage (UIL) for science and technology development through the establishment of national bodies: the National Science and Technology Board (NSTB) and National Computer Board (NCB) (J. Lee & Win, 2004). The government has also adopted a decentralization policy to provide universities with greater autonomy and flexibility to promote innovation and creativity (Mok & Lee, 2003). Meanwhile, the research funding for universities has been raised; for instance, the funding at the NUS was increased from S$54 million in 1996 to S$156.6 million in 2001 (Koh & Wong, 2005). J. Lee and Win (2004) has shown the strong UIL based in the university campus. That is, Kent Ridge Digital Labs (KRDL) of the NUS, funded by the NSTB, was established to lead the R&D of information and networking technology by collaborating with industry partners in technology transfer. Mae Phillips and Wai-chung Yeung (2003) assert that science parks, established as R&D places, are located near the NUS and other major research institutes to create an environment conducive to firm interaction to promote R&D capability. Despite success in its transformation from being an education provider and knowledge creator to frontrunner in knowledge commercialization through patenting, licensing to private industry and spinning-off new ventures, Wong et al. (2007) have found that the “entrepreneurial university” is still in an early stage. Although the change of the NUS’s contribution to the Singapore economic
development may not result only from the model, some key elements of the model are found necessary to enable the university to contribute more effectively (Wong et al., 2007).

In Malaysia, universities have followed a similar pathway toward the entrepreneurial university. Almost all leading public universities have embraced the triple helix nexus through creating commercial branches and their own Technology Transfer Offices (TTOs) (Razak & Saad, 2007). The TTOs are particularly aimed at knowledge commercialization and income diversification (Macpherson & Ziolkowski, 2005). The Ministry of Higher Education of Malaysia has promoted collaborative R&D and a strong UIL at the universities (Sidhu & Kaur, 2011) through the government policies since the early 1990s. Rasiah and Govindaraju (2009) assert that the government has increased its budget allocation for R&D and technology commercialization, and added science fund to support R&D in universities linking with industry. The UIL is strengthened through science parks as they can increase productivity rates and provide a resource network assisting firms (Malairaja & Zawdie, 2008). The government has also established technology incubators and the Multimedia Super Corridor to provide “affordable office space and access to modern faculties; linkages to researchers; networking; and venture capital funding” (Malairaja & Zawdie, 2008, p. 732).

Chandran, Sundram, and Santhidran (2013, p. 3) note that despite the government’s efforts, UIL remains impeded by some underlying challenges: “mismatch of R&D activities, industrial R&D structural weaknesses, and the missing intermediary institutional role”. It should be noted that about 90 percent of the universities’ research collaboration occurs within the government framework, while collaborative research with industries accounts for only 3-9 percent of the total funding within 2006-2011 (Chandran et al., 2013). Moreover, entrepreneurship education is offered to students to prepare them for the knowledge-based economy (Cheng, Chan, & Mahmood, 2009). Despite this, Marginson, Kaur, and Sawir (2011) claim that the government-university-industry collaboration is still in an “infant stage”.

Similarly, Thailand is pushing the establishment of the modern university modelled after Western examples (Altbach & Umakoshi, 2004; Schiller, 2006). Schiller and Liefner (2007) show that the first Science park has been created by the National Science and Technology Development Agency (NSTDA) and business incubators have been established in twelve universities with the support from the Commission on Higher Education (CHE). The National Economic and Social Advisory Board (NESAB) plays the most crucial role in
funding (Chanthes, 2012). Moreover, UIL offices have been created in universities for research excellence (Schiller & Brimble, 2009). However, the collaboration is deemed limited and the potentials for extensive industry linkage has remained weak (Schiller & Liefner, 2007). The underlying issue applies to a capability and credibility gap at the UIL offices and a lack of consistent policies for UIL from the government and universities (Schiller & Brimble, 2009). Based on the study by Worasinchai, Ribière, and Arntzen Bechina (2009), Thai universities face several challenges in their attempt to collaborate with the government and industry. The challenges include an absence of industry-related programs, a shortage of qualified graduates, inadequate resources, lack of recognition from industries as a central player in the economy, and limited cooperation of the industries and related sectors (Mongkhonvanit, 2008). Hershberg, Nabeshima, and Yusuf (2007, p. 937) assert that the government policy is not so supportive as to promote UILs due to “inattention to their potential and … the weak political incentives and administrative capability”.

Intarakumnerd and Schiller (2009) conclude that most of the UIL projects are confined to consulting and technical services due to universities’ limited academic capabilities and industries’ modest demand for UIL. In the survey of 136 industrial projects at Thai universities, consulting and technical services account for 49 percent and 35 percent respectively (Schiller & Liefner, 2007). Entrepreneurship training is also offered for the UIL activity purpose (Brimble & Doner, 2007). The move toward the entrepreneurial university is underway but still in an early stage (Table 3.1).
Table 3.1: Triple helix model in the three country cases

<table>
<thead>
<tr>
<th>Country case</th>
<th>Government</th>
<th>University</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>Economic policy shift to knowledge economy National boards: NSTB and NCB Decentralization policy Increase in research funding for universities Science parks</td>
<td>Incubator for technology companies Start-up funds for spin-offs and student enterprise New venture support for knowledge commercialization Entrepreneurship centre, offering entrepreneurship education</td>
<td>Funding and insights into technology market University partner in R&amp;D</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Economic policy shift to knowledge economy Budget increase for R&amp;D and technology commercialization Science fund in R&amp;D for universities Decentralization policy Science parks Technology incubators &amp; Multimedia super corridor for UIL</td>
<td>Creation of commercial branches Establishment of TTOs Entrepreneurship education</td>
<td>University partner in R&amp;D Meagre funder in collaborative research</td>
</tr>
<tr>
<td>Thailand</td>
<td>Knowledge economy in transition National bodies: NSTDA, CHE, NESAB Decentralization policy Unsupportive policy to promote UIL</td>
<td>Business incubators UIL offices for research Entrepreneurship training</td>
<td>University partner in consulting and technical services Meagre supporter to university</td>
</tr>
</tbody>
</table>

All in all, the entrepreneurial university has emerged in Southeast Asia, adopting the triple helix model of innovation. However, it appears that this shift occurs at the level of the teaching-focused institution and passes over the phase of developing and integrating research in academic teaching. In Etzkowitz’s terms, these HEIs skipped the “first academic revolution”. The competitive HE market has driven HEIs in Southeast Asia to become entrepreneurial through traditional and/or innovative services for income generation (M. N. N. Lee & Healy, 2006). Unlike in Western countries, however, the governments of the ASEAN countries discussed here have played a leading role in promoting the triple helix
model for their national economies. As demonstrated, policy and financial interventions from the government are needed to encourage HEIs to become entrepreneurial. The adoption of the triple helix model to respond to the globalized knowledge-based economy poses a great challenge to the ASEAN countries whose economies still depend largely on manufacturing and agriculture. Nevertheless, it is imperative that the less-developed countries in Southeast Asia develop their HEIs within the triple helix nexus in order to avoid lagging too far behind the developed and emerging economies in the region, particularly in the integrated market of the AEC – as will be shown in the following section for the case of Cambodia.

3.4 The case of Cambodia

Cambodia, a former French protectorate (from 1863 to 1953), has undergone a series of educational reforms in its history due to political and socio-economic changes. Cambodia suffered a brutal Khmer Rouge regime from 1975 to 1979, resulting in a massive loss and damage in both human resources and infrastructure (Ayres, 2000; Dy, 2013a; Prasertsri, 1996). After the fall of the genocidal regime, civil war prevailed for a decade (Duggan, 1997). Such a serious situation has brought great challenges for the Cambodian government to restore its national education system virtually from scratch.

To keep pace with other countries in the region, the Cambodian government has turned its attention to HE development to promote economic growth. In 2003, the Accreditation Committee of Cambodia (ACC) was founded as an external quality assurance body to ensure and promote HE quality. The government has delegated some management power to some public universities by granting them the status of Public Administrative Institution (PAI) to provide greater autonomy for public HEIs in terms of academic and financial issues (Chet, 2006). In 2007, the education law was passed for effective and efficient governance and development of the Cambodian education sector. A number of policy actions are also in place such as the master plan for research development 2011-2015 (2011), the national policy on HE vision 2030 (2014), and the National Qualifications Framework12 (2014), etc. Noticeably, the government’s emphasis on the HE sector has recently been reflected in the first comprehensive Higher Education Quality and Capacity Improvement Project (HEQCIP) 2010-2015 (co-funded by the government and the World

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12 The framework is developed by the ACC, the Ministry of Labour and Vocational Training (National Training Board), coordinated by the Council of Ministers, to respond to the ASEAN Qualifications Reference Framework, which requires each member country to have the National Qualifications Framework.
Bank), the National Strategic Development Plan 2014-2018, and the Education Strategic Plan 2014-2018. Such an emphasis is linked with the Cambodia’s development vision 2030 to become a lower-middle and upper-middle income country by 2018 and 2030 respectively.

The privatization in the HE sector since 1997 has clearly marked a rapid growth in the number of HEIs, 61 percent of which are dominated by the private HEIs (MoEYS, 2015a). Such an expansion, however, has not come along with sufficient resources, carrying implications for efficiency and teaching quality notwithstanding the establishment of the ACC (Ford, 2003, 2006). Chet (2009) has found that poor quality programs, inadequate quality assurance, and weak governance and management have remained existent in the sector. Ford (2013) contends that there is an oversupply of under-skilled graduates in some areas and an undersupply in others of high demand for the economy. The MoEYS (2014a) also highlights a growing mismatch between graduate skills and labour market demand in Cambodia. R. Sam et al. (2012a) assert that most HEIs offer similar courses such as business, economics and information technology, ignoring other fields such as science, mathematics, agriculture and health. Chet (2009) notes that research is almost non-existent in the HE sector in Cambodia. Thus, Cambodia risks being left behind in the region unless it improves its HE sector, a crucial engine for economic growth and regional integration.

3.4.1 The capability gap of HEIs in producing qualified graduates

The interviews conducted among Cambodian HE experts and officials reveal that curriculum development is mainly based on lecturers’ experience, observation and discussion with no scientific study. A senior education official relates, “…there is no clear process for developing curricula such as needs analysis, survey, etc.” (ID=P02). In other words, little has been done to study the needs of the labour market for the curriculum update. Reportedly, education officials do not have any expertise to evaluate the course content, leaving individual HEIs solely responsible for designing their own programs though an approval from the MoEYS is required. Moreover, the learning method is based on rote learning, underlying the legacy of the traditional French model introduced to Cambodia. A donor representative contends, “Our way of learning is just about telling theories and memorizing them without any research… universities and users…are disconnected” (ID=P06). Nith (2013) affirms that there is a disconnection between HEIs and the private sector, and only few HEIs have program linkages with industries. Despite this, the recent Cambodia National Qualifications
Framework is viewed to serve as a basis for HEIs to develop their curricula although it has yet to be widely implemented.

The interviews also show that HEIs cannot afford to offer new courses or programs due to a shortage of qualified staff with the right expertise. For science subjects in particular, there are limited facilities such as laboratories, equipment, etc. In this sense, the curricula tend to be left outdated, failing to equip the students with skills and knowledge necessary for the changing labour market. An education consultant asserts, “HEIs are not ready to provide students with transferable skills” (ID=P03). As regards entrepreneurship education, some HEIs offer it as one of the subjects particularly in their business programs to teach concepts and theories, providing minimal hands-on practices and experiences shared by successful entrepreneurs. There is only limited budget to offer such a course. A vice rector from a public HEI argues:

… with the sufficient school budget, we can design such a course to help students know how to earn money and become entrepreneurs… As we have limited budget and if we share it with them, we will be in trouble. (ID=P05)

This situation forms a constraint for HEIs to produce qualified graduates for the country’s economy and to promote their entrepreneurial spirits. Nonetheless, over the last few years, HEIs have shown their attempts to update their curricula based on the input of their faculty members, cooperation with overseas partner universities and even engagement with industry as the AEC is approaching. Some public HEIs have become member universities of the ASEAN University Network (AUN)\(^\text{13}\), working toward quality higher education and collaboration among universities in the region and beyond.

Notably, most HEIs, heavily dependent on tuition fees, try to maximize student enrolments, even exceeding their capacity albeit aware of the affected quality. For instance, most HEIs are offering mainly market-friendly study areas, particularly in social sciences such as business, economics, law, etc. due to the guaranteed enrolments and their less costly operation. In this respect, they are known to be operated like businesses to secure their position in the competitive marketplace. An advisor at a public HEI relates, “They [private HEIs] try to make profits or at least to survive their business rather than prioritizing societal

\(^{13}\) AUN’s activities are classified into five areas: (1) youth mobility, (2) academic collaboration, (3) standards, mechanisms, systems and policies of higher education collaboration, (4) courses and program development, and (5) regional and global policy platforms (AUN, 2015, para. 4).
needs and country development” (ID=P09). An education policymaker acknowledges, “HEIs are not offering the study areas needed for the country and national economy, but they are responding to a small market need” (ID=P04). Considering their profit-seeking activities, both public and private HEIs are seen to increasingly blur their distinction except the fact that, with the government funding, public HEIs have continued to offer some study areas which are costly to operate and less attractive to students. Despite this, Ahrens and McNamara (2013) argue that public HEIs are 80 percent privately funded. With no government subsidy, private HEIs are known to set their entry requirements moderately and apply them flexibly to enrol as many students as possible since tuition fees are almost the sole income source to cover their operational expenses. In other words, the market forces have turned most HEIs in Cambodia to aim at profitability instead of quality. This commercial practice is, however, seen to be put under a certain control. Besides having to meet the minimum standards\textsuperscript{14} of the ACC for institutional accreditation, each HEI is required by the MoEYS to establish an internal quality assurance unit to ensure quality education. Although not yet properly implemented as required, they are viewed as a good means to regulate HEIs from steering away from their core values.

Reportedly, most if not all HEIs are in a critical shortage of qualified academic staff. MoEYS (2014a) reports that of 10,842 lecturers including both nationals and expatriates in the academic year 2012-2013, only 805 of them held a doctoral degree, accounting for around 7 percent in total. Dy (2013a) points out that most of the qualified and senior lecturers in public HEIs moonlight at private universities due to their meagre salary from the government. The system, in which there are neither research incentives for lecturers nor promotion or pay rise based on research achievements (Dy, 2013a), does not promote academic productivity, and the low salaries contribute to a brain drain to the private sector. A rector at a public HEI asserts:

…some [qualified] people stop working for us [HEI] when they are offered higher salaries elsewhere. Lecturers who are not outstanding or qualified will continue working and doing research… (ID=P07)

This situation has driven a number of qualified Cambodian graduates to work in sectors unrelated to their qualification. This is an obstacle to the formation of a critical mass to build

\textsuperscript{14} (1) Mission, (2) Governing structure, management, and planning, (3) Academic program, (4) Academic staff, (5) Students and student services, (6) Learning services, (7) Physical facilities, (8) Financial planning and management, and (9) Dissemination of information
capacity and credibility for HEIs to attract external stakeholders for collaboration. Meanwhile, there are also some HEIs managing to retain qualified staff and even attract overseas graduates and Cambodian returnees to work – with proper remuneration – in teaching and management positions for quality improvement. Clearly, there are some competent returnees investing in the establishment of private HEIs with commitment to quality education.

Moreover, the national budget for R&D is almost non-existent. The OECD (2013) shows that Cambodia’s expenditure on R&D is minimal. Dy (2013b) notes that R&D is conducted through the external assistance projects linked with the government agencies while the public funding on R&D is hard to trace or too small. In addition, the interviews reveal that HEIs do not have their own research budget since their income, derived mainly from the tuition fees, is considered too limited to cover research expenses. Despite this, over the last few years, research is widely discussed and started to emerge in many HEIs due to funding from the HEQCIP, providing opportunities for HEIs which are qualified and willing to conduct research for their capacity development. Some research training workshops have also been organized by the MoEYS to develop faculty research capacity. This has marked a turning point in the HE sector in Cambodia in response to the national research policy in education although the research quality is found modest and research culture is wanting after the project concludes.

3.4.2 Government-academia-industry interaction in the Cambodian HE sector

The stakeholder collaboration in the HE sector in Cambodia is very limited. The Cambodian HEIs face challenges to promote the triple helix culture: lack of government interventions, limited resources of HEIs, and capability and credibility gaps within HEIs and industry. The interviews show that UIL is generally left to HEIs as their responsibility. The government has yet to provide specific policy directions or financial interventions to promote UIL to expand HEIs’ roles for innovation and development. A senior manager from the private sector asserts, “There needs to be a clear vision set by the MoEYS to make the interaction between university and private sector move successfully” (ID=P11). A senior education official argues, “We will help refer a company to a particular university if the company approaches us for our assistance or guidance, but we don’t require them [HEIs] to work with the private sector” (ID=P01).
The capability of HEIs to interact with the private sector is inadequate due to insufficient facilities and equipment, limited funding and experience, and shortage of qualified resource people, failing to meet industry’s high demands. An HEI director establishes:

We cannot supply based on their [industry’s] demand due to our limited resources. For example, they want us to develop a particular product for them with a lot of criteria which we find it hard to meet. (ID=P10)

The interviews reveal that HEIs appear to have no budget allocated for collaboration with the private sector as most of them survive mainly on the tuition fees as the key source of income. The public HEIs receive limited public funding primarily to cover public servants’ basic salaries, while private HEIs obtain no government subsidy. Such constraints are restricting HEIs from interacting with the private sector albeit aware of the centrality of external stakeholder collaboration for quality education. Although some HEIs are seen to work closely with some industries, their interaction is rarely for research or external funding. It is mainly aimed at student internships and staff recruitment.

Notably, the university-industry collaboration is seldom formalized at an institutional level. Collaboration is initiated and maintained between individual faculty members and firms, and it has remained rather informal and personal. The UIL concept has appeared as a new phenomenon in the sector. Feeling reluctant to accept this concept in the Cambodian context, a vice rector at a public HEI explains:

This concept in Asia tends to fail except in Hong Kong. It seems to result in nothing when the two institutions interact with each other. It is still unclear which one controls which one… [In Cambodia] when some private companies come to work with us, they want to launch their advertisements, aiming to take advantage of students. They do not want to get success together. (ID=P05)

The limited UIL is also considered attributable to the fact that the main industries in Cambodia, such as garment, construction or tourism, do not require university degrees but those from technical institutes, except at managerial levels. In other words, industries mostly demand low skilled and unskilled labour. Meanwhile, industries also lack capacity and resources to invest in technological development since technology transfer is dependent on foreign partners and investors. An HEI director complains, “Industry wants us to produce
qualified graduates, but it does not want to have any involvements” (ID=P10). Reportedly, the lack of cooperation also results from the profit orientation of the industry as the collaboration with HEIs involves time and money. A senior manager asserts, “… even in the project involving internship, we also think about finance. As a project team, we discuss how we can encourage employers to take students for internships by giving them incentives” (ID=P14). Overall, UIL has remained underdeveloped as the two institutions appear divided.

However, to promote stakeholder collaboration, the MoEYS has recently established the Higher Education Technical Working Group (HETWG). Policy dialogue and joint decision-making between the MoEYS and its development partners are promoted through the HETWG under a Joint Technical Working Group (JTWG) (Dy, 2015). The establishment of the HETWG is considered a crucial milestone to create a discussion forum on higher education issues among different stakeholders (MoEYS, 2015b). Moreover, through the HEQCIP, USD 3.2 million is allocated to facilitate and promote research at HEIs (Dy, 2013a), which is viewed as an effective mechanism to bring stakeholders to work together. In addition, a Memorandum of Understanding (MOU) between the Cambodia Chamber of Commerce and a few HEIs in Cambodia was signed in 2014 to forge the relationship between the private sector and HEIs. Although the implementation of the MOU has yet to yield any satisfactory improvements, it has signalled awareness and a positive move toward the triple helix model in the HE sector in Cambodia.

3.5 Discussion

The empirical findings have shown that the government-university-industry interaction as modelled in the triple helix model (Etzkowitz, 2008; Leydesdorff & Etzkowitz, 1996, 1998) has remained underdeveloped in Cambodia. While the model appears as a new phenomenon in Cambodia, it has manifested itself in Singapore, Malaysia and Thailand, albeit in an early stage, compared to the Western countries. Etzkowitz (2003a) has stressed that this stakeholder collaboration is key to innovation and economic development in the knowledge-based economy. Notably, in Cambodia, UIL comes in a limited manner mainly in the form of student internships and employment. The interaction is considered rather informal or individual albeit at a department level at times. Brimble and Doner (2007) have also found UIL in Thailand rather informal or even conducted outside the normal academic work. Conversely, the UIL in Singapore and Malaysia is strongly promoted by their governments through policy and financial interventions (e.g. Koh & Wong, 2005; J. Lee & Win, 2004;
Malairaja & Zawdie, 2008; Mok & Lee, 2003; Rasiah & Govindaraju, 2009). In Cambodia, the underdeveloped system is due to the nature of the current industry, lack of government intervention, the capability and credibility gap of industry and HEI, and a shortage of human and financial resources. Retrospectively, this pitfall is attributed to the legacy of the French model (C. Sam & van der Sijde, 2014), focusing mainly on vocational training rather than research. Importantly, the tragic historical background of the country has undeniably left the system in such a critical position for restoration.

Clearly, instead of promoting entrepreneurial activities, most HEIs in Cambodia are inclined to use higher education for their commercial purpose. This practice is moving away from the concept of the entrepreneurial university (Bercovitz & Feldman, 2006; Clark, 1998a; Redford & Fayolle, 2014; C. Sam & van der Sijde, 2014) and the principles of the triple helix model (Etzkowitz, 2002, 2008; Leydesdorff & Etzkowitz, 1998). Etzkowitz and Leydesdorff (2000) stress that the university plays a critical and challenging role in leading innovation initiatives in the knowledge-based economy. Unlike Singapore, Malaysia and Thailand, Cambodia has shown to clearly lag behind in injecting the concept of stakeholder collaboration and entrepreneurial university into the development of the HE sector. The experiences from the three countries, particularly Singapore, have clearly shown that the intervention of the government is very crucial to promote the triple helix for the national competitiveness in the knowledge-based economy. Although the triple helix nexus in the Malaysian and Thai HE sector has not yet been well embedded, the governments have launched their policy and financial interventions to bring the stakeholder collaboration into existence. This suggests that to initiate a reform in the sector, the role of the government is clearly essential. Malairaja and Zawdie (2008) assert that the UIL in Malaysia would not have existed without the research grants from the government.

The study has shown that most Cambodian HEIs originally started with its traditional mission of teaching. They then started to commercialize their teaching to sustain their place in the marketplace before they begin to incorporate research. Conversely, HEIs in Singapore, Malaysia and Thailand started as teaching institutions and passed over research as the second mission, but they are globally driven to adopt the concept of entrepreneurial university through research and innovation for income diversification and economic development. This situation implies that the development of HEIs in Cambodia has not yet followed the global trend toward the entrepreneurial university for national competitiveness, while HEIs in some
ASEAN countries are moving in this direction in response to the competitive labour market in the AEC.

The study has also shown that the curriculum, profit orientation, and brain drain in HEIs are the critical issues which hamper the quality improvement of HEIs in Cambodia, particularly during the upcoming AEC. Sen (2013) notes that as the AEC is an opportunity for cross-border education, top regional universities may open their branch campuses to attract Cambodian students from the local ones. In this regard, local HEIs are likely to collapse if they do not take any serious measures to overcome the existing challenges to strengthen the quality. Despite this, MoEYS (2014b, p. 35) regards the ASEAN integration as “opportunities for collaboration between institutions, joint research and quality standard setting”. In this sense, the AEC could be an alert to HEIs in Cambodia to make greater efforts to prepare their students for the competitive ASEAN common market. Since any steady jobs or careers may no longer be guaranteed, entrepreneurship education is found incorporated in HE in Singapore (Wong et al., 2007), Malaysia (Cheng et al., 2009), and Thailand (Brimble & Doner, 2007) to promote an entrepreneurial spirit among students, while the chances are rather dim in Cambodian HEIs.

3.6 Conclusion

The HE sector in Cambodia is in a challenging position facing rapid changes in HE globally and regionally. This absence of stakeholder collaboration in this sector constitutes a factor which could lock the potentials of HEIs in Cambodia to diversify their income sources and to reach out for more activities for their quality improvement and economic development. Whereas HEIs in some ASEAN counterparts are taking seriously the concept of entrepreneurial university pushing toward innovation, Cambodia appears to exclude the entrepreneurial university model to adopt the profit-based business model.

This critical situation has put Cambodia at high risk of being unprepared for producing qualified graduates for the national competitiveness in the AEC and participation in the knowledge-based economy. The lack of effective government interventions, limited interaction between HEIs and industry, and low capacity of HEIs are the risk factors which may hinder HEIs from supplying the right and qualified graduates to respond to the competitive labour market. The AEC may inject a great competitiveness in both local and regional labour markets, which may have adverse impacts on tertiary graduates and even...
leave them unemployed or underemployed unless HEIs make efforts to address the current issues and link themselves up with the industry. The 2015 AEC could be either a challenge as HEIs in Cambodia seem unprepared for the competition, or an opportunity as the knowledge transfer from other ASEAN countries might help enhance the performance of HEIs in producing qualified graduates.

The study has implications for HEIs wishing to improve the quality of the education offered and to adequately prepare graduates for the AEC. First, it is important to promote government-university-industry collaboration to improve the quality of education offered by Cambodian HEIs. To achieve this, the government needs to take the lead through its policy and financial support rather than leaving the task as the sole responsibility of HEIs. Research constitutes an effective forum to bring all stakeholders to work together. Second, entrepreneurship education needs to be incorporated in university curricula to inject an entrepreneurial mind-set into graduates for the competitive labour market. Third, HEIs need to perform entrepreneurially by involving themselves in other services such as research, consultancy, etc. in addition to teaching, to improve their employability. For this purpose HEIs are required to develop their capacity to produce quality research. Finally, R&D for innovation can never be neglected as Cambodia’s economy is moving toward knowledge-based future. This requires a large investment from the government. However, as a donor-dependent country, Cambodia will need to work with its development partners to create synergy to push R&D forward to enhance its competitiveness in the AEC.
APPENDICES

Appendix 3.1: List of research participants in the interviews

<table>
<thead>
<tr>
<th>ID</th>
<th>Position of the research participants</th>
<th>Interview date</th>
</tr>
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<tbody>
<tr>
<td>P01</td>
<td>Director of department</td>
<td>28 December 2012</td>
</tr>
<tr>
<td>P02</td>
<td>Director of department</td>
<td>31 December 2012</td>
</tr>
<tr>
<td>P03</td>
<td>International education consultant</td>
<td>10 February 2013</td>
</tr>
<tr>
<td>P04</td>
<td>Education policymaker</td>
<td>12 February 2013</td>
</tr>
<tr>
<td>P05</td>
<td>Vice-rector of public university</td>
<td>15 March 2013</td>
</tr>
<tr>
<td>P06</td>
<td>Senior program officer of international donor agency</td>
<td>21 March 2013</td>
</tr>
<tr>
<td>P07</td>
<td>Rector of public university</td>
<td>22 March 2013</td>
</tr>
<tr>
<td>P08</td>
<td>Program director of public university</td>
<td>25 March 2013</td>
</tr>
<tr>
<td>P09</td>
<td>Technical advisor of public university</td>
<td>26 March 2013</td>
</tr>
<tr>
<td>P10</td>
<td>Director of public HEI</td>
<td>23 April 2013</td>
</tr>
<tr>
<td>P11</td>
<td>General manager of employers and business association</td>
<td>23 April 2013</td>
</tr>
<tr>
<td>P12</td>
<td>Director of department</td>
<td>26 April 2013</td>
</tr>
<tr>
<td>P13</td>
<td>Deputy director of department</td>
<td>29 April 2013</td>
</tr>
<tr>
<td>P14</td>
<td>Senior manager of employment agency</td>
<td>02 May 2013</td>
</tr>
<tr>
<td>P15</td>
<td>General manager of employment agency</td>
<td>02 May 2013</td>
</tr>
</tbody>
</table>
### Appendix 3.2: Supporting documents on the HE sector in Cambodia

#### Types of documents

<table>
<thead>
<tr>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Cambodian Government; MoEYS – Phnom Penh</td>
</tr>
</tbody>
</table>

#### Government documents:

- Cambodia Education Law (2007)
- Cambodia National Qualifications Framework (2014)
- Education Strategic Plans 2006-2010, 2009-2013, & 2014-2018
- Higher Education Performance report 2008
- MoEYS’s letter No. 559 dated 07 February 2013, appointing members for Higher Education Sub-technical Working Group to formulate policy and strategy for higher education
- National Strategic Development Plan 2009-2013 & 2014-2018
- Policy on Higher Education Vision 2030
- Praka (proclamation)1435 dated 12 September 2007 on detailed conditions and criteria for HEI establishment
- Royal Decree on Accreditation of Higher Education (2003)
- Royal Decree on Legal status of Public Administrative Institution (1997)

#### Archives

- Coyne, Geoffrey (17-19 December 1997), Improving the relationship between higher education and employment in Cambodia: The use of tracer studies, Royal University of Phnom Penh.
- Ratcliffe, Mike. Rationalization of higher education, Cambodia: Technical assistance needs (1999?); Strategy paper for higher education development (2004?).

Hun Sen Library, Royal University of Phnom Penh – Phnom Penh
Reports


Cambodia the next five years – An agenda for reform and competitiveness. Cambodia Outlook Brief 2014. No. 01.


Possibilities and policy priorities for sustainable and inclusive growth. Cambodia Outlook Brief 2013. No. 01.
