

The Comparative Analysis of ASEAN Higher Education: An Outlook on Future Policy Redesign for THAILAND

Rugphong Vongsaroj* Thanavutd Chutiphongdech** and Tunyaporn Sutjaritwaranggoon***

Received: March 06, 2022 Revised: October 27, 2022 Accepted: October 27, 2022

Abstract

This research article aims at suggesting higher education policy redesign for Thailand. Through a documentary research approach, lessons learned were drawn from Singapore and Malaysia countries providing excellent higher education development regarding World Economic Forum. The comparative analysis revealed that Singapore and Malaysia those adopted as a important tool for enhancing national competitiveness through concrete higher education development plan and lifelong learning platforms. They have high spending and investing proportion in higher education and research sector focus on developing learners' skills by networking with stakeholders in the ecosystem. Lastly, meticulous policy executions were steadily found in Singapore and Malaysia.

Keywords: Higher education policy, Policy redesign, ASEAN, Foresight, Thailand

* Graduate School of Tourism Management, National Institute of Development Administration
148 Serithai Road, Klong-Chan, Bangkapi, Bangkok THAILAND

E-mail: rugphong.v@nida.ac.th

** Faculty of Sports Science, Chulalongkorn University

Rama 1 Road Pathumwan Bangkok 10330

Email: Thanavutd.C@chula.ac.th

***National Institute of Development Administration

148 Serithai Road, Klong-Chan, Bangkapi, Bangkok THAILAND

Email: tunyaporn.s@nida.com

การวิเคราะห์การอุดมศึกษาเชิงเปรียบเทียบของประเทศไทยในกลุ่มอาเซียน : มุมมองเพื่อออกแบบนโยบายอุดมศึกษาใหม่สำหรับประเทศไทย

*รักษ์พงศ์ วงศารojน์ ฐานวุฒิ ชุติพงศ์เดช** และ อัญญาภรณ์ สุจิตรารังกูร***

รับวันที่ 6 มีนาคม 2565 ส่งแก้ไขวันที่ 27 ตุลาคม 2565 ตอบรับตีพิมพ์วันที่ 27 ตุลาคม 2565

บทคัดย่อ

บทความวิจัยนี้วัตถุประสงค์ในการนำเสนอแนวทางการออกแบบนโยบายอุดมศึกษาใหม่สำหรับประเทศไทยผ่านการวิจัยเชิงเอกสารเพื่อถอดบทเรียนการพัฒนานโยบายการอุดมศึกษาของประเทศไทย สิงคโปร์ และมาเลเซียซึ่งกลุ่มประเทศตัวอย่างที่ดีในอาเซียนตามการจัดอันดับของ World Economic Forum ผลการศึกษาจากการวิเคราะห์เชิงเปรียบเทียบพบว่ากลุ่มประเทศตัวอย่างที่ดีใช้การอุดมศึกษาเป็นเครื่องมือในการสร้างทุนมนุษย์เพื่อสร้างขีดความสามารถทางการแข่งขันให้กับประเทศไทยผ่านการจัดทำแผนพัฒนาอุดมศึกษาและแพลตฟอร์มการเรียนรู้ตลอดชีวิตที่เป็นรูปธรรม มีสัดส่วนของงบประมาณแผ่นดินที่เกี่ยวข้องกับการอุดมศึกษาและการลงทุนทางด้านการวิจัยของประเทศไทยในระดับสูง ให้ความสำคัญกับการพัฒนาทักษะผู้เรียนผ่านการสร้างเครือข่ายกับผู้มีส่วนได้เสียในระบบอุดมศึกษา และมีการดำเนินนโยบายการพัฒนาการอุดมศึกษาที่มีความชัดเจนและต่อเนื่อง

คำสำคัญ: นโยบายอุดมศึกษา การออกแบบนโยบายใหม่ กลุ่มประเทศอาเซียน อนาคตศึกษาประเทศไทย

* คณะการจัดการการท่องเที่ยว สถาบันบัณฑิตพัฒนบริหารศาสตร์
เลขที่ 148 หมู่ 3 ถนนเสรีไทย แขวงคลองจั่น เขตบางกะปิ กรุงเทพมหานคร 10240
อีเมล: rugphong.v@nida.ac.th

** คณะวิทยาศาสตร์การกีฬา จุฬาลงกรณ์มหาวิทยาลัย
ถนนพระรามที่ 1 เขตปทุมวัน กรุงเทพมหานคร จังหวัดกรุงเทพมหานคร 10330
อีเมล: Thanavutd.C@chula.ac.th

*** สถาบันบัณฑิตพัฒนบริหารศาสตร์
เลขที่ 148 หมู่ 3 ถนนเสรีไทย แขวงคลองจั่น เขตบางกะปิ กรุงเทพมหานคร 10240
อีเมล: tunyaporn.s@nida.com

1. Introduction

Higher education has a significant impact and has been accepted that it is a core for human capital development. This is because it functions as the economic and social mechanisms, leading to country competitiveness (UNESCO, 2021). Moreover, knowledge asset and intellect as the main pillars of the nation are all immensely rooted and nurtured by the higher education. Especially, when the country confronts with the emerging challenges, the knowledge, intellect, and human capitals are significantly required the supports from higher education to overcome and gain the advantage from these challenges.

There are many considerable challenges occurring in many aspects. For example, the changing rate of population growth is not in accordance with the existing curriculum and the amount of the student in the education system (KPMG, 2020; Mintz, 2020; Wu et al., 2019). Also, the inconsistency of the demand and supply on workforce producing by the higher education, appropriation budget based on the university operation performance, and university ranking are the related factors affecting on the emerging challenges (Karran & Mallinson, 2018). In addition, not only the worth of investment gained from the university (Stolze & Sailer, 2021) but the unstable policies of education influenced by the political interferences (Nasruddin et al., 2012) are also the factors related the government resulting in the challenges. Apart from the mentioned factors bringing about the emerging challenges is the wide spread of COIVD-19 pandemic which is the influential issue effecting on the learners, instructors, and policy makers (Shamsir et al., 2021).

These emerging challenges lead to the research question that how Thailand should adapt the higher education policy implementation to maintain its performance competitiveness and make the higher education remains as the core pillars of country wisdom. This research paper, therefore, aims at proposing higher education policy redesign in Thailand based on the future studies. It is believed that the result Innovation tool for this research study will help creating the notion, future framework development and innovation of higher education. Also, the policy makers

and all higher education institutions will be advantageous from this study because of the fast changing of globalization and challenges.

To answer the expected research question, the documentary research approach will be employed to scrutinize the lessons learned drawn from Singapore and Malaysia which are the best practice countries providing excellent higher education policy development regarding World Economic Forum (World Bank, 2021). This research paper includes the research framework, design, methodology, data analysis and findings, and the suggested policies for Thai higher education redesign.

2. Review of Literature

2.1 Framework of Future Studies

A general propose of future studies framework is to create the systemic notion as a future planning which the scope of it also covers the analysis of the expected results in the future time. This framework relies on the cooperation between the stakeholders in directing the expected mission and determining the interested policy (Ratanawaraha, 2020). According to the process of foreseeing the future in policy making (Figure 1), Voros (2003) proposed the loose generic foresight process framework into 4 main steps. The first is a step of input which is the defining of the key driver and gathering the information and trends related to the interested issues. The second is the foresight step referring to an in-depth analysis of the data drawn from the first step to find out whether the main factors or trend variables that are likely to have an effect and the impact will come out in what kinds of form. The next is the output step which is about the strategic alternatives for resolving the existing problems. The final step is the strategy which is the process of codifying and systemizing the nations from the previous steps in order to formulate policies or a clearer strategic plan.

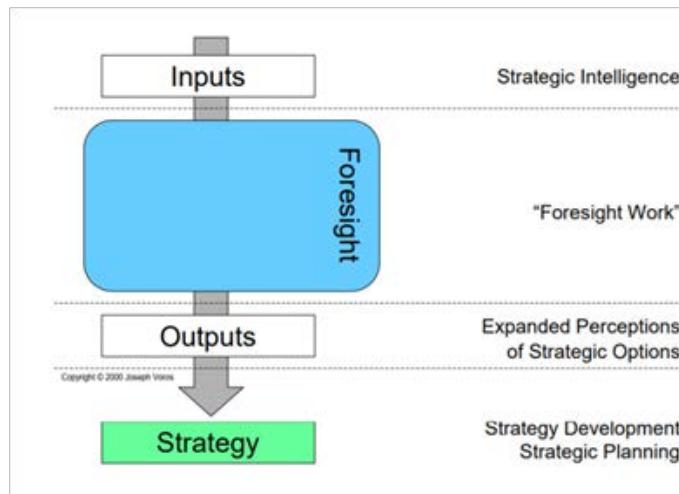


Figure 1: A process of foresight for policy making

Source: Voros (2003)

The concept of future studies has been initiatively employed as a frame of education policy development in many academic studies. For instance, in Andreescu et al.'s work (2012), it has been studied about an analysis of systematic foresight in Romania's education during 2009 to 2011 to portray the problems caused from the higher education and to suggest the guidelines of policy formulation in the higher education facet. This aspect of research interest is also found in the study of Nasruddin et al. (2012) which analyzed and depicted the foresight of Universiti Sains Malaysia into five perspective, including the A' la Carte University, the Invisible University, the Corporate University, the State University, and the University in The Garden. Apart from these studies, Piirainen et al. (2016) brought the concept of future studies into the university's mission development to meet the requirement of stakeholders' research and innovation in the context of higher education. In 2020, Stolze & Sailer illustrated a foresight of higher education which was driven by key drivers including international level, digital transformation, and the process of creating shared values and these led to five categories of the foresight which are worldwide, transdisciplinary, adaptive, blended – learning, and Ecosystem.

2.2 A development of higher education policy from the best practice countries in ASEAN

A competitiveness performance ranking in the global stage was held by the World Economic Forum (WEF) in the consideration of higher education and training development (Pillar 5: Higher education and training) during 2007 to 2017 (World Bank, 2021). It was reported that in the performance evaluation of higher education and training development, it was indispensably considered from some significant indicators such as secondary school attendance rate, tertiary enrollment rate, quality of education system, quality of education in mathematics and science, quality of schools that teach management, internet access in schools, research. And available training services, and the scope of training. Singapore and Malaysia were found that their performances in higher education and training development were the highest ranking among other ASEAN country members (Figure 2). Although the performance of Singapore has an increasing progression, Malaysia tends to decrease significantly. These two countries are all still in the highest standard in ASEAN. It could be seen that these two countries could be plausible in employing in this research study as the best practice and guidelines for higher education policy formulation.

Apart from these two model countries, the third place had been changed alternately among Thailand, Brunei, and Indonesia during 2007 to 2017. Considering from the Figure 2, it could be found that the higher education development of Thailand could possibly degrade from the ranking during 2007 to 2013. Although it reflects a little better line during 2014 to 2015, the ranking of Thailand slightly declined in 2016. The higher education and training development of Vietnam, Myanmar, and Lao are the members of ASEAN which were categorized below the world median.

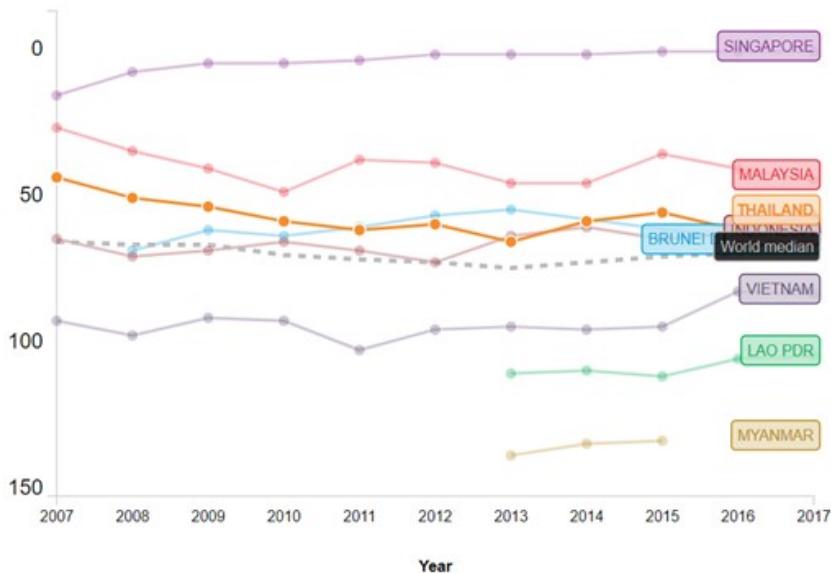


Figure 2: A comparison between the world competitiveness performance indicators by WEF in terms of higher education and training based on the ASEAN member

Source: World Bank (2021)

2.2.1 Singapore

Singapore continually pays attention to education since it considers people as a national resource. Education is greatly provided in all sectors and people could freely access the education. Both primary and secondary schools in this country are mostly the governmental unit and some are the state enterprises. Only the kindergarten and international school are in the private sector. Ministry of Education Singapore (2019) reports that Singapore's government nominated the committees, being responsible for education administration and budget allocation to the universities. This is because National University of Singapore (NUS) and Nanyang Technological University (NTU) have become dependent on financial and human resource management to rebound on the challenges of the present economic world. An audit system has also been developed to ensure the proper utilizing of the budget allocated by the government and this leads to the efficient performance. The university itself is, therefore, committed to carrying out their missions to drive the university to the eyes of the world (Sanders, 2020).

Singapore has a very indestructibility government and has continued to focus on people development which enable the government to formulate a clear education policy and to continuously function until their ultimate goals are achieved. The Singapore's educational learning outcomes are also more advanced than any other countries in the region, as well as the independent management of the university are workable. These allow Singapore to control the number and quality of their students and education staffs effectively.

2.2.2 Malaysia

Malaysia has an ever-evolving higher education system which can nationally increase the enrollment of students and internationally obtain more reputation through research publications, patent, and the quality of the institution. This country has been becoming the first prior alternative for international students to choose to study. There are also some Malaysia universities are ranked in the top 100 of the best universities in Asia. One of them is, moreover, the country's leading institution in the Organization of Islamic Cooperation (OIC) and there are some placed in the top 200 in the specific expertise and specialization in the field. The government's contribution in the investment is at the comparable level to those in the developed countries. Therefore, the country's overall performance, comprising resources, environment, coordination and international connectivity, and productivity was ranked in the 28th out of the 50th.

In Malaysia, the system of higher education policies has been improved to meet domestic needs and international directions. This leads to a development of the National Education Blueprint (Malaysian Education Blueprint 2015-2025) to assess their current performance and challenges. In other words, it is the curriculum reformations, focusing on the system in five areas: access, quality, equality, unity, and efficiency. These are purposively provided to each stakeholder with the corresponding benefits, rights, and responsibilities. Moreover, the students in this country could obtain a quality course using technology-based learning and hands-on experience through entrepreneurial networking. This not only concomitantly

strengthen the students' skills, abilities, and knowledge, but also prepare them for the future employment. The online learning options (MOOCs) as well as an academic community are both alternatively available.

The teaching and learning management system, as mentioned above, gives students with a variety of career options. Moreover, receiving the compensation based on the students' expertise, the support from the industry, the development courses between both national and international institutions are other advantageous earning from this developed system. The board of public institutions have gained more decision-making powers and they are properly regulated in the effective way. The roles of policymakers and regulators are also taken into the consideration by the way of eliminating the complicated processes and increasing self-regulation instead. Apart from these, the industry is another sector which has gained a high-quality workforce driven by the values of their works.

Based on the higher education system, there are categorized groups according to the administration of the state, namely public and private higher education institutions. Another categorization is divided by specializations which are research intensive university, objective-oriented universities (focused universities), and multidisciplinary universities (comprehensive universities). All these are administrated under the Ministry of Higher Education. The ministry also supervises on the approval of programs and certification of higher education institutions' quality. The educational reforms have started to authorize more self-regulation for the public universities which enable them to generate themselves income and funding and to increase administrative and financial management power. In terms of budget allocation, the ministry, who has a right on the management, has formulated a policy that will take a consideration based on the performance-based funding in order to create more competitive context. The assessment that is employed in the consideration will also have various indicators to evaluate the work performance. In the higher education system, there is a national quality assurance system which could be able to compare the quality with other oversea universities. There is the mobility of the system which has changed from consolidating state powers to the self-regulation, enabling the universities with greater flexibility in funding sources and

administration. It has also a policy of improving management efficiency in order to respond expeditiously to the economic trends. However, the universities must still comply with highly strict government requirements. Therefore, the universities still do not benefit from this self-regulation system.

The main income of the higher education institutions will depend on the type of that institution. The public unit will receive a large amount of support from the government while the private one will only have a source of income from the students' fees. Moreover, a high ranking and good performance rating of the institution could potentially draw the attention from the international students. In addition to these aspects, there is a human resource management, rating the staff from the executive level to the staff level. This management emphasizes on the consulting, contracts, research and training. and focus on financial credibility, but there is still some problematics on the evaluation. The direction of the institution tends to be to create university subsidiary companies (university spin-off companies) to increase financial turnover and revenue growth, promote a talent mobility courses, and increase revenue generation channels such as setting up a donation fund. As for the institutional model, a learning management is promoted through an open-online course and focused on entrepreneurial skills in responding to the market. Although there have been developed on the country in many sectors as mentioned, Malaysia still makes an attempt to improve both the governance and management on human and financial resources for the development of its full potential (Vongsaroj, 2020).

3. Research Methodology

3.1 Research design

This research is qualitative research that relies on documentary approach to collect secondary data from related documents. Document research is a method for compiling documents from the prints, media, electronic, video, or even images which are stored by the researcher without being involved in the recording. The document research is suitable for research that requires in-depth phenomenal facts which are not drawn from the academic documents. (non-technical literature) such as work reports, meeting minutes, strategic plans, etc. (Bowen, 2009; Yin, 2011).

In order to verify the reliability of the document before analyzing the data according to the principle of triangulation method, the source of the papers comes from various sections, including an analysis of documents or publications from government agencies related to the white papers of Malaysia's and Singapore's higher education policy, articles from both national and international academic journals, and higher education policy articles from foreign agencies related to higher education development (Harmsen & Braband, 2021), such as Organization for Economic Co-operation and Development (OECD), United Nations Educational, Scientific and Cultural Organization (UNESCO), seminar video related to the development of higher education policies both domestically and internationally, and articles published by consulting companies such as McKinsey & Company, Deloitte and KPMG. All documents were archived during the period 2019-2021.

3.2 Data Analysis

Step 1: After gathering the information from various documents related to the implementation of higher education policies of Malaysia and Singapore, the data will be analyzed by employing the content analysis to categorize the content according to the subject genres (coding and grouping). This research is applied the international policy comparative framework of Dobbins et al. (2011), UNESSCO (2014), Ziguras (2016) and SEAMO (2017). The gained data included the points related to the higher education development, including policy, competitiveness, ranking, pattern and levels of supervision, quality assurance, mobility, source of income, productivity, potentiality, administrative structure, and institutional category.

Step 2: When getting information according to subject genres related to the implementation of higher education policies, a comparative analysis is therefore employed to scrutinize the data between Malaysia and Singapore and decipher the lessons learned of higher education development to formulate of a new higher education policy redesign guidelines for Thailand.

4. Findings

From the analysis of data on higher education policy developments among the best practice countries in ASEAN (Table 1), it was found that Malaysia is a country that focuses on a development of higher education capabilities which aim to compete others in the global stage. In doing this, it is to achieve the development goals. The Malaysia Education Blueprint 2015–2025 was initiated in 2015 as a cornerstone for the development of higher education which was believed that it could lead the country to become a high-income country through the student development guidelines. It consists of a conceptualization and development of learners' abilities to have the entrepreneurial skills, a development of a work-based education system, and a technical training developed from a traditional academic focus. Also, an emphasis on using the results of technology and innovation to meet the social needs, a learner experience creation, a balance maintenance between public and private institutions as well as the aim for independent administration of higher education institutions, and creating financial sustainability for higher education institutions by reducing dependency on the state budget and relying on the funds from the stakeholders of the higher education sector are also the elements of the guidelines.

Singapore, on the other hand, aims to use higher education to develop the country into an innovation-driven and knowledge-based society. Singapore, on the other hand, aims to use higher education to develop the country into an innovation-driven knowledge-based society, however, this country has the embedded values in its education system. That is the wealth of a country, believed that it is depends on their people. This such value has preached the national education system to have a strong quality assurance system from the elementary to the higher education level. Previously, the government focused on the development of individualized education to expectedly develop only life skills and literacy. It has, however, become the development of higher education to conduct a competitiveness for the nation to support the knowledge-based economy, employing technology and innovation as a driver mechanism. To achieve the goal, the government has provided three key development plans: Smart Nation Singapore, Skills Future and the creation of three

new universities initiatives. The initiated plan of Skills Future plays a significant role as a stimulator for their people to have a self-development as a lifelong learning approach. The program provides guidelines for helping people to access their self-improvement alternatives in terms of education, training, vocation. The development of the integrated education and training to meet people's needs in a time are also included. The guidelines also point to the aspect of encouraging the employers to focus on their skills, expertise-based employment, and supporting and promoting a culture of lifelong learning.

Table 1: Comparison of goals and development of higher education policies among the best countries in ASEAN

Compared Goal	Best practice country	
	Malaysia	Singapore
Goal of higher education development	Develop of a higher education system to be ranked in the world class and promote the country's competitiveness in a globalized economy.	Develop and nurture people through an innovation-driven knowledge economy to compete on a global scale.
Higher Education Policy	<ul style="list-style-type: none">- Re-conceptual and develop learners' abilities to have entrepreneurial skills.- Develop a work-based education system and technical training rather than a traditional academic focus.- Emphasis on the outcomes of technology and innovation applications to meet the needs and create a learner experience.	<p>Under the Skills Future plan includes the following tasks:</p> <ul style="list-style-type: none">- Help people to have access to self-improvement options in education, training and careers.- Develop an integrated education and training system to meet the needs within the limited time.

Table 1: Comparison of goals and development of higher education policies among the best countries in ASEAN (Cont.)

Compared Goal	Best practice country	
	Malaysia	Singapore
	<ul style="list-style-type: none">- Maintain a balance between public and private higher education institutions as well as aim for independent administration of the institutions.	<ul style="list-style-type: none">- Encourage the employers to focus on skills and expertise-based employment.- Support and foster a culture of lifelong learning.
Higher Education Policy	<ul style="list-style-type: none">- Build financial sustainability for higher education institutions by reducing dependence on the state budget and relying on funds from users of the workforce from the higher education sector.	

Source: Vongsaroj (2020)

For the aspects related to the goals of higher education development, the policy, competition between higher education institutions, grouping, patterns and levels of supervision, quality assurance, mobility, source of income, productivity, potentiality, and the administrative structure as the patterns of higher education institutions (Table 2) which were drawn from the comparative analysis will be illustrated below.

Table 2: A comparison of the overall higher education policy implementation among the best practice countries in ASEAN

Compared point	Best practice country	
	Malaysia	Singapore
1) Competition between higher education institutions and the grouping of higher education institutions	<p>The private and public sectors are competitive and complementary. While the private sector provides access to higher education opportunities by focusing on creating courses according to market requirements such as business and administration, tourism, medicine, and technology, the public one can allocate funds to those important but low-demand courses.</p>	<p>-Junior Colleges or Centralized Institutes -Autonomous University -Private educational institutions -Post-secondary educational institutions (PSEIs)</p>
2) Pattern and level of higher education institutions supervision	<p>Ministry of Higher Education under the Ministry of Education plays an important role in supervising all sectors; higher education, both public and private universities, community colleges, polytechnics and other government units involved in higher education,</p>	<p>Ministry of Education is centralized as the controlling, cooperating, and encompassing the education in all levels.</p>

Table 2: A comparison of the overall higher education policy implementation among the best practice countries in ASEAN (Cont.)

Compared point	Best practice country	
	Malaysia	Singapore
2) Pattern and level of higher education institutions supervision	<p>both public and private universities, community colleges, polytechnics and other government units involved in higher education activities. However, the government still has a great influence on regulating higher education institutions although there is some better changing in the cooperation systems. The study found that Malaysia and Indonesia had less self-regulatory powers than countries in the OECD.</p>	
3) Quality assurance of higher education institutions	<p>The relevant quality assurance agency, for example the National Qualifications Assurance Agency (MQA) has a key role in quality assurance in all programs at higher education</p>	<p>Singapore's education management system can be divided into 3 levels:</p> <ul style="list-style-type: none">- Early Childhood Education Stage

Table 2: A comparison of the overall higher education policy implementation among the best practice countries in ASEAN (Cont.)

Compared point	Best practice country	
	Malaysia	Singapore
3) Quality assurance of higher education institutions		<ul style="list-style-type: none">- There is a certification system called Singapore Pre-School Accreditation Framework (SPARK).- Basic (Primary - Secondary Education), using a system called School Excellence Model (SEM)- Diploma and vocational level, employing Edu Trust system
4) Mobility of higher education institutions		<p>Singapore is decentralized in education, but this decentralization is primarily aimed at enhancing the efficiency of the education system. This management allows Singapore to drive university operations in line with the government's long-term policies in managing higher education.</p>

Table 2: A comparison of the overall higher education policy implementation among the best practice countries in ASEAN (Cont.)

Compared point	Best practice country	
	Malaysia	Singapore
5) sources of income of higher education institutions	<p>The Government of Malaysia grants 90% of the appropriations budget each year to public higher education institutions and 10% comes from the students' fees while in the private institutions, the main budget is derived from the income of the institution. The state university budget depends on the negotiation between the Ministry of Higher Education and the institution itself. As to polytechnic institutes and community colleges are the institution that receive budget from the state, managed by Ministry of Higher Education, polytechnic, and community College.</p>	<p>Universities or institutions that are governed by the state are funded directly by the government while those that are not under the supervision of the state is finically supported by a private organization, gained budget from the government. Also, the private sector will receive a full or partial funding from the tuition fee payment.</p>

Table 2: A comparison of the overall higher education policy implementation among the best practice countries in ASEAN (Cont.)

Compared point	Best practice country	
	Malaysia	Singapore
6) Productivity of higher education institutions	Malaysia's enrollment rate has increased to 70% from public and private institutions over the past 10 years.	The enrollment rate (GER) ratio for university students is 25% while the rest of the population goes to polytechnics and technical education institutions, which are considered as some of the best world institution.
7) The potential of higher education institutions	The Universitas 21 report ranks the higher education system at the 28th of 50 countries.	Singapore has two top world ranking university from 200 universities in the world, raked at the 25 th and 48 th , according to the latest Times Higher Education rankings.
8) Structure and operation model	The higher education institutions are under the Ministry of Higher Education of the Ministry of Education, being responsible for post-secondary education to higher education.	The government aims to improve the efficiency and effectiveness of education. The concept of government regulation

Table 2: A comparison of the overall higher education policy implementation among the best practice countries in ASEAN (Cont.)

Compared point	Best practice country	
	Malaysia	Singapore
		<p>and state-owned governance approaches to higher education institutions have the agency's operational methods and roadmaps, used to assess internal and external audit mechanisms. Its purpose is to protect the interests of the stakeholders, state intervention, and to enhance corporate governance standards of higher education institutions.</p>

Source: Vongsaroj (2020)

1) *Competition between higher education institutions and the grouping of higher education institutions*

For the competition between higher education institutions ranked in the best practice group, it was found that the institutions play a part in filling the market and there is an intense competition in attracting students by building their reputation and conducting renowned research.

In some best practice countries, the expansion of private higher education institutions has also offered the opportunities for people to access into the systems. This is because of the traditional value of admission to only those, the public sectors. When considering the categories of the higher education institutions in the best practice countries, it showed that they share the similar characteristics which can be grouped into 3 large levels: the institutions after secondary school or junior college level, the university level, and the specialized institutions level. All these have slightly differences in their operational details according to the operating structure managed by the public and private sectors.

2) Form and level of supervision of higher education institutions

In terms of grouping type of higher education institutions, there are different patterns and levels of institutional unit which are linked and referred to the national policies on self-governance and non-governmental unit. For example, in Malaysia, the Ministry of Higher Education is responsible for a controlling role in the overall picture of all institutions in the country, while the Ministry of Education of Singapore takes the absolute power in compassing the direction of education at all levels.

3) Quality assurance of higher education institutions

Each country has their own different quality assurance unit of educational institutions specifically. This is because the performance of quality assurance has been conditionally related to criteria of budget allocation to each institution. The Malaysian Qualifications Framework (MQF) of The National Qualifications Assurance Agency (MQA) is an example of quality assurance in Malaysia, setting the national standards and systems as a reference frame for evaluating the quality of higher education institutions in the country.

4) Flexibility in management

Streamlined operations of higher education institutions depend on self-regulatory policies, autonomizing from the public sector, and the form of supervising the institutions. In other words, in Malaysia, the structure of the higher education system is consolidated while Singapore has decentralized some tertiary institutions to increase operational efficiency.

5) Sources of income of higher education institutions

The sources of income of higher education institutions varies according to the nature of their operating structures. That is the public tertiary institutions are primarily funded by the government while the main income from the private sector comes from tuition fees, donations, and investment on the private sector and various educational organizations. Some may have partial support from the state budget.

6) Productivity of higher education institutions

The best practice countries create an outcome product from higher education institutions that stand out in both quantity and quality terms. In Malaysia, for example, it has been increased in tertiary enrollment rates of 70% from public and private institutions over the past 10 years, while Singapore has an enrollment rate (GER) ratio for university students of 25%. The rest of the populations goes to polytechnics and institutes of technical education, considered to be some of the word best quality institution.

7) The potential of higher education institutions

The number of educational institutions' productivity and their policies related to the higher education system of the best practice countries has positively driven some universities to be on the global competition stage such as Singapore's NUS and NUT.

8) Structure and operation model

The operational patterns of higher education institutions remain an agency, providing education, research and consulting services. However, the roles of them may differ according to the structure of operations, policies of self-regulation, and autonomizing from the public sector. The grouping of higher education institutions according to their organizational missions is another point making the role of the institutions different as for found in Malaysia for instance.

5. Summary of study results and policy recommendations

From the results of the comparative analysis between Malaysia and Singapore to extract the lessons learned for the design of new higher education policies in Thailand, it can be summarized into four parts for the design of policy recommendations for the development of higher education in Thailand as follows:

The first part is that the best practice countries determinately aim to institute their countries into a knowledge-based society driven by technology and innovation. Both countries implement a higher education as a tool to build human asset and construct the country's competitiveness through the formulation of the higher education blueprint and lifelong learning platform. The purpose in doing these is to encourage their people to realize the importance of self-improvement.

The second is that Malaysia and Singapore share the same high proportion of the national budget supported to the higher education and investment in national research. The results of these educational investment in higher education budget variously and effectively contributes to the rates of high school attendance, university enrollment, quality of the education system, quality of management of mathematics and science education, quality of educational institutions, teaching management, internet access in schools, and the research and training services that can be accomplishable and realistic. The scope of training and the dimensions of both quality and quantity of graduates have resulted the Malaysia and Singapore to be outstandingly ranked as good reputation in higher education policy development continually.

The next is that the best practice countries gives an importance on the student-centered approach (El-Azar & Nelson, 2020), emphasizing on the learning styles that could build working skills through entrepreneurship, networking and collaboration, for example, to build a network of connections with graduate users and higher education stakeholders such as the central government, international governments, domestic industry sector, social sector business sector. Also, social sector was received a chance in curriculum development, including organizing training, internships, and contracting employment insurance with local entrepreneurs.

In addition, industry groups are encouraged to play a role in financial proportion to support higher education and in raising funds to reduce the government's fiscal burden.

Finally, both Malaysia and Singapore have a clear policy implementation in functioning a higher education development due to political stability. The clear development policy on higher education has resulted in the ecosystem agencies which could continuously develop their manpower according to the ultimate goals set by the country.

According to the comparative analysis among the best practices, the data obtained can be used as an input in preparing to formulate the scene together with the analysis of key factors to help the next step of the generic foresight process framework. The gap could be more completed for research studies related to the future depiction of higher education in Thailand.

6. Acknowledgement

This article is a part of the research project titled “Higher-education policy redesign in ASEAN+3 countries” funded by the Thailand Science Research and Innovation (TSRI).

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