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Quality Management System and International Quality Criteria in Higher Education

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Abstract

The purpose of this research was to study the conceptual framework of quality management system and international quality criteria in higher education. This research was a qualitative research that emphasized the study and synthesis of concepts, theories and literature relating to quality management systems and international quality criteria in higher education. Upon assessment of the conceptual framework by five experts, the results indicated that the quality management system and international quality criteria had an index of item objective congruence (IOC) of 1 and 0.9, respectively. In addition, the quality management system in higher education was found to comprise three main components: 1) Continuous quality improvement planning; 2) Continuous quality improvement control; and 3) Continuous quality improvement assurance. Meanwhile, the international quality criteria consisted of five key indicators, namely reputation, staff, student, research, and income.

Introduction

Higher education institutions play a major role in the development and improvement of human potential, which is instrumental in national development. Higher education institutions are responsible for equipping students with knowledge and experience in preparation for employment so as to ensure a strong workforce of highly skilled and quality individuals in the country. In addition to the foregoing responsibilities, higher education institutions also undertake the role of collating, synthesizing, analyzing, constructing and disseminating knowledge through the conduct of research on global events in the past, present, and future. The primary

missions of these institutions include production of graduates, research, provision of academic services to the society, and conservation of cultural heritage. With that respect, higher education institutions are crucial in the production of “graduates” who possess requisite skills and knowledge to enter the workforce, as well as exhibiting good citizenship through social and cultural cultivation-all of which are conducive to the sustainable development of the country and society (Office of the Higher Education Commission, 2008).

With regard to the missions and roles of higher education institutions, it is apparent that the development of national workforce in effort to escape from the middle-income trap is one of the major roles of higher

education institutions. Nonetheless, their past performance is found to be contradictory to their role in workforce development, as reflected by a relatively low productivity of Thai workforce when compared to other Asian countries such as Malaysia, South Korea and Japan. More specifically, the workforce productivity in these countries are approximately 2, 3, and 5 times higher than that of Thailand, respectively.

Indeed, there are several issues encountered by higher education institutions. The majority of these issues are concerned with their lack of resilience to support major public investment projects; the decline in the number of graduates with bachelor's degrees; the oversupply of graduates; the relatively high unemployment rate compared to other levels of education; the incompetence of the workforce to fulfill the needs of industrial and service sectors, both qualitatively and quantitatively; the low quality of graduates with limited English proficiency; and the low quality of research that fails to solve national problems and contribute to national development (Office of the Education Council, 2017).

Undoubtedly, these issues reflect the "quality of higher education institutions in Thailand", specifically their lack of efficiency in quality management in the aspect of academics, educational programs, instructional practices, students, and budget. These quality-related issues further impede the development of national competitiveness, owing to the fact that higher education institutions are one of the key mechanisms for enhancement of the country's potential to compete in international markets; they are responsible for producing and developing workforce and creating knowledge and innovation through research and development, for the benefits of the manufacturing sector, national infrastructure, and society as a whole (Office of the Higher Education Commission, 2008).

The world class ranking of universities is conducted based on the international quality criteria to represent the capacity and quality of universities in various aspects, such as reputation, research, teaching, and income. These rankings do not only enable universities to achieve international recognition but also elevate the status of their respective countries. In addition, top-ranked universities will attract talented individuals across the globe to pursue education in their country. Likewise, they are more inclined to receive public support and funds from the private sector, which is another major benefit of being a top-ranked university.

At present, there are various rankings of world universities, each of which employs different quality criteria. Examples of these rankings are the Academic Ranking of World Universities (ARWU), the QS World University Rankings, the Times Higher Education World University Rankings (THE), the Bibliometric Rankings of World Universities, the World Top Universities, and the Ranking Web of World Universities (Marop, Wells, & Hazelkorn, 2013).

According to the QS World University Rankings (2018), Asian universities that were listed among the world's top 200 universities, categorized by country, are as follows: 1) Nanyang Technological University (11th) and National University of Singapore (15th) in Singapore; 2) Tsinghua University (25th), Peking University (38th), Fudan University (40th), Shanghai Jiao Tong University (62nd) and Zhejiang University (87th) in China; 3) University of Tokyo (28th), Kyoto University (36th), Tokyo Institute of Technology (62nd) and Tohoku University (76th) in Japan; and 4) University of Malaya (114th) in Malaysia.

Alternatively, the Times Higher Education World University Rankings 2016-2017 (2018) listed the world's top 200 universities in Asia as follows: 1) National University of Singapore (24th) and Nanyang Technological University (54th) in Singapore; 2) Peking University (29th), Tsinghua University (35th) and University of Science and Technology of China (153rd) in China; and 3) University of Tokyo (39th) in Japan.

The foregoing rankings demonstrate the quality management of higher education institutions in various countries, particularly those that conform to the international standards. In that regard, the researcher is interested in studying the conceptual framework of quality management system and international quality criteria in higher education.

Research Objectives

To study the conceptual framework of quality management system and international quality criteria in higher education.

Research Methodology

This research was conducted through the use of documentary research method, as detailed below.

1. Construction and Development of Research Instruments

The conceptual framework of quality management system and international quality criteria was developed according to the following process:

1.1 Related concepts, theories and literature were examined and synthesized. More specifically, quality management systems, academic quality management systems and higher education quality management systems were taken into consideration in developing the conceptual framework of quality management system. In addition, the QS World University Rankings and the Times Higher Education World University Rankings were employed as the international quality criteria to be used in the development of the conceptual framework. These elements were examined by means of content analysis.

1.2 The initial conceptual framework was proposed to the thesis advisor to be examined for accuracy and appropriateness, whereupon all necessary corrections were made in accordance with the recommendations of the thesis advisor.

1.3 The revised conceptual framework was examined by five experts for content validity and equivalence.

2. Data Collection and Collation

2.1 The conceptual framework of quality management system in higher education was developed by examining and synthesizing the concepts, theories and literature relating to quality management systems, academic quality management systems, and higher education quality management systems.

2.2 The conceptual framework of international quality criteria in higher education was constructed by examining and synthesizing related concepts, theories and literature, as well as studying the quality criteria in higher education, specifically the QS World University Rankings and the Times Higher Education World University Rankings.

3. Data Analysis

3.1 The content of quality management systems, academic quality management systems and higher education quality management systems was synthesized and analyzed as follows:

Table 1 Synthesis of Quality Management System in Higher Education

Quality Management System in Higher Education	Vivek Nanda (2005)	Deming (1982)	Sahney et al. (2002,2012)	Chong and Ho (2009)	Frances Hill and Andrew (1991)	Gupta (1993)	Jaraidi and Ritz (1994)	Lewis and Smith (1994)	Sahney, Banwet and Karmes (2004)
1. Quality Planning	✓	✓	✓	✓	✓	✓	✓	✓	✓
1.1 Planning for quality management system	✓	✓	✓	✓	✓			✓	
1.2 Planning for quality management system documentation	✓								
2. Quality Control	✓	✓	✓	✓	✓	✓	✓	✓	
2.1 Control activities	✓				✓			✓	
2.2 Corrective actions	✓								
3. Quality Assurance	✓		✓	✓	✓	✓	✓	✓	
3.1 Quality inspection	✓		✓	✓	✓		✓		
3.2 Quality assessment	✓			✓	✓		✓		
4. Quality Improvement	✓	✓	✓	✓					✓
4.1 Identification of quality improvement goals	✓								
4.2 Quality improvement planning	✓								
4.3 Implementation of quality improvement plan	✓								
4.4 Review of quality improvement outcomes	✓								

3.2 The content of the international quality criteria in higher education, specifically the QS World University Rankings (QS) and the Times Higher Education World University Rankings (THE), were synthesized and analyzed as follows:

Table 2 Synthesis of International Quality Criteria in Higher Education

International Quality Criteria in Higher Education	QS (2018)	THE (2016-2017)
1. Reputation		
1.1 Academic reputation	✓	✓
1.2 Employer reputation	✓	
2. Staff		
2.1 International faculty ratio	✓	
3. Student		
3.1 Student-to-faculty ratio	✓	✓
3.2 Doctorate-to-bachelor's ratio		✓
3.3 International-to-domestic student ratio	✓	✓
3.4 International student-to-faculty ratio	✓	
3.5 Doctorates awarded-to-academic staff ratio		✓
4. Research		
4.1 Citations	✓	✓
4.2 Research reputation		✓
4.3 Research income		✓
4.4 Research productivity		✓
4.5 International collaboration		✓
5. Income		
5.1 Institutional income		✓
5.2 Industry income (knowledge transfer)		✓

3.3 The conceptual framework was examined by the thesis advisor for accuracy and appropriateness, and all necessary corrections were made thereto before submitting to the five experts.

3.4 The revised conceptual framework was examined by five experts for content validity and equivalence. The results of examination are as follows:

Table 3 Content Equivalence of the Conceptual Framework of Quality Management System in Higher Education

Concepts of Quality Management System in Higher Education	1	2	3	4	5	Mean
1. Quality Planning	1	1	1	1	1	1
2. Quality Control	1	1	1	1	1	1
3. Quality Assurance	1	1	1	1	1	1
4. Quality Improvement	1	1	1	1	1	1
Total						1

According to Table 3 (Content Equivalence of the Conceptual Framework of Quality Management System in Higher Education), the index of item objective congruence (IOC) was found to be equal to 1. This implies that the experts perceived that the conceptual framework was appropriate. Nonetheless, additional recommendations were proposed by the experts, as follows:

1) Higher education quality management system - Quality management system should be more clearly defined to encompass the aspects of quality that are being referred to in the context of the study, such as quality of students, quality of instructional practices, and quality of personnel. In addition, the phrase “renowned or profitable institutions in higher education” may signify characteristics of capitalism. Thus, there should be more emphasis on the social, economic, political and administrative issues encountered by these institutions to ensure their contribution to the development of communities.

2) Quality planning - Specific products of quality planning should be clearly identified. However, the term “product” should be avoided and replaced with “output” as it is not commonly used in the academic field.

3) Quality control - The term “product” should be revised in accordance with the aforementioned recommendation, and the term “detect” should be replaced with “examine”. Recursive definition should also be avoided.

4) Quality assurance - The term “customer” should be replaced with “stakeholder”, “user”, or “consumer”.

5) Quality improvement - The enhancement of efficiency and effectiveness of the process should be clearly specified. In addition, quality assurance may be incorporated in this component.

Table 4 Content Equivalence of the Conceptual Framework of International Quality Criteria in Higher Education

Concepts of International Quality Criteria	1	2	3	4	5	Mean
1. Reputation						
1.1 Academic reputation	1	1	1	1	1	1
1.2 Employer reputation	0	1	1	1	-1	0.4
2. Staff						
2.1 International faculty ratio	1	1	0	1	1	0.8
3. Student						
3.1 Student-to-faculty ratio	1	1	1	1	1	1
3.2 Doctorate-to-bachelor's ratio	1	1	1	1	1	1
3.3 International-to-domestic student ratio	1	1	0	1	1	0.8
3.4 International student-to-faculty ratio	1	1	0	1	1	0.8
3.5 Doctorates awarded-to-academic staff ratio	1	1	1	1	1	1
4. Research						
4.1 Citations	1	1	1	1	1	1
4.2 Research reputation	1	1	1	1	1	1
4.3 Research income	1	1	1	1	1	1
4.4 Research productivity	1	1	1	1	1	1
4.5 International collaboration	1	1	1	1	1	1
5. Income						
5.1 Institutional income	1	1	1	1	1	1
5.2 Industrial income (knowledge transfer)	0	1	1	1	1	0.8
Total						0.9

According to Table 4 (Content Equivalence of the Conceptual Framework of International Quality Criteria in Higher Education), the index of item objective congruence (IOC) was found to be equal to 0.9, which implies that the conceptual framework was perceived to be appropriate. The experts proposed additional recommendations as follows:

1) The term “employer reputation” cannot be defined comprehensively and therefore should be modified to eliminate ambiguity.

2) The English term for each indicator should be specified to provide better understanding to the audience.

3.5 The conceptual framework was revised based on the results of examination and recommendations of the experts.

3.6 The revised conceptual framework was re-submitted to the thesis advisor for final revision.

Results

Upon study of the conceptual framework of quality management system and international quality criteria in higher education, the results are as follows:

1. The conceptual framework of quality management system in higher education consisted of:

1.1 Continuous international quality improvement planning

1.1.1 Improvement planning for quality management system

1.1.2 Improvement planning for quality management system documentation

1.2 Continuous international quality improvement control

1.2.1 Improvement of quality control activities

1.2.2 Improvement of corrective actions

1.3 Continuous international quality improvement assurance

1.3.1 Inspection of quality improvement

1.3.2 Assessment of quality improvement

2. The conceptual framework of international quality criteria in higher education consisted of five indicators, namely:

2.1 Reputation

2.1.1 Academic reputation

2.1.2 Employer reputation

2.2 Staff

2.2.1 International faculty ratio

2.3 Student

2.3.1 Student-to-faculty ratio

2.3.2 Doctorate-to-bachelor's ratio

2.3.3 International-to-domestic student ratio

2.3.4 International student-to-faculty ratio

2.3.5 Doctorates awarded-to-academic staff ratio

2.4 Research

2.4.1 Citations

2.4.2 Research reputation

2.4.3 Research income

2.4.4 Research productivity

2.4.5 International collaboration

2.5 Income

2.5.1 Institutional income

2.5.2 Industrial income (knowledge transfer)

Discussion

It can be inferred from the foregoing results that the conceptual framework of quality management system in higher education emphasizes continuous improvement in three aspects. Such emphasis is attributable to the fact that continuous improvement is the key component of quality management in organizations and is instrumental in organizational success. This is consistent with the research of Deming (1982) that postulated 14 key principles of quality management (Deming's 14 points), one of which implied the necessity of continuous improvement of production and service systems. In addition, the results of this research are consistent with that of Sahney et al. (2002, 2012), which stated that continuous improvement should be emphasized in the management system. A similar idea was proposed by Mizikaci (2006) who perceived that strategic planning should be performed continually and applied to the evaluation process to ensure appropriate improvement. Likewise, Mukhopadhyay (2005) postulated that the significance of total quality management (TQM) predominantly lies on the commitment and support of executives with respect to quality identification, consistency of the objectives, quality awareness, employee empowerment, continuous improvement, and systematic process of organizational activities.

Regarding the conceptual framework of international quality criteria in higher education, it was constructed by synthesizing the indicators derived from the QS World University Rankings and the Times Higher Education World University Rankings. These two rankings were found to exhibit some similarities, specifically in the aspect of reputation, staff, student, research, and income. It is apparent that all of these five indicators focus on the production of graduates and research projects, which constitute the output of institutions. By performing in accordance with these indicators, institutions would gain international recognition as a result of improvement in their quality. Indeed, these indicators are incorporated in the strategies of many nations in effort to enhance their competitiveness. This is consistent with the research of Blanco-Ramirez and Berger (2014), which suggested that international rankings are not merely the indicators of international quality and accreditation but also the indicator of national competitiveness. According to Blanco-Ramirez and Berger (2014), quality that is reflected in international rankings is a measure of an institution's output, which

consists of students, advertisements, and subsidies. Being a globally ranked institution with international accreditation is thus considered to be a remarkable achievement in this modern era. Their concepts are in line with those of Marop et al. (2013) who postulated that world university rankings play an important role in attracting talented individuals to a country as well as promoting support and investment from the private sector.

Recommendations

1. The conceptual framework of quality management system in higher education was developed based on the synthesis of quality management system of one higher education institution. Hence, further research should be conducted on non-academic organizations to gain a more comprehensive insight into quality management system.

2. The conceptual framework of international quality criteria in higher education was synthesized from only two criteria: QS World University Rankings and Times Higher Education World University Rankings. Accordingly, further research should place emphasis on other international quality criteria to obtain a more inclusive range of indicators.

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