



**INTERNATIONAL COMPETITIVENESS OF THAI HIGHER
EDUCATION, 2013-2023 FROM A STUDENT SATISFACTION
PERSPECTIVE**

JIACHENG ZHONG



**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY IN MANAGEMENT SCIENCE
INSTITUTE OF SCIENCE INNOVATION AND CULTURE
RAJAMANGALA UNIVERSITY OF TECHNOLOGY KRUNGTHEP
ACADEMIC YEAR 2024
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in Partial Fulfillment of the Requirements for the
Degree of Doctor of Philosophy in Management Science

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ABSTRACT

To cope with the decreasing number of students and increase revenue for survival, Thai universities have been dedicated to internationalizing their degree programs for overseas recruiting, especially from China, since the 2010s. They succeeded in the China market, particularly in terms of student recruiting. According to an unofficial estimate, in 2022, around 32,000 Chinese students will be studying in public and private Thai universities. Notwithstanding, Thai universities are criticized for pursuing income by sacrificing quality, while Chinese students are regarded as their “cash cow.” Maintaining their international competitiveness while not compromising the required rate has become a burning problem for Thai universities to solve today. Taking the nine Rajamangala Universities of Technology (RMUT) as examples, the present research examines the competitiveness of Thai public universities in the international market through a SWOT analysis. However, it is pioneering in terms of student satisfaction. This research surveyed Chinese students at 3 of the 9 RMUTs, which currently host more than 300 Chinese students. The questionnaires were designed to investigate four factors: 1) admission, 2) curriculum design, 3) tuition, miscellaneous fees, and living expenses, and 4) students. Twenty-five people from these three universities were interviewed. The results indicate that Chinese educational agencies enrolled 85% of the student respondents in the studied RMUTs; they translated the curriculums from their original Thai version into English, and most responsible lecturers lacked the necessary language and academic skills to instruct and counsel postgraduate students. The agents frequently overcharged tuition in the universities' name, and the living expenses have risen over the past three years. Chinese educational agents primarily send and pay representatives to operate the student service, while the university staff either lacks English proficiency or is irresponsible in communication. The researcher argues that all this has undermined Thai public universities' competitiveness in the Chinese market in the past years and impacted the public perception of Thailand, which has always been optimistic.

Keywords: Innovation, International competitiveness, Thai higher education, RMUTs, Student satisfaction

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Jiacheng ZHONG

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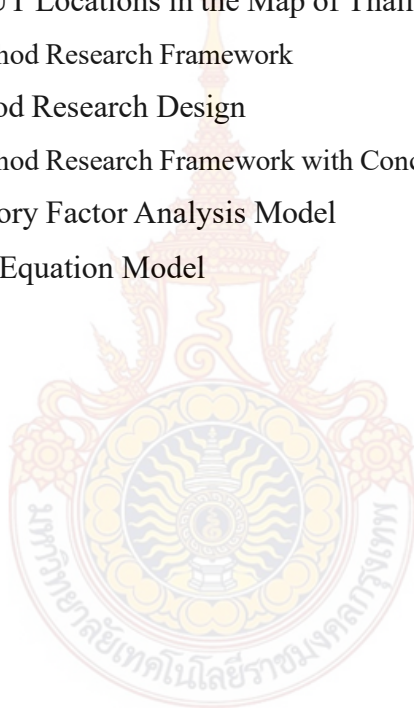
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CHAPTER I

INTRODUCTION

Besides introducing the background, this chapter also identifies the research problems. It further highlights the objectives the present research aims to meet and the questions the latter attempts to answer. This chapter briefs the methods applied and notifies the scope of this research. In the end, it explains the significance and limits of this research.

1.1 Background and Rationale

1.1.1 The Aging Population in Thailand and the Decreasing Number of Students

Thailand has experienced a low birth rate for several decades, a significant demographic concern for the country. According to the Panyapiwat Institute of Management, estimates from the National Statistical Office suggest that Thailand's birth rate will approach a record low in 2021, with just 540,000 babies, compared to 900,000 - 1,000,000 between 1993 and 1996. (2021, National Statistical Office). According to Thailand's National Statistical Office, the birth rate decreased from 2.1 children per woman in 2007 to 1.5 children per woman in 2019.

As one of the results, the number of local students pursuing higher education in Thailand decreased consecutively for years. It is estimated that by 2021, 1,902,692 local students will be studying in different Thai universities, public and private, compared with 2,250,778 in 2017. The loss of 348,086 students in the past ten years escalated the revenue decline of Thai universities. (National Statistical Office, 2021)

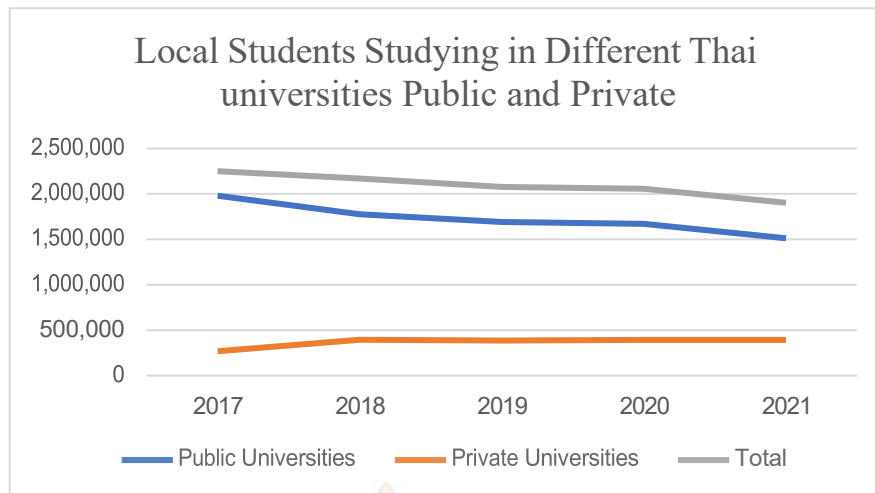


Figure 1.1 Local Students Studying in Different Thai universities, Public and Private
(Source: Author, 2023)

Thai universities face survival challenges, especially in vocational or professional public universities. Since 2010, Thai universities have been dedicated to internationalizing their degree programs for overseas recruiting, especially from China, to tackle the decreasing number of students and declining tuition revenue. Their efforts ripened. According to Thailand's Office of the Higher Education Commission (OHEC, 2020), the number of Chinese students studying in Thailand has increased in recent years. Thai universities welcomed 5,364 Chinese students in 2009. By 2020, the figure had more than quadrupled to 14,423. 7,231 Chinese students graduated from Thailand's higher education colleges between 2018 and 2022.

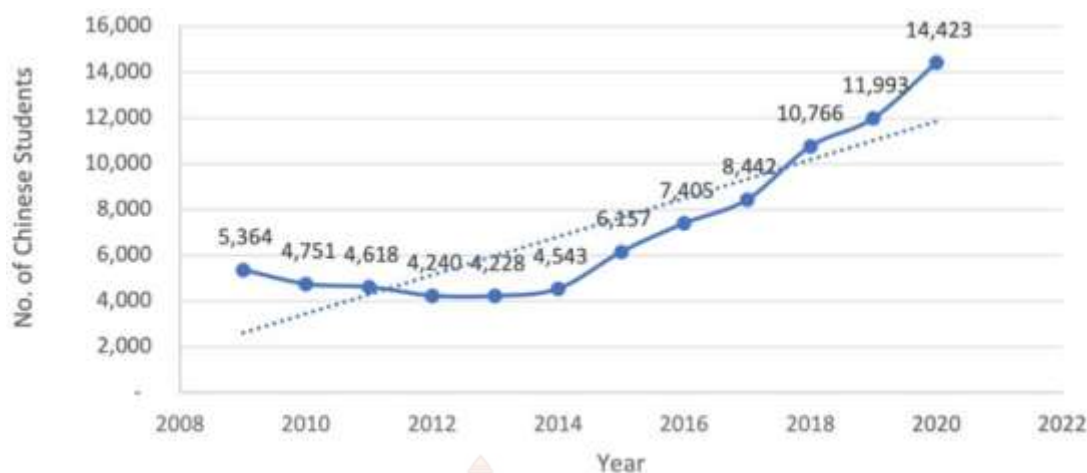


Figure 1.2 The Number of Chinese Students at Thai institutions Recently Increased
(Source: Author, 2023)

1.1.2 Higher Education Cooperation between China and Thailand

China has been actively involved in international collaborations and partnerships in higher education. The Chinese government has established various initiatives and programs to promote educational exchanges and cooperation with universities worldwide, including those in Thailand. These initiatives aim to enhance mutual understanding, academic collaboration, and cultural trade between China and other countries.

In 2021, Thailand had several policies and initiatives to attract and support Chinese students pursuing higher education there.

The following are some essential characteristics of Thailand's higher education policy for Chinese students: Scholarships and financial aid programs are available from the Thai government, educational institutions, and numerous organizations to international students, including those from China, who aspire to study in Thailand. These scholarships are available at both the undergraduate and postgraduate levels, and they cover tuition, living expenses, and other associated expenditures.

1. Bilateral Agreements: Thailand has formed bilateral agreements and

collaborations with China to strengthen educational cooperation. These treaties encourage student exchanges, collaborative research initiatives, and intellectual collaboration among universities and institutions in both nations. (JIAN, 2018)

2. Visa and Immigration: Thailand has simplified its visa and immigration procedures to make it easier for international students, especially Chinese students, to enter and stay there. Student visas and related immigration processes have been created to make studying in Thailand easier for Chinese students. (Thailand Migration Report, 2019)

3. English-Taught Programs: To attract international students, particularly those from China, several Thai institutions offer English-taught programs, including undergraduate and postgraduate degrees. These programs allow Chinese students who may need to be fluent in Thai to continue their studies in English. (Jampaklay et al., 2022)

4. Cultural Integration and Support Services: Thai University frequently assists Chinese students in assimilating into the local culture and academic environment. To ensure Chinese students' well-being and academic performance, these services may include orientation programs, language support, student associations, and counseling services. (Long et al., 2009)

5. Collaboration with Chinese Universities: Thai and Chinese institutions regularly establish academic alliances, cooperative research initiatives, and student exchanges. These partnerships seek to strengthen literary and cultural relations between Thai and Chinese educational institutions. (Jampaklay et al., 2022)

1.1.3 Internationalization of Thailand's Higher Education

International students accounted for around 8% of overall students in Thai higher education colleges in 2019, while Chinese students enrolling in Thai universities accounted for 51.3% of the foreign student population in 2020 (Office of the Higher Education Commission, 2019). However, due to the popularity of COVID-19, higher education institutions in Thailand and other countries have embraced online teaching, resulting in a significant increase in the number of Chinese students enrolling between 2020 and 2022.

Chinese students enrolling in Thai institutions comprised 51.3% of the international student population, a 3% rise from the previous year. The Chinese student market also compensates for decreased Thai student enrollment. According to an unofficial assessment by the Chinese Embassy in Thailand in 2022, around 32,000 Chinese students were studying at Thai colleges. (Zhang & Ming, 2015)

1.1.4 Chinese International Student Marketing in Thailand Higher Education

The Chinese Embassy in Thailand said 70% were enrolled in private Thai institutions, with the remainder at public universities. Among them, 20,000 were in private Thai universities, and 12,000 were in public universities for different undergraduate and postgraduate programs, as seen in Table 1. From the figures above, it is undeniable that Thai Higher Education has demonstrated strong competitiveness internationally, especially in the Chinese market.

Table 1.1 Number of Chinese Students in 2022 and Their Distribution

| Number of Chinese Students | Private Universities ¹ | | Public Universities ² | |
|----------------------------|-----------------------------------|--------------|----------------------------------|--------------|
| | Undergraduate | Postgraduate | Undergraduate | Postgraduate |
| 32,000 | 20,400 | 2,400 | 9,000 | 600 |

Note: ¹ According to unofficial statistics, primarily through the statistics of the Chinese Students and Scholars Association in Thailand, the three private universities that enroll the most Chinese students are Dhurakij Pundit University, Assumption University, and Krirk University.

² According to unofficial statistics, primarily through the statistics of the Chinese Students and Scholars Association in Thailand, the three public universities that enroll the most Chinese students are Rajamangala University of Technology Krungthep, Rajamangala University of Technology Thanyaburi, and Rajamangala University of Technology Tawan-ok.

The Office of the Higher Education Commission (OHEC) in Thailand. Thai universities welcomed 5,364 Chinese students in 2009. By 2020, the figure had more than quadrupled to 14,423, and between 7,231 Chinese students graduated from Thailand's higher education colleges between 2018 and 2022. According to the Chinese Embassy in Thailand, the number of Chinese students studying at all levels in Thailand reached as high as 50,000 before the epidemic. According to the embassy, most came from southern China, including Yunnan and Guangxi provinces. It cited a recent study

on why Thailand attracted so many Chinese students. Among these are the following:

- a. China's universities have a restricted number of student seats.
- b. Studying in Thailand is reasonably priced.
- c. Chinese students wish to pursue several courses in Thai institutions.
- d. Chinese students adore Thai cuisine, culture, and tourist attractions.
- e. Obtaining visas is relatively easy for them.
- f. Collaboration between Thai and Chinese colleges improves work chances for graduates.

1.1.5 “Cash Cows” – Chinese Students in Thailand

The increasing number of Chinese students studying in Thailand has forced numerous colleges to modify their curricula to accommodate them. Notwithstanding, Thai universities' success in recruiting international students in the past years is not often applauded. The critics blame them for single-mindedly pursuing the number of students by sacrificing the required quality of higher education. The Chinese contribute the most significant international students and are denounced as “cash cows” for Thai higher education (Chattipakorn, 2020). Given that international students pay three times more in tuition fees than Thai students, Chinese students are considered to supplement their earnings. Thailand's international reputation as an "education hub" may suffer if the academic level of students admitted and education industry standards are not met. Business administration, finance and accounting, and international business management are some of the disciplines that private and public colleges provide. Even though these international programs are meant to be taught in English, the teaching language has changed into a mix of Chinese, English, and Thai to assist students suffering from the language barrier. While this is sensible, it has come at a cost. Some Chinese students have claimed that the courses are not adequately taught and that high grades are given far too quickly. These colleges are most likely sacrificing academic quality to pursue yuan cash.

Thai universities are increasingly troubled by the challenge of maintaining their marketing competitiveness for student recruiting while ensuring that their education quality still needs improvement.

1.1.6 Summary of Research Background

Based on the points mentioned above, the Researcher thinks that Thai higher education (HEIT) must vigorously expand the channels of international students under the premise of the lack of local student formation. However, the premise of expanding channels is that Thai higher education must improve its competitiveness and innovation capabilities before succeeding in the international higher education market.

1.2 Research Questions

This research is designated to Respond to the following questions:

- 1) Are international students, especially Chinese, satisfied with the Thai higher education they are enrolled in?
- 2) Does Thai Higher Education still bear strong competitiveness in the international market today? If so, to what degree?
- 3) How can Thai higher education strengthen its competitiveness in the international market?

1.3 Research Hypothesis

According to the quantitative research, the established hypothesis is:

H1: Admission(1a) and the Thai Higher Education Institute's International competitiveness (2a) correlate positively.

H2: Admission(1a) and the Thai Higher Education Institute's Internal competitiveness (2b) are positively correlated.

H3: Admission(1a) and the Thai Higher Education Institute's Technology Innovation (2c) correlate positively.

H4: Curriculum Design(1b) and the Thai Higher Education Institute's International competitiveness (2a) correlate positively.

H5: Curriculum Design (1b) and the Thai Higher Education Institute's Internal competitiveness (2b) are positively correlated.

H6: Curriculum Design (1b) and the Thai Higher Education Institute's Technology Innovation (2c) correlate positively.

H7: Tuition, Miscellaneous Fees, and Living Expenses (1c) and the Thai Higher Education Institute's International competitiveness (2a) correlate positively.

H8: Tuition, Miscellaneous Fees, and Living Expenses (1c) and the Thai Higher Education Institute's Internal competitiveness (2b) are positively correlated.

H9: Tuition, Miscellaneous Fees, and Living Expenses (1c) and the Thai Higher Education Institute's Technology Innovation (2c) correlate positively.

H10: Student Services (1d) and the Thai Higher Education Institute's International competitiveness (2a) correlate positively.

H11: Student Services (1d) and the Thai Higher Education Institute's Internal competitiveness (2b) are positively correlated.

H12: Student Services (1d) and the Thai Higher Education Institute's Technology Innovation (2c) correlate positively.

1.4 Research Objectives

- 1.4.1 To study the satisfaction of Chinese international students with Thai Higher Education.
- 1.4.2 To examine the competitiveness of Higher Education Institutes.
- 1.4.3 To analyze the effect of competitiveness on the international competitiveness of Chinese international students in Thai Higher Education.

1.5 Scope and Limitation of the Research Study

1.5.1 Population and Sample

This researcher studies 300 Chinese students at three RMUT universities at undergraduate, master, and Ph.D. levels, including but not limited to current Chinese students and those within five years of graduation. The sample of 718 was drawn from a selection of approximately 1889 Chinese students in 3 RMUT universities.

RMUT was chosen out of over 100 universities in Thailand because RMUT has the most Chinese students among public universities, and the sample selected is broad to ensure the reliability of this study. Also, RMUT University, as a public

university in Thailand, is relatively open and transparent regarding information about students and the university, which facilitated the data collection. The last reason is that the author works with RMUT University, and this study is expected to serve as a guide for RMUT to improve its competitiveness and innovation.

The number of Chinese and international students from other nations enrolled in the three RMUTs was analyzed. The Rajamangala University of Technology A (100) Rajamangala University of Technology B (200) Rajamangala University of Technology C (800)

1.5.2 Research Method

This researcher used a mixed approach by administering questionnaires to 300 Chinese students and interviewing 25 students, teachers, university management, and parents. According to the National Institutes of Health, rigorous quantitative and qualitative research procedures are purposefully combined in mixed methods research to take advantage of each methodology's strengths. Through a complementary approach that maximizes the strengths of each data type, mixed method approaches enable researchers to use various methods, combining inductive and deductive reasoning and offsetting the limitations of solely quantitative and qualitative research. This facilitates a more thorough understanding of health issues and potential solutions. Mixed methods can be used to create a detailed description and interpretation of the data, to make quantitative results more understandable, or to assess the generalizability of qualitative conclusions from small samples.

1.5.3 Selected Research University

RMUT universities in Thailand specialize in vocational and technical education, providing undergraduate and graduate programs in engineering, applied sciences, technology, design, business, and agriculture. They are accredited by ONESQA and recognized by MHESI, and they have a regional focus to cater to local needs. RMUT universities collaborate with industry partners to provide practical training, prioritize entrepreneurship and innovation, and strongly focus on research and development.

This research chooses the nine Rajamangala Universities of Technology

(RMUT) as examples. RMUTs are general universities currently under the Thai government's direct jurisdiction. Initially, they were vocational institutes on education and technology until 2005, when they were collectively ungraded to general universities for the Thai King's merits. The vision and mission of RMUT are primarily to produce well-trained technical talents needed for the country's economic growth and further industry modernization. They are scattered across different regions of Thailand, as seen in Figure 4.

The main reason for choosing the above three RMUTs for this study is the nine RMUTs; these three have international colleges and many international students, especially Chinese students. The other three universities are in Bangkok, the capital of Thailand, making it easy for the researcher to conduct the study.



Figure 1.3 Nine RMUT Locations in the Map of Thailand (Source: RMUTK)

1.6 Research Framework

1.5.4 Mixed Method Research Framework with Concurrent Parallel Design

Design

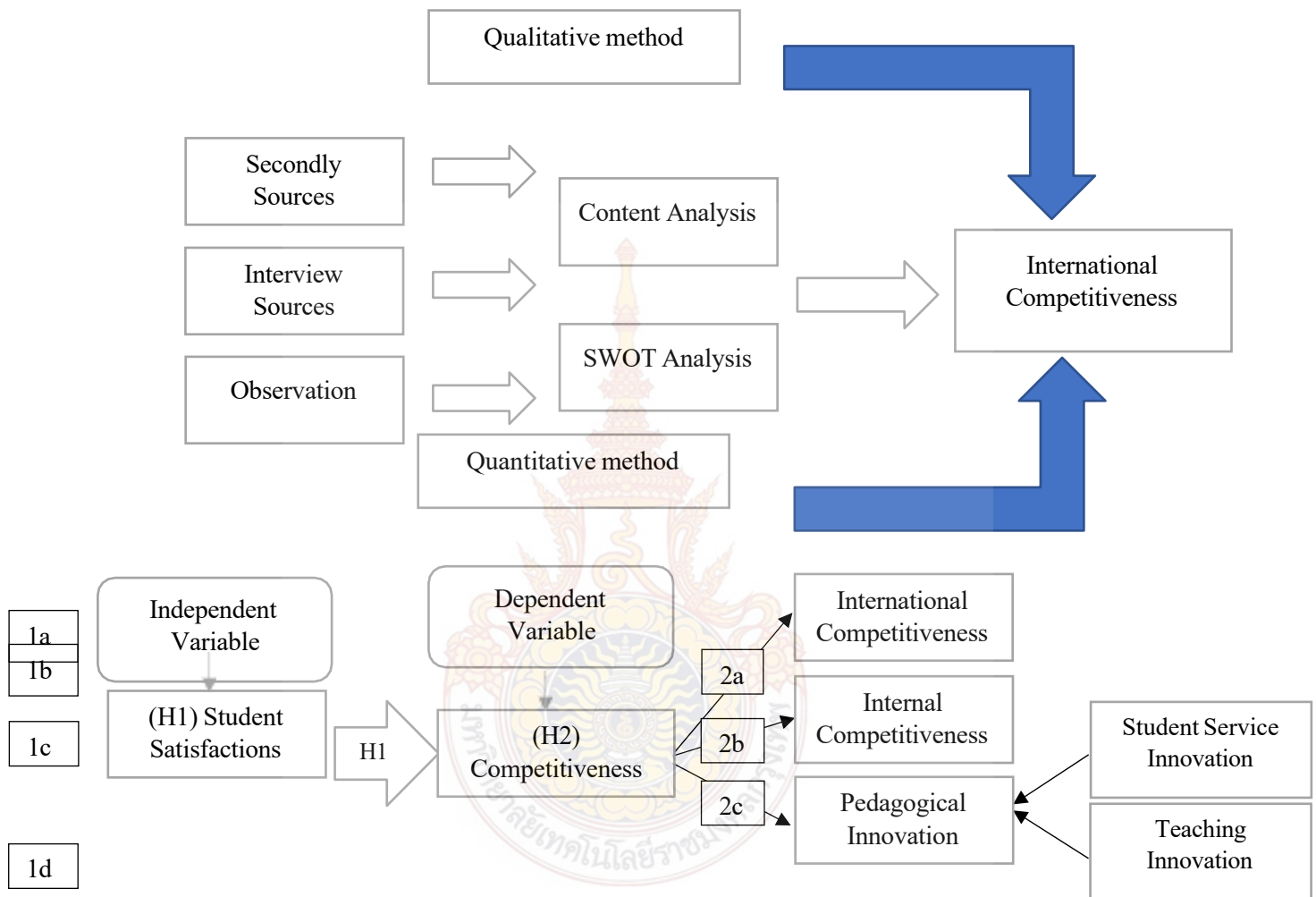


Figure 1.4 Mixed Method Research Framework

1.7 Definition of Key Terms

1.7.1 Student Satisfactions

Student satisfaction is an attitude that emerges from an assessment of students' educational experiences, services, and facilities provided by the HEI. Since students are the essential internal raters of the institute's performance, student satisfaction

surveys are critical because they allow HEIs to enhance and make required adjustments to their performance in the higher education setting. It also boosts the institute's confidence in delivering top-notch training. (Kanwar & Sanjeeva, 2022)

1.7.2 Competitiveness

Competitiveness is the ability of any organization to achieve its objectives more successfully than competing ones. Markets are often kept in balance by supply and demand.

1.7.2.1 Competitiveness of HEI

The ability of higher education institutions (HEIs) to draw in and keep professors, students, and research funds in a competitive environment is referred to as competitiveness. Compared to other institutions nationally and internationally, it gauges how well a given institution can position itself to excel in many areas.

1.7.2.2 International Competitiveness of HEI

Higher education institutions (HEIs) have the potential to perform and stand out worldwide in education, research, innovation, and reputation, which is called their "international competitiveness." It denotes that the HEI enjoys recognition and esteem on a global scale, drawing researchers, academics, and students from all around.

1.7.2.3 Internal Competitiveness of HEI

A Higher Education Institution's (HEI) ability to flourish and stand out among its peers and within its academic community is successfully utilizing its internal resources, competencies, and strengths. Improving the institution's total performance and reputation entails building an environment that promotes excellence, teamwork, and continual improvement.

1.7.3 Pedagogical Innovation

The process of generating, developing, and using new or improved technologies, products, processes, or services to fulfill requirements, alleviate problems, or advance various industries and fields is known as technology innovation. It entails using expertise, imagination, and resources to create unique solutions that significantly influence people, businesses, and society.

1.7.3.1 Curriculum Innovation

Creating, developing, and implementing new and improved educational programs and courses to satisfy the changing demands of students, the labor market, and society is known as curriculum innovation in higher education institutions (HEIs). It strives to match education with the needs of a changing world and give students a more relevant, effective, and engaging learning experience.

1.7.3.2 Student Service Innovation

To improve the overall student experience and assist students in their academic and personal growth, higher education institutions (HEIs) are developing and implementing new and enhanced services. The objective is to give students more excellent tools, support, and chances to excel in their coursework and maximize their time at the university.

1.7.3.3 Teaching Innovation

Implementing novel and innovative teaching techniques, approaches, and technology in higher education institutions (HEIs) aims to improve student engagement, learning results, and the learning experience. It focuses on adapting conventional teaching methods to consider students' changing demands, use new technologies, and accommodate various learning preferences.

1.7.4 Structural Equation Modeling (SEM)

SEM is a statistical technique combining multiple regression and factor analysis aspects. Building a model that depicts the proposed relationships between observed variables (measured variables) and latent variables (unmeasured constructs) is used to analyze complex relationships among variables. These connections are shown in a path diagram, where arrows point towards the direction and intensity of the links.

1.7.5 LISREL (Linear et al.)

One of the first programs to perform SEM analysis was LISREL. Karl Jöreskog and Dag Sörbom created it. Researchers can construct intricate structural models using LISREL, estimate the model's parameters, evaluate model fit, and run numerous statistical tests to determine the correlations between different variables.

1.8 Research Statement of Problem

A few scholars have studied and published the competitiveness and innovation of Thai Higher Education in the English language in the past decade (Jampaklay et al., 2022). Except for one research on the looniness of Chinese international students in Thailand (Lin et al., 2014), almost no scholarly attention is paid to them despite their large number and substantial contribution to local universities' tuition revenue.

The problem left here is how Thai higher education is sustained. Then, it increases its international competitiveness without assessing its strengths and weaknesses and the opportunities and challenges (or threats) it currently faces.

Meanwhile, without deep concern about its international students' satisfaction and other well-being, how could Thai Higher Education help Thailand become the educational hub in Southeast Asia?

The availability of comprehensive and reliable data related to Thai higher education's international competitiveness and innovation from the perspective of Chinese international students may be limited. Gathering relevant data may require extensive research and coordination with educational institutions, government agencies, and students.

Conducting research involving Chinese international students studying in Thai higher education institutions may present language and cultural barriers. Communicating effectively with the target population and ensuring accurate interpretation of responses may be challenging.

Selecting an appropriate and representative sample of Chinese international students studying in Thai higher education institutions is crucial for the validity and generalizability of the study's findings. Ensuring a diverse and representative sample may require careful consideration of institution type, academic disciplines, geographic locations, and student demographics.

Choosing appropriate research methods and instruments to collect data on Chinese international student satisfaction can be complex. Surveys, interviews, and focus groups are standard methods used in such studies. It is essential to develop reliable and valid instruments, considering cultural nuances and the specific context of Thai higher

education.

Relying solely on self-reported data from Chinese international students may introduce potential biases and limitations. Students' responses may be influenced by social desirability bias or personal experiences that are subjective and difficult to quantify objectively. Combining self-reported data with other objective measures or multiple data sources can enhance the robustness of the study.

While the study may provide valuable insights into the satisfaction of Chinese international students in Thai higher education, it is essential to acknowledge the potential limitations in generalizing the findings to other contexts. Cultural differences, country-specific policies, and institutional variations can significantly influence international student satisfaction and may limit the transferability of the study's conclusions.

1.9 Significance of the Research

This research has several significant implications and contributions to the marketing competitiveness of Thai public universities from a student satisfaction perspective. Firstly, the findings of this research could help Thai universities understand the factors critical in attracting and retaining international students, particularly from China. This knowledge could assist universities in developing effective marketing strategies and improving their services to meet the needs of international students, enhancing their competitiveness in the global market.

Secondly, as the research focuses on student satisfaction, it highlights the importance of prioritizing education quality and student services to create a positive and supportive learning environment.

Thirdly, the findings of this research could provide insight into the factors influencing international students' decision to recommend Thai universities to their peers. Positive recommendations from satisfied students can enhance the reputation and image of Thai universities, which could increase the number of international students and ultimately contribute to the local and national economy.

Fourthly, the research could have implications for policy and decision-making in higher education, as it identifies the critical factors contributing to international

student satisfaction. Policymakers could use this information to develop programs and policies to enhance Thai universities' competitiveness in the global market. Finally, the study adds to the knowledge of foreign student happiness, which is becoming increasingly important in the international higher education market. The research adds to our understanding of the factors that impact foreign student happiness by concentrating mainly on Chinese and Thai institutions, and it might serve as a foundation for future studies in other areas or nations.



CHAPTER II

LITERATURE REVIEW

Besides the Literature Review of various authors, this chapter also defines Competitiveness and Innovation Competitiveness with Student Satisfaction. It establishes the context of the literature for this study and the essence of previous research through an analysis of the last literature. This chapter briefly introduces competitiveness and student satisfaction and indicates the framework for this study. Finally, it establishes the hypothesis for this postgraduate study.

2.1 Related Theories

2.1.1 University Student Satisfaction

Education, particularly in the higher education sector, is a crucial driver of economic growth. University student happiness has become essential to quality assurance as the higher education industry has become more competitive. According to (Thomas & Galambos, 2004), students are considered higher education customers. University students' happiness is vital to institutional performance in that effective institutions have satisfied 'customers' since this satisfaction encourages enrolling more students or customers. Student satisfaction ratings are becoming more apparent and more accessible. As a result, most colleges worldwide continuously seek ways to increase student happiness at their institutions. Individual, institutional, and societal ramifications stem from university students' contentment with their institution. From an institutional standpoint, pleased students are more likely to continue their studies (retention) and thrive academically, improving the institution's financial situation and reputation. Happy students also make good public relations Representatives. Top student satisfaction aids in attracting and maintaining top achievers, which boosts the university's reputation and position. Maintaining and enhancing student happiness has long been seen as an essential aim of education and universities (Orpen, 1990), believing that student satisfaction reflects institutional success (Barton, 1978). The quality of the teaching personnel is an

essential component of student satisfaction. As a result, they are increasingly using student rating scales as an evaluation component of their teaching approach. For some time, most, if not all, university teaching staff have been obliged or expected to administer some teaching evaluation form to their students during each course session (Seldin, 1993). Assessing student satisfaction allows institutions to focus directly on quality development concerns to guarantee good educational standards (Wiers-Jenssen et al., 2002). Student satisfaction measures can also help identify and implement areas for improvement.

Universities originally designed satisfaction surveys to help administrators assess instruction quality and assist faculty in improving their instruction. There are more applications for university student satisfaction surveys today than ever (Kulik, 2001). For instance, to assess the standard and accessibility of library resources, to determine whether students have access to enough IT help, and to consider student comments on the social aspects of university life, to name a few. Many university lecturers support the expanded use of satisfaction surveys. Teaching personnel regard these surveys as credible and valid metrics that add systematic precision to the evaluation of instruction. However, not all teachers hold this opinion. Some teachers regard student satisfaction surveys as useless numbers. The teaching staff is concerned that students would use this anonymous power to get even or retaliate against them and that satisfaction surveys will convert—practical teaching assessments into a personality contest (Kulik, 2001).

Table 2.1 Concept of University Student Satisfaction of International Aspect in HEI

| Author (Year) | Concept of Student Satisfaction in HEI |
|-----------------------------------|---|
| Kotler and Clarke (1987) | Satisfaction is the feeling a person gets when he or she has received a performance or a result that meets his or her expectations. Satisfaction is determined by the relative degree of expectations and how performance is perceived. |
| Cambiano and De Vore (2002) | Feel that satisfaction encompasses aspects of students' perceptions and experiences during their college years. |

Table 2.1 Concept of University Student Satisfaction of International Aspect in HEI
(continued)

| Author (Year) | Concept of Student Satisfaction in HEI |
|---|---|
| Van Damme, D. (2002) | Higher education is related to critical developments in transitioning to a global information society. These shifts challenge higher education institutions and policy, which must adjust. |
| William, (2002) | Although it is perilous to regard students as customers, given the current environment of the higher education marketplace, there is a new moral right that students have become "customers" and may, as fee payers, reasonably demand that their ideas be acknowledged and acted upon. |
| Thomas and Galambos (2004) | The field of higher education. University student happiness has become essential to quality assurance as the higher education industry has become more competitive. |
| Kéri, A. (2021). | Student satisfaction in higher education is defined using the expectancies disconfirmation theory. The subjective comparison of students' expectations and experiences is called student satisfaction. Others have argued that service quality judgments influence student happiness. |
| Weerasinghe, Salinda & Lalitha, S & Fernando, (2017) | Students' satisfaction may be described as a short-term attitude arising from assessing the educational experience, services, and facilities provided to students. |
| Kanwar, A., & Sanjeeva, M. (2022) | Students' happiness and the entire exercise are an innovative way to obtain students' input on their academic experience, views, and expectations from the higher education institution, and lastly, assess their degree of satisfaction. It helps to understand students' perceptions, likes, and dislikes, and, more significantly, which educational experiences they value the most and which facilities need to be improved. |
| Prihandono, D., Wijayanto, A., Cahyaningdyah, D., & Wijaya, A. P. (2023) | According to the findings, student satisfaction moderates the impact of perceived academic services on student dropout risk. Student happiness is heavily influenced by perceived academic service. Students who are satisfied with academic services are less likely to drop out. Student dropout rates are decreasing because students' assessments match the assessment requirements. Students who receive sufficient assessments are more likely to graduate on time. |

2.1.2 The Concept of Competitiveness

Within the capitalist system, it is fundamental that enterprises live and prosper via effective competition. If this is the case, it is evident that managers must understand the components of competitiveness to obtain them.

Indeed, the search for these ingredients will be the primary function of managers. Nevertheless, this is only very helpful if we can precisely say what it means to be competitive. We have already used the term competitiveness. Competition and competitive are three words that refer to a concept that has yet to be defined. This leads to a great potential for confusion. It is widely accepted within the capitalist system that businesses must survive and flourish through effective competition.

Consequently, it becomes crucial for managers to know about the essential elements of competitiveness to attain them. The pursuit of these elements becomes the principal role of managers. However, merely stating this fact lacks practicality unless we can precisely define what it truly means to be competitive. Thus far, we have employed the terms "competitiveness," "competition," and "competitive," all referring to a concept that remains undefined. This situation undoubtedly creates a significant potential for confusion. For example, some define competitiveness as a state, while others define it as an attitude. Competition may be described as the pressure on any firm or the company's action in the marketplace. There are several ways to describe competition. It might refer to an industry or company's status or condition. It might be used to express a business strategy. It might be viewed as a performance indicator. (Connor, 2003)

Table 2.2 Concept of Competitiveness in HEI

| Author (Year) | Concept of Competitiveness in HEI |
|--|--|
| Kireeva, N., SLEPENKOVA, E., Shipunova, T., & Iskandaryan, R. (2018) | One can reach and maintain a high level of competitiveness with the help of a higher education institution that has developed a development plan, built infrastructure (which draws the best applicants with high learning potential), produced in-demand graduates and educational programs (demand for which may also be dependent on infrastructure and a contingent of students), and raised money to maintain and develop its core activities impacted by academic entrepreneurship will almost certainly rank highly in the global educational rankings. |
| Maduro, S., Fernandes, P. O., & Alves, A. (2018) | Competitiveness in higher education necessitates student recruiting and public initiatives. A good reputation suggests a good brand image. The design abilities of the public higher education sector may go considerably farther when operating at the strategic level, creating its directions of action in the marketplaces where it works to reflect its corporate reputation in the minds of the positively customer. |
| Miotto, G., Del-Castillo-Feito, C., & Blanco-González, A. (2020) | Global competition for public institutions is expanding. These institutions compete for economic, private, and governmental financing, as well as the most promising students, the most productive business ties, and the engagement of their alumni. To gain access to these resources, public university administrators are altering their management style and developing new strategic plans, as is the case with any HEI. |
| Trunina, I., Pryakhina, K., & Bilyk, M. (2021) | The article refers to the study program as a competitive advantage. A synthesis of elements from the Business Model Canvas and the Criteria for the Study Program Quality Evaluation established by the National Agency for Higher Education Quality Assurance (Ukraine) is given for building the study program idea. It is possible to build a high-quality product - the study program - that HEIs will need to market in the future by considering all (or a portion of) the Business Model Canvas components. |

Table 2.2 Concept of Competitiveness in HEI

| Author (Year) | Concept of Competitiveness in HEI |
|--|---|
| Marulanda-Grisales, N., & Vera-Acevedo, L. D. (2022) | The production of competitive advantages in Higher Education Institutions (HEIs) is built on intangible Intellectual Capital (IC) assets such as teaching quality, research, innovation, image, reputation, and stakeholder relationships. |
| Hannan, E., & Liu, S. (2023) | Higher education institutions understand that a digital-first approach gives new competitive advantages. Advanced technologies such as chatbots and virtual reality will soon be the standard in academics and employment for faculty and students. |

2.1.3 International Recognition of Thai Universities

While Thai universities have been taking steps to improve their international recognition, there may be challenges or limitations that affect their overall award on the global stage. Thai universities' primary language of instruction is Thai, which can pose challenges for international students and faculty who may need to be fluent in Thai. This can limit Thai universities' internationalization efforts and recognition compared to universities that offer courses in English or other widely spoken languages. While Thai universities have invested in research and innovation, the overall research output, including publications in internationally recognized journals, patents, and innovations, may be lower than in other countries with established research-intensive cultures and funding.

Thai universities may have lower visibility and exposure in the international academic community and media than universities from more prominent higher education systems. This can impact the perception and recognition of Thai universities among international stakeholders, including potential students, faculty, and employers. Limited funding and resources for research, infrastructure, and internationalization efforts may impact Thai universities' overall quality, capacity, and competitiveness on the international stage. The recognition and equivalence of degrees earned from Thai universities in other countries may vary depending on the country's recognition policies and regulatory frameworks. This can affect the mobility and employability of graduates

from Thai universities in the international job market. (Rhein, 2017)

Table 2.3 Concept of International Recognition in HEI

| Author (Year) | Concept of International Recognition in HEI |
|-------------------------------------|---|
| Knigh. (1993) | Introducing an international/intercultural component into the institution's teaching, research, and service responsibilities is known as "internationalization of higher education." |
| Van der Wende. (1997) | Internationalization is a goal in and of itself. However, in many nations and situations, it is viewed as an end, such as quality improvement, restructuring, and upgrading higher education institutions and services. |
| Author (Year) | Concept of Competitiveness in HEI |
| Van Damme, D. (2002) | Higher education is related to critical developments in transitioning to a global information society. These shifts challenge higher education institutions and policy, which must adjust. |
| Qiang, Z. (2003) | For higher education to develop into a first compliant system with international norms and then one that is open and responsive to its global environment, internationalization is not only a goal in and of itself but also a valuable resource. |
| Teichler, U. (2004) | "Internationalization," the expanding border-crossing activities between national systems of higher education, is giving way to "globalization," the increasing border-crossing activities of blurring national systems, frequently used to describe global trends and growing global rivalry. |
| Altbach, P. G., & Knight, J. (2007) | Academic systems, organizations, and individuals adopt various policies and techniques to adapt to the international academic environment. Various factors fuel internationalization, including economic gain, knowledge, language expansion, and curriculum augmentation with foreign content. |

2.1.4 The Dimensionality of University Student Satisfaction

There are several possible advantages and uses for institutions, students, and

society in understanding the underlying aspects of student happiness and the factors that contribute to it. The dimensionality of university student happiness has been the subject of several research (e.g., Elliott & Healy, 2001; Wiers-Jenssen et al., 2002). Generally speaking, the following variables tend to stand out: quality of education - instruction from faculty and course material; social facets or possibilities; Facilities and resources on campus were only used to extract two university student satisfaction indicators (DeVore & Handal, 1981; Garcia-Aracil, 2009); (Okun et al., 1981); and (Okun et al., 1986): Features and services; academic elements.

Six categories of university satisfaction were identified by the College Student Satisfaction Questionnaire (CSSQ): Procedures and rules, pay, benefits, the caliber of education, and social life. Recognition A five-factor model of university student happiness was presented by (Betz et al., 1970; Betz et al., 1971) and (DeVore & Handal, 1981). Working conditions (related to the academic environment); Compensation (cost vs. benefit); Education Quality (e.g., teacher competence); Social Life (participation in social activities); Recognition (social acceptance). A three-factor hypothesis with several sub-factors was presented by (Clemens, 2007) to explain student satisfaction better: Interaction and Result Quality. Physical Environment (Lo, 2010) found three elements that influence how satisfied university students are: Instructions and instructor assistance, personal dedication to study, and course policies.

According to research by Wiers-Jenssen et al. (2002), academic and pedagogical teaching quality is a significant factor in determining how satisfied students are with their education. The study emphasized that when deciding what contributes to student satisfaction, it is essential to consider the social environment, the aesthetics of the physical infrastructure, the quality of administrative staff services, the quality of academic staff supervision and feedback, the composition, content, and relevance of the curriculum, as well as the quality and accessibility of extracurricular activities.

2.1.5 Satisfaction of Chinese Students in Thai Public Universities

Limited research is available on the satisfaction of Chinese students in Thai public universities. However, a study published in the *Journal of International Education and Practice* in 2019 examined the factors influencing the fulfillment of international

students studying in Thailand, including Chinese students. (British Council., 2019) The study found that factors such as academic quality, the quality of teaching and research, campus facilities and services, social and cultural experiences, and cost of living were essential factors that influenced international students' satisfaction in Thai universities. (Song & Ma, 2019)

Additionally, a report published by the British Council in 2019, titled "The Landscape of International Education in Thailand," noted that Chinese students were generally satisfied with their experiences studying in Thailand. The report cited factors such as affordability, quality of education, and cultural similarity as reasons why Chinese students were attracted to studying in Thailand. While there is limited research on the satisfaction of Chinese students in Thai public universities, many Chinese students are generally satisfied with their experiences studying in Thailand. However, further research is needed to understand better Chinese students' experiences and satisfaction levels in Thai public universities.

2.1.6 Measurement (or Index) of Competitiveness

2.1.6.1 SWOT Analysis

SWOT analysis is a framework that can be used to assess the competitiveness of a business or organization. The analysis consists of identifying the internal strengths and weaknesses of the company or organization, as well as the external opportunities and threats it faces in the market. (Chen & Li, 2020) Here is a SWOT analysis of the competitiveness.

Strengths: Unique value proposition: A business with a unique value proposition has an advantage over its competitors. It can differentiate itself in the market and appeal to a specific target audience. Strong brand reputation: A strong brand reputation can help a business build customer trust and loyalty, making it difficult for competitors to replicate. Skilled workforce: A company with an experienced and knowledgeable workforce has the potential to provide high-quality products and services to customers. Cost advantages: A business with lower costs than its competitors can offer products and services at a lower price, giving it a competitive advantage in the market.

Weaknesses: Lack of innovation: A business that does not invest in

research and development may need help keeping up with competitors and constantly improving its products and services. Poor customer service: A company with poor customer service may need help to retain customers and develop a negative market reputation. Limited resources: A business with limited resources may need to invest in marketing, research and development, and other areas that can give it a competitive advantage. Outdated technology: A business with obsolete technology may need help keeping up with competitors using the latest technology to improve their operations.

Opportunities: Growing market: A business operating in a growing market has the potential to expand its customer base and increase its revenue. New technology: A business adopting new technology can improve its operations and offer new products and services to customers. Changes in regulations: Laws can create new opportunities for businesses that can adapt to the new regulatory environment. Strategic partnerships: A business that can form alliances with other businesses can expand its offerings and reach new customers.

Threats: Economic downturns: Economic downturns can lead to decreased demand for products and services, making it difficult for businesses to compete in the market. Intense competition: Intense competition can make it difficult for businesses to differentiate themselves and attract customers. Changes in consumer preferences: Changes in consumer preferences can make it difficult for businesses to keep up with the latest trends and adapt their products and services accordingly. Technological disruption: Technological disruption can make it difficult for companies to keep up with competitors using the latest technology to improve their operations and offer new products and services to customers.

2.1.6.2 SWOT Analysis Matrix (Example)

Table 2.4 SWOT Matrix (Source: Ommani, 2011)

| | External factor | Weight | Rating | Weighted score |
|------------|--|--------|--------|----------------|
| Strengths | High quality land | 0.07 | 3 | 0.21 |
| | High technical knowledge of farmers | 0.06 | 4 | 0.24 |
| | Frequency of water for riverside situation | 0.06 | 4 | 0.24 |
| | Large labor force | 0.07 | 3 | 0.21 |
| | Indigenous farming systems | 0.09 | 3 | 0.27 |
| | New technology | 0.07 | 3 | 0.21 |
| | Total | 0.42 | | 1.38 |
| Weaknesses | Extension system oriented towards accessible farmers | 0.08 | 2 | 0.18 |
| | Lack of added value | 0.08 | 2 | 0.16 |
| | Lack of resources | 0.08 | 2 | 0.16 |
| | Lack of reliable data and information on organic agriculture | 0.07 | 1 | 0.07 |
| | Poor local market opportunities and infrastructure | 0.08 | 1 | 0.08 |
| | Poor image marketing | 0.10 | 2 | 0.20 |
| | High cost of production | 0.09 | 2 | 0.18 |
| | Total | 0.58 | | 1.08 |
| | Total weighted score | 1 | | 2.46 |

2.1.7 Pedagogical Innovation

Pedagogical innovation is a process that reinvents teaching practices to support student learning better. If successful, this process will result in deeper understanding and better learning outcomes for students, as they can engage with curricular content in more impactful ways than traditional didactic instruction methods. (LaCroix, 2020)

"Pedagogical technologies" were transformed into new concepts: educational, pedagogical, and teaching technologies. Educational technologies reflect the general strategy for the development of education, a unified educational space, their purpose of predicting the outcome of education, its specific design and planning, predicting results, and determining the corresponding educational goals of standards. Examples of educational technologies are the concepts of education and the education system. At the present stage, this is a humanistic concept of education, the education system. (Pliushch

et al., 2022)

2.1.7.1 Pedagogical Innovation

Extracting data from the interviewed professors' discourses, their analysis, and their interpretation has allowed the researcher to propose an updated definition of pedagogical innovation: It is a new way of teaching, unlike those commonly used; it is bespoke and surprises students. Consequently, it heralds a change driven by a transitory adaption to pedagogical objectives and the new student profile. It stems from a reflection that is pedagogical, intellectual, creative, psychological, and sustained, and that shapes itself progressively through a multi-level and multi-impact process linked both to the audience and the discipline or the technology and that aims to improve quality, like a desire to make the subject understood and foster success. Unlike technological innovation, innovation is only pedagogical if it is constructed by pedagogical thinking in human relations at the will of the personality of the devoted professor (Walder, 2014).

Pedagogical innovation in a university context is characterized by an intentional action that aims to improve students' learning sustainably. The technological, financial, and social changes of today's universities require more extraordinary performance from the professor, which their peer assess' and students' qualitative criteria (Walder, 2014).

2.1.7.2 Student Service Innovation

Service innovation refers to developing new services and practical ideas to improve efficiency and effectiveness in service delivery (Chen et al., 2016; Chen & Tseng, 2013). Service innovation is essential for organizations to sustain a competitive advantage for long-term survival in competitive and complex business environments (Snyder et al., 2016). The increasing pace of globalization requires organizations to be innovative in their service provision to remain competitive in their industry. Higher education is one of the examples. Service innovation is critical in helping universities sustain their operations and gain a competitive edge. (Cheng et al., 2019).

Higher education practitioners must better understand customer needs and implement long-term strategies to attract loyal students. Practitioners should place

more emphasis and resource investment on service innovation to boost student satisfaction, subsequently leading to a favorable institution image and increased loyalty for long-term development. The results interest services marketing scholars and are relevant to practitioners motivated to benchmark against best practices in the higher education sector. (Cheng et al., 2019)

2.1.7.3 Teaching Innovation

Technology versus pedagogy contains a single sub-theme: not a PI if there is no pedagogical thinking. The 1990s ideology that computers would replace professors has left its mark. Effectively, the notion of technology versus pedagogy emerges from the verbatim as a clarification for the participants, who explain the distinction between pedagogical and technological innovation. They only perceive something as a pedagogical innovation when it is constructed by pedagogical thinking. Thus, the participants denounce a recurrent confusion between technological and pedagogical innovation, which they firmly and collectively wished to clarify. For example, making a PowerPoint presentation from an online lesson is not a pedagogical innovation. However, if a professor posts clinical case studies online with a specific problem to solve, and then the student finds the solution and can explain how they obtained the result, they can practice autonomously.

Similarly, one professor admitted to proposing a discussion forum without offering it due to a lack of time, guidance, and a pedagogical aim. He noted that this technological innovation failed due to a lack of pedagogical intent in his approach. (Walder, 2014)

This study presents an innovation experience in the university scope based on the flipped classroom methodology as a response to the methodological changes required to endow students with knowledge and competencies in the context of higher education. Moreover, this study contributes to expanding the literature on the application of active methodologies in higher education, specifically regarding the influence of the flipped classroom methodology on the acquisition of knowledge and the development of competencies in university students. (Sevillano-Monje et al. ,2022)

2.2 Related Studies

2.2.1 Literature on Student Satisfaction and its Measurement

Table 2.5 Literature on Student Satisfaction and Its Measurement According to Various Authors (presented in alphabetical order)

| Author (Year) | Literature on Student Satisfaction and Its Measurement |
|---|--|
| Clemes, Michael D., Christopher EC Gan, and Tzu-Hui Kao. (2008) | The authors found that academic quality, administrative service quality, and campus environment quality were the most significant predictors of overall student satisfaction. Academic quality was the most important factor, followed by the quality of administrative service and campus environment. They also found that the demographics of students, such as gender, age, and ethnicity, had little effect on student satisfaction. |
| Wiers-Jenssen, Jannecke, Bjorn Stensaker, and Jens B. Grogaard. (2020) | The authors surveyed 385 undergraduate students at a Norwegian university to examine the relationship between various aspects of the academic experience and overall student satisfaction. They used factor analysis to identify the key dimensions of student satisfaction. They found that academic quality, student support services, and campus environment were the most significant predictors of overall satisfaction. |
| Douglas, Jacqueline, Alex Douglas, and Barry Barnes. (2006) | The study involved developing a questionnaire based on previous research on student satisfaction and piloting it with a sample of students. The questionnaire comprised 28 items across six domains: teaching and learning, academic support, learning resources, assessment and feedback, personal development, and social life. The authors used factor analysis to identify underlying dimensions of satisfaction and found that the six domains were distinct but interrelated. |
| Alves, Helena, and Mário Raposo. (2007) | The authors start by reviewing the literature on student satisfaction and synthesizing the main determinants of satisfaction, which they group into three categories: Institutional, academic, and social. They then develop a conceptual model that integrates these determinants, proposing that student satisfaction is influenced by various factors such as academic quality, faculty quality, administrative quality, student services, social interaction, and campus infrastructure. |

| | |
|---|--|
| Arambewela, Rodney, and John Hall. (2009) | The competitiveness of universities is defined as their ability to attract and retain the best students, faculty, and resources, as well as to produce high-quality research and innovation. The author argues that a strong online presence through e-public relations can enhance the reputation and visibility of universities, which can help them attract and retain the best talent and resources. |
| Elliott, Kevin M., and Margaret A. Healy. (2001) | The study utilized survey research to collect data from students in a large public university in the United States. The authors employed a factor analysis technique to identify six key factors influencing student satisfaction: academic program quality, faculty, financial aid, campus climate, extracurricular activities, and campus services. |
| Allen, Mike, John Bourhis, Nancy Burrell, and Edward Mabry. (2002) | The authors conclude that while distance education can be a viable alternative to traditional classrooms, institutions should consider different student groups' unique needs and preferences when designing and delivering distance education courses. |
| Bolliger, Doris U. (2004) | The findings suggest that the key factors determining student satisfaction in online courses are instructor support, course structure, and social presence. Instructor support includes the availability of instructors, the timeliness and quality of feedback, and the instructor's responsiveness to student needs. The course structure includes factors such as course organization, clarity of objectives, and course content. |
| Guolla, Michael. (1999) | This research argues that student satisfaction is influenced by both the level of teaching quality and the degree to which expectations are met. He also proposes a model for measuring the relationship between teaching quality and student satisfaction, including direct and indirect effects. |

| | |
|---|--|
| Johnston, James, Jeff Killion, and Jody Oomen. (2005) | The authors found that several factors, including the quality of course materials, instructor communication, student interaction, and technical support, influenced students' overall satisfaction with online courses. Additionally, the authors discovered that student satisfaction was positively associated with their perceived learning and performance outcomes. |
| Bolliger, Doris U. (2004) | The article discusses the importance of student satisfaction and its relationship to retention and success in online courses. The author then reviews the literature on factors contributing to student satisfaction in online courses, including course design, instructor presence and interaction, communication and support, and technology. |
| Douglas, Jacqueline, Robert McClelland, and John Davies. (2008) | The authors begin by discussing the importance of student satisfaction for universities, including its relationship to retention and recruitment. They then review the literature on student satisfaction and identify six key factors influencing student satisfaction: academic experience, social experience, campus environment, administrative processes, personal background, and future benefits. |
| DeShields, Oscar W., Ali Kara, and Erdener Kaynak. (2005) | The authors found that hygiene and motivator factors significantly predict student satisfaction and retention. The hygiene factors, including physical facilities, quality of instruction, and administrative services, were found to affect student satisfaction significantly. On the other hand, the motivator factors, including career development opportunities, academic reputation, and academic challenge, were found to have a significant positive effect on student retention. |

2.2.2 Competitiveness According to Various Authors

Table 2.6 Variables of Competitiveness According to Various Authors
(presented in alphabetical order)

| Author (Year) | Variables of Competitiveness |
|--|--|
| Houston, John, Paul Harris, Sandra McIntire, and Dientje Francis. (2002) | It involves skills, knowledge, resources, and strategies that enable individuals or organizations to achieve their goals and outperform their competitors. |
| Porter, Michael E. (2008) | It includes broader factors, such as innovation, creativity, and sustainability. |
| Harris, Paul B., and John M. Houston. (2010) | It is a multifaceted concept that includes various factors, such as quality of goods and services, cost competitiveness, innovation, human capital, and infrastructure. |
| Benítez-Márquez, María- Dolores, Eva M. Sánchez-Teba, and Isabel Coronado- Maldonado. (2022) | Policymakers and businesses have become increasingly interested in understanding and improving competitiveness to promote economic growth, job creation, and social welfare. |
| Savić, Nebojša. (2012) | Measures such as the NCI (National Competitiveness Index) can provide a comprehensive and balanced view of competitiveness that incorporates economic, social, and environmental factors and can guide policymakers and businesses in developing strategies for improving competitiveness and promoting sustainable economic growth. |
| Olczyk, Magdalena, Marta Kuc Czarnecka, and Andrea Saltelli. (2022) | Measures such as the GCI (Global Competitiveness Index) 4.0 can provide valuable insights into the strengths and weaknesses of different countries and guide policymakers and businesses in developing strategies for improving competitiveness and promoting sustainable economic growth. |

2.2.3 Competitiveness of Universities According to Various Authors

Table 2.7 Variables of Competitiveness of Universities According to Various Authors (presented in alphabetical order)

| Author (Year) | Variables of Competitiveness of Universities |
|---|---|
| Dimitrova, Gergano, and Teodora Dimitrova (2017) | More competitive universities are likely to attract top students, faculty, and staff, as well as research funding and partnerships with industry. |
| Lin, Lin (2020) | Developing effective evaluation systems and models can help universities measure and improve their competitiveness, attract top students and faculty, and enhance their impact on society. |
| Parakhina, Valentina, Olga Godina, Olga Boris, and Lev Ushvitsky (2017) | Strategic management can help universities achieve sustainable competitive advantage and enhance their global reputation and impact. |
| Endovitsky, D. A., V. V. Korotkikh, and M. V. Voronova. (2020) | They argue that the competitiveness of universities depends on various factors, including the quality of education, research output, internationalization, and financial resources. |
| Baharun, Hasan. (2019) | The author argues that a strong online presence through e-public relations can enhance the reputation and visibility of universities, which can help them attract and retain the best talent and resources. |
| Kireeva, N., Slepenskova, E., Shipunova, T., & Iskandaryan, R. (2018) | Discuss how the competitiveness of higher education institutions influences or correlates with the development of academic entrepreneurship. |

2.2.4 Industrialization of Higher Education and the Situation in Thailand

2.2.4.1 Overview of Higher Education in Thailand

In 2018, 155 institutions of higher learning were part of the Office of the Higher Education Commission, including 24 autonomous universities, 10 public universities, and 38 Rajabhat universities (the higher education facility that was first founded to produce teachers). There are now nine Rajamangala universities (the institutions of higher education based on creating engineers and technicians at the vocational level and higher education), comprehensive universities in the group that concentrate on producing undergraduate students. There are now 73 private institutions, one community (20 campuses spread around Thailand), technology institutes, colleges, and universities concentrating on producing undergraduate students.

Under the Ministry and various Commission on Higher Education divisions, higher education and academic institutions specialize in higher education (Office of the Education Council, 2018). One million seven hundred ninety thousand three hundred forty-one students were enrolled in higher education during the 2016–17 academic year.

2.2.4.2 Industrialization of Higher Education

Industrialization of education is defined as treating HEIs like businesses and treating education as an industry. The entire educational system should adopt the market economy's rules and mechanisms to distribute educational resources according to the market mechanism. The goal of the HEI should be to maximize revenues through independent operation and accounting. As a result, the connection between education and the economy becomes more direct and immediate, and education itself takes on the characteristics of an economic activity. Education will be dissimulated through industrialization since its economic features will match its fundamental attributes. Industrialization. (Li,2015)

2.2.4.3 Higher Education Problem in Thailand

In Thailand, the government has strongly emphasized increasing the number of university graduates in the workforce to drive economic growth. This has led to a significant expansion of the higher education system, with a proliferation of new

universities and degree programs. However, this expansion has been accompanied by concerns over quality and the standardization of curricula to meet the demands of the job market.

The primary issue Thai people face across the nation is educational disparity. Due to the discrepancy in Thai people's economic status, inequality is growing in Thailand. According to statistics (Fernquest, 2017), both the quality of education in Thailand and overall educational disparity are below the worldwide average. Education inequality is a problem that extends beyond the fundamentals. It extends to higher academic levels as well. While the media has focused much attention on Thailand's top universities' poor standing compared to their overseas counterparts, the discrepancy between the nation's various educational institutions represents a more significant issue. Only a few of Thailand's best students continue to be drawn to these universities despite the country having more than 173 higher education institutions. As a result, there is a significant variation in student quality across various universities. Cruces (Domenech & Gasparini, 2014) support the idea that there are several variables, including poverty, gender, and others, that contribute to educational disparity.

Additionally, there is a link between income inequality and educational disparity. Meanwhile, the state's higher education strategy primarily aims to increase competition among the best institutions. While competition among higher education institutions is crucial, Rajabhat universities and other lower-ranked institutions should receive attention and funding.

The state's funding allocation for institutions with limited admittance is ten times greater than that for Rajabhat universities in some areas. Students' performance could be more balanced due to the diverse resources invested in various universities. (Yuvaras, 2016) pointed out corruption in Thailand's education system, which causes the misallocation of resources and lower education quality.

2.2.5 How to Apply SWOT in Higher Education

There are few publications about using a SWOT analysis in higher education. The findings of Kuiper, Thomas, Lee, and other studies show that the SWOT model aids the critical stakeholders in higher education entities in identifying areas of expertise that

present advantages or opportunities and flaws in the internal and external environment that offer disadvantages or threats. Strategies to overcome shortcomings may be devised by identifying the areas in which they are weak (Kuiper & Thomas, 2000). This will improve the overall efficiency and efficacy of the planning process.

SWOT analysis helps identify an organization or institution's strengths, weaknesses, opportunities, and threats. In higher education, SWOT analysis can evaluate an institution's current state and identify improvement areas. (Alsharari & Robinson, 2018) Conduct an internal investigation of the institution's strengths and weaknesses. This includes evaluating the institution's academic programs, faculty, facilities, and resources. The goal is to identify areas of excellence and areas that require improvement.

2.2.6 Thai University's Competitiveness in General

Thai universities have been ranked in various global rankings, such as the QS World University and Times Higher Education World University Rankings. However, Thai universities generally rank lower than their counterparts in other countries in the region, such as Singapore and Malaysia. In the 2022 QS World University Rankings, the highest-ranked Thai university is Mahidol University, ranked 214th. (Chompoonuh & Wongchai, 2021)

Funding is a critical factor in the competitiveness of universities. Thai universities generally receive lower funding levels than universities in other countries in the region, such as Singapore and Malaysia. This limits the resources available for research and development, affecting Thai universities' competitiveness. (Lee & Yoon, 2019)

Thai universities' research output is generally lower than that of universities in other countries in the region. A study by the Thailand Development Research Institute found that the number of research publications by Thai universities was lower than the average for Southeast Asia. (Thailand Development Research Institute, 2018) Collaboration with international partners can enhance the competitiveness of universities. Thai universities have recently increased their cooperation with international partners, including joint research projects and student exchanges. However, there is still room for improvement in the number and quality of international collaborations.

The quality of education provided by Thai universities is also an essential factor

in their competitiveness. A study by the Office for National Education Standards and Quality Assessment found that the quality of education provided by Thai universities was generally satisfactory. Still, there were areas for improvement regarding teaching quality, curriculum design, and student assessment. (Office for National Education Standards and Quality Assessment, 2017)

Internationalization is another factor that can enhance the competitiveness of universities. Thai universities have been making efforts to increase their internationalization, such as offering courses in English and recruiting international students and faculty members. (De Silva & Matsuura, 2019)

The ability to innovate and foster entrepreneurship is another critical factor in the competitiveness of universities. Thai universities have been increasing their efforts to promote innovation and entrepreneurship, such as establishing incubators and accelerators to support startups. (Kantabutra & Kiatpathomchai, 2018)

Effective governance and management are critical for the competitiveness of universities. Thai universities have been trying to improve their governance and management structures, such as establishing boards of trustees and enhancing transparency and accountability. (Tungtakanpoung, N., & Sriwilai, K., 2020)

2.2.7 Academic Strategic Plan for HEI for Internationalization with Innovation and Competitiveness

Table 2.8 Academic Strategic Plan for HEI for Internationalization with Innovation and Competitiveness (presented in alphabetical order)

| Author (Year) | Variables of Academic Strategic Plan For HEI |
|------------------------------|---|
| Jose, M.M.S. & Julio, (2014) | For HEIs, it is essential to establish the best approach to draw not just more but also the top international students. |

Table 2.8 Academic Strategic Plan for HEI for Internationalization with Innovation and Competitiveness (presented in alphabetical order)

| Author (Year) | Variables of Academic Strategic Plan For HEI |
|--|--|
| Lane, J. E. (2014) | Higher education internationalization, formerly exclusively of interest to college and university executives, is now gaining more and more attention from government officials and other policymakers. Higher education has developed as a crucial link as globalization causes nations to become more economically, culturally, and politically integrated. Colleges and universities foster economic competitiveness in student and scholar mobility and act as public diplomacy platforms. |
| Chankseliani, M. (2018) | The economic explanation was the most important of the four key justifications for recruiting overseas students. Interviewed international/admissions staff members saw student mobility from this region as a reflection of British political and strategic aspirations and socioeconomic change in the sending nations. They discussed the regional economy and the growth of the HE sectors in the originating nations. |
| Bravo, A., Serralheiro, A., & Militar, A. (2018) | For HEIs to become global institutions, the internationalization of HE has progressed beyond transnationalization to student and staff mobility. The literature examination revealed that the reasons for internationalization vary and are connected to HEIs' reactions to globalization's sociocultural, economic, intellectual, and political difficulties. The idea that internationalization is necessary for higher education institutions to perform well and for countries to remain competitive does not seem to have strong empirical backing. |

CHAPTER III

RESEARCH METHODS

This chapter focuses on this study's research design and methodology by introducing it and the process and content of data collection and analysis. The research methodology and data analysis methods for this study are established.

3.1 Research Design

3.1.1 Mixed Method

Mixed methods research combines qualitative and quantitative elements to answer this research problem. Compared to a single quantitative or qualitative inquiry, using mixed techniques can help one get a more complete picture because they include the benefits of both approaches. Mixed methods research is extensively used in the behavioral, health, and social sciences, especially in interdisciplinary contexts and challenging situational or societal issues. In this study, qualitative research can provide exploratory information on HEI and the current situation of the research problems in HEI.

Concurrently, the quantitative research with causal research method provides the fact-finding and model-building of the causal relationship of the variables as a conceptual framework. Both so-called mixed methods with concurrent parallel design provide the best solutions for developing the guidelines of a strategic plan for HEI to achieve international innovation and competitiveness.

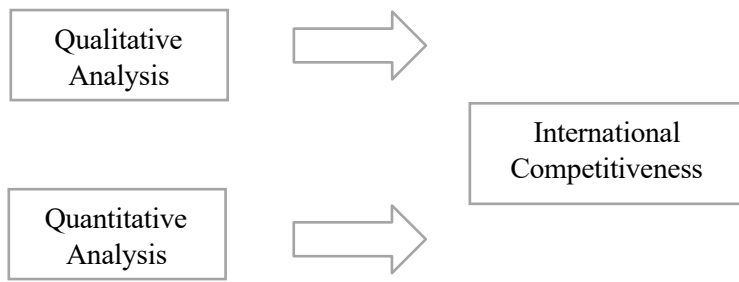


Figure 3.1 Mix Method Research Design

3.1.2 Mixed Method Research Framework with Concurrent Parallel Design

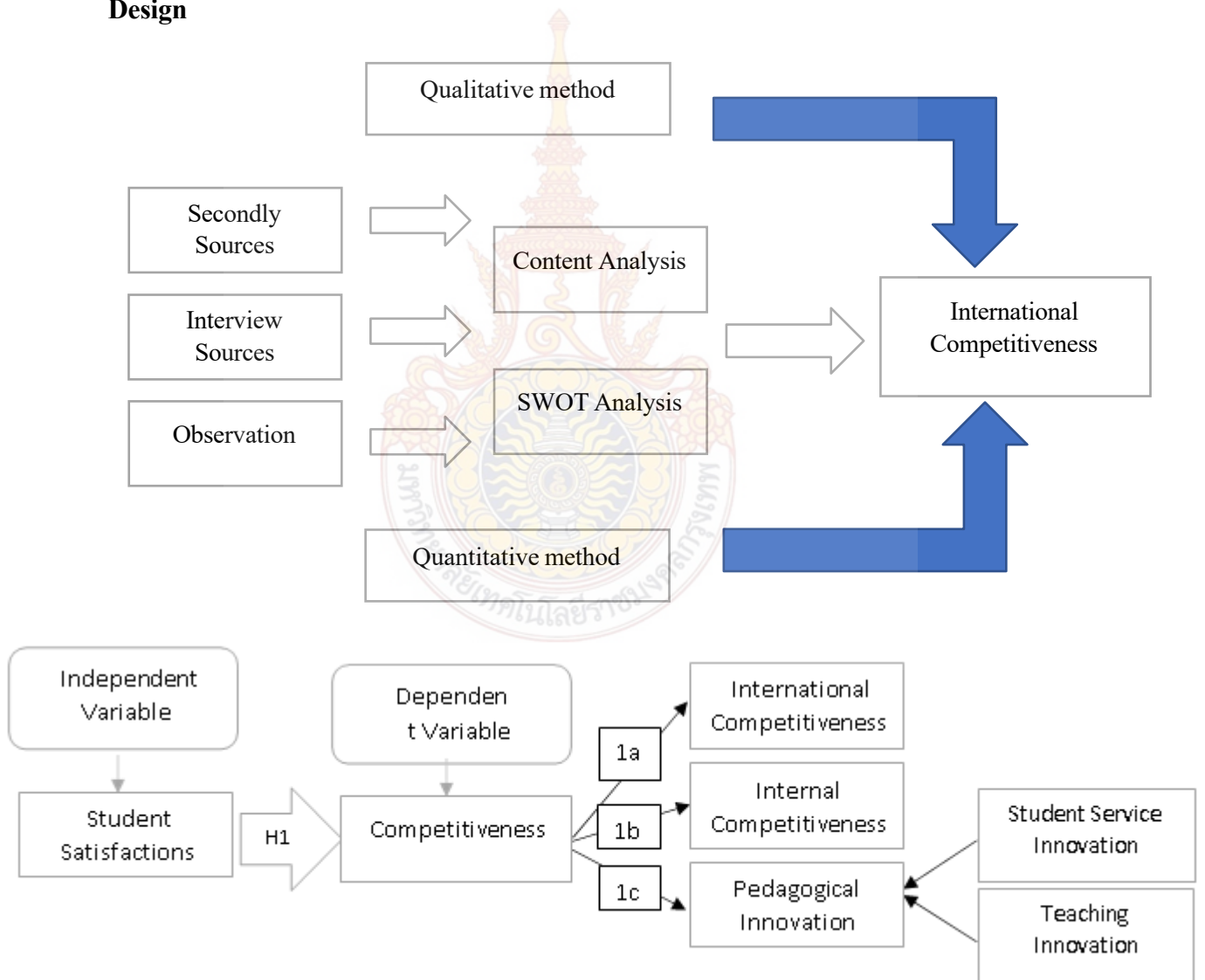


Figure 3.2 Mixed Method Research Framework

Step 1: Qualitative Interviews

- 1) Conduct semi-structured interviews with a subset of Chinese students to gather qualitative data.
- 2) Develop an interview guide with open-ended questions that explore participants' experiences, opinions, and suggestions regarding the four factors.
- 3) Use probing techniques to elicit detailed responses and encourage participants to provide precise descriptions.
- 4) Conduct the interviews in a comfortable and confidential environment, allowing participants to express their thoughts and experiences freely.

Step 2: Quantitative Questionnaire Survey

- 1) Design a structured questionnaire to collect quantitative data from Chinese students at the three RMUTs.
- 2) The questionnaire should include items related to the four factors one mentioned: admission, curriculum design, tuition, miscellaneous fees, living expenses, and student services.
- 3) Use a Likert scale or closed-ended questions to measure students' perceptions, satisfaction levels, or experiences related to each factor.
- 4) Administer the questionnaire to a representative sample of Chinese students at the three universities, ensuring an adequate response rate.

Step 3: Data Analysis

- 1) Quantitative Analysis: Analyze the quantitative data from the questionnaire survey using statistical methods.
- 2) Calculate descriptive statistics (e.g., means, frequencies) to summarize participants' responses and perceptions for each factor.
- 3) Structural Equation Modelling Analysis.
- 4) Qualitative Analysis: Analyze the qualitative data from the interviews using thematic analysis or another appropriate method.
- 5) Transcribe and code the interview recordings or transcripts to identify recurring themes or patterns.
- 6) Categorize and analyze the data to extract critical insights about the four

factors.

7) Use quotes or excerpts from the interviews to support and illustrate the identified themes.

Step 4: Integration of Findings

1) Compare and contrast the findings from the quantitative and qualitative analyses.

2) Look for convergence or divergence of results to understand the research topic better.

3) Interpret the findings holistically, integrating the quantitative and qualitative results to provide a comprehensive view of the research questions.

Step 5: Discussion and Conclusion

1) Summarize the key findings from both the quantitative and qualitative analyses.

2) Discuss the findings' implications, considering each method's strengths and limitations.

3) Provide recommendations based on the results to address any identified issues or areas for improvement in the four factors.

4) Conclude the study by emphasizing the value of using a mixed methods approach and suggesting areas for future research.

3.2 Research Population and Samples

3.2.1 Qualitative Research

This study's research population is Chinese students currently studying at three out of the nine Rajamangala University of Technology (RMUT) campuses in Thailand. The total number of Chinese students at the three selected RMUT campuses is more than 1,889, and these students are the primary focus of the study.

For the qualitative study in this research, we selected 25 students/teachers/managers from the three RMUT universities to be interviewed.

The researcher identified relevant characteristics and interviewed Chinese students from different academic disciplines, varying years of study, or those with

different experiences with the four factors (admission, curriculum design, tuition, miscellaneous fees and living expenses, and student services). The researcher also included teachers, managers, and parents with insights or involvement in the educational process.

Develop a sampling framework that outlines identified characteristics. This framework guides the sampling process and ensures that it includes diverse participants.

| | | | |
|--------------|----------|----------|----------|
| Participants | Students | Lecturer | Managers |
| Number | 10 | 5 | 5 |

| | | |
|-----------------------|---------------|--------------|
| Students Participants | Undergraduate | Postgraduate |
| Number | 5 | 5 |

In qualitative research, the instrument refers to the tool or guide used to collect data during interviews or focus group discussions. The device helps structure the data collection process and ensures consistency in the topics covered across participants.

An interview guide is a structured set of open-ended questions and prompts designed to guide the interviewer during individual interviews. It serves as a roadmap to explore the research topic while allowing flexibility for participants to express their thoughts and experiences. The interview guide typically includes introductory questions, main research questions, probes for clarification or elaboration, and closing questions. Ensuring the questions are clear, concise, and relevant to the research objectives. The guide should also allow participants to introduce additional topics or issues they find important.

3.2.2 Quantitative Research

This study's research population is Chinese students currently studying at three out of the nine Rajamangala University of Technology (RMUT) campuses in Thailand. The total number of Chinese students at the three selected RMUT campuses is more than 1,889, and these students are the primary focus of the study.

The researcher randomly selected a subset of Chinese students from the selected RMUT campuses and out-of-campus (students who have graduated) to participate in the study. The researcher divided the Chinese student population into strata

based on specific characteristics (study level and graduation) and randomly selected participants from each stratum. This approach can provide a more representative sample and allow for more precise comparisons between groups.

$$\text{Formula: Yamane's formula: } n = N/(1+N(e)^2)$$

Table 3.1 The Actual Number of Undergraduate, Postgraduate, and Graduates of all selected RMUTs

| Questionnaire Distribution | Undergraduate (Studying)* | Postgraduate (Studying) * | Graduated* | Total |
|----------------------------|---------------------------|---------------------------|------------|-------|
| Number of Students | 863 | 603 | 423 | 1889 |
| Number of Samples | 273 | 240 | 205 | 718 |

Undergraduate (N)= 863/ (1+863* (0.05)²) Postgraduate (N)= 603/ (1+603* (0.05)²)
 Graduated (N) =423/ (1+423* (0.05)²)

Source: From 3 RMUTs ASCAR (Academic Support Center and Registration Bureau)

Convenience and random sampling involve selecting participants based on their accessibility and availability. Since the researcher mentioned that the survey is for three specific RMUTs, Chinese students who are easily accessible within those campuses were approached.

Within the convenience sampling framework, stratified sampling was applied to ensure representation from different groups within the population. Stratified sampling involves dividing the population into relevant subgroups or strata and randomly selecting participants from each stratum. In this case, stratifying the Chinese student population was considered based on Undergraduate (Studying) and Postgraduate (Studying) Graduates. Doing so ensures that the survey captures diverse perspectives and experiences among Chinese students.

3.3 Data Collection

3.3.1 Qualitative Research

Conducted one-on-one interviews with participants to explore their perspectives, experiences, and opinions on the research topic. Use open-ended questions and probes to encourage participants to elaborate on their thoughts. Audio or video recordings were made with the participant's consent for accurate transcription and analysis.

Employed a case study approach to deeply investigate specific individuals, groups, organizations, or situations. To develop a holistic understanding of the research phenomenon, case studies involve multiple data collection methods, such as interviews, observations, and document analysis.

3.3.2 Quantitative Research

Developed a well-structured questionnaire that aligns with the research objectives and captures the relevant information related to the four factors of interest: admission, curriculum design, tuition, miscellaneous fees and living expenses, and student services. Ensured that the questionnaire included clear and concise questions, appropriate response options (such as Likert scales, multiple-choice, or open-ended), and demographic questions for data analysis.

Before data collection, the researcher ensured that ethical approvals from the researcher institution or relevant research ethics committees had been obtained. The questionnaire included a statement informing participants about the purpose of the research, the voluntary nature of participation, and the confidentiality of their responses. Assured participants that their personal information was protected and that the data were used only for research purposes.

Administered the questionnaire to the selected participants. Depending on the researcher's research design and participants' preferences, the researcher conducted the survey online using survey platforms or distributed paper-based questionnaires to be completed manually. Ensured that participants had enough time to complete the questionnaire and clarify questions. Provided clear instructions on how to submit the questionnaire or return the completed paper-based forms.

3.4 Research Instrument

3.4.1 Qualitative Research

In qualitative research, the instrument refers to the tool or guide used to collect data during interviews or focus group discussions. The device helps structure the data collection process and ensures consistency in the topics covered across participants.

An interview guide is a structured set of open-ended questions and prompts designed to guide the interviewer during individual interviews. It serves as a roadmap to explore the research topic while allowing flexibility for participants to express their thoughts and experiences. The interview guide typically includes introductory questions, main research questions, probes for clarification or elaboration, and closing questions. Ensuring the questions are clear, concise, and relevant to the research objectives. The guide should also allow participants to introduce additional topics or issues they find important.

3.4.2 Quantitative Research

The primary instrument of this research is a questionnaire survey to collect quantitative data from Chinese students at the selected RMUT campuses. The survey investigated four factors: admission, curriculum design, tuition, miscellaneous fees and living expenses, and student services. The questionnaire included closed-ended questions, such as multiple-choice questions, rating scales, Likert scales, and some open-ended questions to allow for additional comments or feedback. The questionnaire is likely designed to be administered in a standardized format to ensure consistency and comparability of responses and in the form of an online collection. Google Forms/WJX is a free online survey tool for creating and distributing questionnaires. The researcher completed a Google Form with the survey questions and distributed it to the Chinese students at the selected RMUT campuses. The responses collected in Google /WJX Forms were exported to a spreadsheet format and imported into SPSS for analysis.

SPSS is a statistical software package used for data analysis in social science research. After collecting the survey data, the researcher used SPSS to input, clean, and analyze it. SPSS was used to generate descriptive statistics such as mean, median, and standard deviation and to conduct inferential statistics such as t-tests and ANOVA. SPSS

can also create graphs and charts to visualize the survey data.

3.5 Content Validity and Reliability

Content validity refers to the extent to which the survey questions measure the intended construct or variable. In this research, the survey questions were designed to investigate four factors related to the Chinese students' experience at the selected RMUT campuses: Admission, Curriculum Design, Tuition and Living Expenses, and Student Services. These factors were identified through a literature review and input from experts in the field. The survey questions were then designed to assess these factors comprehensively and in detail. As such, the survey questions have good content validity for the intended purpose.

Reliability refers to the consistency or stability of the survey results over time and across different respondents. To establish the reliability of the survey instrument, the researcher used a test-retest method or internal consistency measures such as Cronbach's alpha.

3.5.1 IOC for Questionnaire

In the context of questionnaires, "IOC" typically stands for "Index of Coincidence." The Index of Coincidence is a statistical measure used to assess the likelihood that two elements selected randomly from a dataset are identical. In the context of questionnaires or surveys, it measures the similarity or agreement between the responses of two individuals or groups.

To calculate the Index of Coincidence for a questionnaire, the study:

1. Assigned numeric values to the responses (e.g., 1 for "strongly disagree," 2 for "disagree," 3 for "neutral," 4 for "agree," and 5 for "strongly agree").
2. Compare the responses for each question between two individuals or groups.
3. Calculated the proportion of times the responses match (i.e., the number of matching reactions divided by the total number of answers).
4. Repeated this process for each question in the questionnaire.
5. Finally, the individual question coincidence values were averaged to get

an overall Index of Coincidence for the questionnaire.

6. The Index of Coincidence can help researchers or survey designers understand the level of agreement or disagreement between different groups of respondents and identify areas of consensus or divergence.

3.5.2 Cronbach's Alpha

Cronbach's Alpha, also known as coefficient alpha or internal consistency reliability, is a statistical measure used to assess the reliability or consistency of a psychometric instrument, such as a questionnaire or survey. It is widely used in various fields, including psychology, education, and social sciences, to evaluate the internal consistency of items that measure the same construct or concept.

Cronbach's Alpha quantifies the extent to which the items in the instrument are correlated with each other. It ranges from 0 to 1, with higher values indicating greater internal consistency or reliability. The formula to calculate Cronbach's Alpha is:

$$\alpha = \frac{N * \bar{c}}{\bar{v} + (N - 1) * \bar{c}}$$

Where:

- N = number of items
- \bar{c} = mean covariance between items.
- \bar{v} = mean item variance.

A higher Cronbach's Alpha indicates that the questionnaire's items are more consistent, meaning that they are effectively measuring the same underlying construct. Typically, a value above 0.7 is considered acceptable for research purposes, though the acceptable threshold may vary depending on the context and field of study.

The researcher used Cronbach's Alpha during the instrument development phase to ensure that their survey or questionnaire questions were reliable and internally consistent. If Cronbach's Alpha is low, it may suggest that some items are not contributing to the overall reliability of the instrument and may need to be revised or removed.

3.6 Data Analysis

3.6.1 Descriptive Statistics

Qualitative data analysis can be performed using thematic or content analysis methods. This is followed by a content analysis and a SWOT analysis to conclude.

3.6.2 Inferential Statistics

The descriptive statistics in this research include measures of central tendency and variability for each of the four factors investigated in the survey and the overall satisfaction of Chinese students studying at the selected RMUT campuses. The researcher calculates the mean, median, and mode for each factor, as well as the standard deviation and range, to assess the variability of responses. The researcher uses Correlation Analysis, Regression Analysis, Differences Analysis, Confirmatory Factor Analysis (CFA) and Structural Equation Model. Descriptive statistics can provide a general overview of the survey results and help identify any patterns or trends in the data. It can also help the researcher better understand Chinese students' opinions and perceptions regarding the admission process, curriculum design, tuition and expenses, and student services at the selected RMUT campuses. The CFA utilized the composite reliability (CR) and average variance extracted (AVE) to assess the convergent validity of each variable dimension. The Structural Equation Model will be conducted using linear structural relations (LISREL) to test the established hypotheses. Moreover, the model parameters were estimated using the maximum likelihood (MLE) method.

CHAPTER IV

ANALYSIS RESULT

4.1 Descriptive Statistics

This study adopts open interviews and semi-open interviews. An available interview means researchers encourage interviewees to express their opinions in their language without designing fixed interview questions. This way aims to grasp the contents that interviewees think are important, their views on this issue, their explanations of meanings, and the concepts and expressions used. Therefore, interviewers only play an auxiliary role in the open interview process. On the other hand, a semi-open interview means that researchers have designed a rough outline in advance according to the research questions (as a hint) to interview the interviewees orally. Researchers can control the interview structure in semi-open discussions but let the interviewees actively participate. In addition, in the qualitative research, comparative analysis is used to reveal the beneficial experience of the development of higher education institutions in Thailand objectively and systematically by comparing the indirect relationship among students, teachers, and HEI administrators around the competitiveness of higher education institutions in Thailand, to play a role of reference for the internationalization of Thai universities.

In addition, to have a more comprehensive understanding of the competitiveness of higher education colleges in Thailand from the satisfaction perspective and to realize that the competitiveness analysis has sufficient data support, this study has divided competitiveness into three dimensions. The main manifestations of the dimension division are as follows: First, investigate the international competitiveness and explore the cognition of different groups of people on the global competitiveness of universities, starting from the three groups of students, teachers, and administrators, mainly involving university reputation, international rankings, international project cooperation. Secondly, the internal influence of university competitiveness is discussed, primarily involving internal discipline cooperation and competition and cultivating

excellent teachers, staff, and students. Thirdly, the development of technological innovation competitiveness of Thai universities is deeply explored, mainly involving curriculum innovation, student service innovation, and teaching methods innovation. Its goal is to interview students' satisfaction with the competitiveness of Thai universities, which mainly involves investigating the relationship between student satisfaction and university competitiveness, the factors influencing student satisfaction, and the specific performance of the influence. Exploring students' satisfaction can positively promote the competitiveness of Thailand International College of Higher Education.

Guided by the principle of interpretive phenomenological analysis (IPA), this study encodes the interview data and continuously links, compares, sorts, and classifies the topics presented by the data. At the same time, combined with the current situation of Thailand's significant development and the interview results of students, teachers, and administrators, the data is finally obtained, and the international competitiveness of Thai universities from the perspective of student satisfaction is finally refined. Reliability and validity are essential evaluation factors of scientific empirical research, which are related to the quality of the research process and the persuasiveness of research results. In qualitative research, reliability refers to the dependability and trustworthiness of the study, while validity refers to the transferability of the research results (Lincoln & Guba, 1985). Unlike testing reliability and validity through statistical techniques in quantitative research, the reliability and validity of qualitative research mainly come from the authenticity of research content, objectivity, and accuracy of the description. According to Tracy's (2013) suggestion to qualitative researchers and based on explaining the research ideas of phenomenological analysis, this study adopts the following methods to ensure its authenticity and effectiveness to the greatest extent.

4.1.1 Qualitative Analysis of International Competitiveness of Higher Education Colleges in Thailand

4.1.1.1 Student Level

By sorting out the interview contents, we can know from the relationship between student satisfaction and the international competitiveness of Thailand Higher Education Institute that the pleasure of students at HEI can enhance the

international competitiveness of Thailand's higher education, which can be mainly reflected in the following aspects: First, students who are highly satisfied with the HEI will spontaneously and actively promote their HEIs, and at the same time, they are willing to recommend their HEIs to their relatives and friends. Under such an acquaintance introduction mode, Thailand Higher Education Institute will gain more reliable and sustainable students. The guarantee of the number of students positively impacts the HEI infrastructure construction, the improvement of teaching quality, and the accumulation of HEI resources. This is consistent with hypothesis H1 in quantitative research. Second, the probability of individual donations to highly satisfied alumni with the HEI will increase significantly, which can provide financial support for HEI construction. Third, students who are highly satisfied with the HEI have a higher sense of identity with the HEI. Specifically, these students will actively maintain the external image of the HEI, and at the same time, they will have a more active learning enthusiasm. The high enthusiasm for learning can encourage students to study hard and improve their professional, practical, and communication abilities in an all-round way. This kind of student is more competitive in the job market, which enhances the international competitiveness of higher education colleges in Thailand.

我相信一个满意的学生群体绝对能够积极地影响学院的声誉和排名。学生们在学

校能感到满意和快乐，那么他们就更有可能是向外界传递正面的信息，这一定会增加学校的吸引力。另外，学生满意度还与毕业后的成功有关，当更多的学生因为在校期间所获得的良好教育和经验而取得成功，这自然也会为学校带来更好的声誉。

(Translation) A satisfied student body can positively influence a college's reputation and ranking. Students can feel comfortable and happy at HEI, and they are more likely to send a positive message to the outside world, which will increase the attractiveness of the HEI. In addition, student satisfaction is also linked to success

after graduation, and more students succeed because of the excellent education and experience they receive. At the same time, at HEI, this naturally leads to a better reputation for the college.

学生的口碑和评价可以迅速传播，从而影响潜在学生和家長对学校的选择。而且，高的学生满意度通常意味着学生在学业上的表现更好，这也会直接提高学校在各种排名中的位置。不仅如此，满意的学生更有可能在毕业后为学校捐款或提供其他形式的支持，从而进一步增强学校的竞争力。

(Translation) Student word-of-mouth and evaluations can spread quickly, thus influencing the choice of HEIs by potential students and parents. Moreover, high student satisfaction usually means that students perform better academically, directly improving a HEI's position in various rankings. Not only that, but satisfied students are more likely to donate to the HEI or provide other support after graduation, further enhancing the HE's competitiveness.

高满意度也可以促使校方不断改进教育质量和学校环境，从而进一步提高竞争力。

(Translation) A high level of satisfaction can also lead to continuous improvement in the quality of education and the HEI environment, thus further enhancing competitiveness.

满意的学生也更有可能在毕业后为学校做出贡献，无论是经济上还是名誉上。

(Translation) Satisfied students are also more likely to contribute to the HEI after graduation, both financially and in terms of reputation.

There is a close relationship between students' satisfaction and the international competitiveness of Thailand Higher Education Institute. When student satisfaction increases, Thailand's Higher Education Institute will have higher international competitiveness. At the same time, international competitiveness can also

achieve sustained and benign enhancement. This study further investigates the factors influencing students' satisfaction based on this result. Through the interview text, it is found that terms such as teaching quality, teacher-student relationship, college activities, infrastructure, tuition, curriculum, HEI atmosphere, and academic resources are mentioned more by the respondents.

我对这所学校的整体学习体验非常满意。进入研究生阶段，我发现这里的学术环

境更为浓厚，师资力量也相当雄厚。与本科时期相比，现在的我有更多的机会与教授进行深入的交流，也有更多的机会参与各种研究项目。学校的实验室和设施也给了我很大的帮助，使我能够更好地进行研究和实验。

(Translation) I was delighted with the overall learning experience at this HEI. As I move into graduate HEI, the academic environment will be much more robust, and the faculty will be quite strong. Compared to my undergraduate years, I now have more opportunities to have in-depth conversations with professors and to participate in various research projects. The labs and facilities of the university have also helped me a lot in conducting better research and experiments.

我认为学校的一些特色服务和项目极大地增加了学生满意度。例如，学校为我们提供了广泛的学术指导和职业规划服务，帮助我们为未来做好准备。

(Translation) Some of the HEI's unique services and programs have significantly increased student satisfaction. For example, the HEI offers various academic advising and career planning services to help us prepare for the future.

学生的满意度是学校教育质量的直接反映。我们的意见和反馈是学校不断改进的重要依据。而且，我认为学生的满意度还与学校的声誉、招生、和资金筹集等方面息

息相关。我还记得在选大学的时候，我就特意查看了一些学长学姐的评论和评价，这对我的决策产生了很大影响。

(Translation) Student satisfaction directly reflects the quality of education in the HEI. Our opinions and feedback are essential for the HEI's continuous improvement. Moreover, student satisfaction is also closely related to the HEI's reputation, enrolment, and fundraising. I still remember that when choosing a university, I made it a point to check out some of my seniors' comments and evaluations, which significantly impacted my decision.

我觉得教育质量、师资力量、实践机会、和学生活动是最为关键的因素。老师的教学质量和方法对学生的满意度有直接的影响。同时，学校为学生提供的实践和研究机会也非常重要。

(Translation) I think the quality of education, teachers, practical opportunities, and student activities are the most crucial factors. Teachers' quality and methods of teaching have a direct impact on student satisfaction. At the same time, the practical and research opportunities provided by the HEI for students are also significant.

Through interviews with undergraduates and postgraduates, we can see that many factors affect students' international competitiveness in Thailand Higher Education College, among which the most mentioned are HEI atmosphere, curriculum and resources, hardware infrastructure, and teaching quality. This study concludes that students' satisfaction is closely related to the international competitiveness of higher education colleges in Thailand. Among them, the rationality, diversity, and pertinence of curriculum will have a more critical impact on international competitiveness. This conclusion echoes hypothesis H4 and further proves the correctness of hypotheses H4 and H7 through qualitative.

4.1.1.2 Teacher Level

Views of teachers on how to enhance the international competitiveness

of Thai Higher Education Institute. In the interview on teachers' international competitiveness, we know that curriculum design, classroom communication, and after-class feedback have been mentioned many times. Specifically, first, the curriculum design can enhance the international competitiveness of Thailand Higher Education College. The main path of action is when teachers attach importance to curriculum design, such as aiming at students' different personality characteristics and professional foundations. By innovating teaching methods, teaching content, and teaching processes, students with practical, solid abilities are trained to enhance the employment ability of the HEI. Second, classroom communication is an essential factor in strengthening international competitiveness. In studying international competitiveness from the perspective of student satisfaction, we focus on the influence of different factors on international competitiveness, especially on soft power, such as classroom atmosphere, teacher-student relationship, and academic atmosphere. Promoting these soothing powers can continuously enhance students' sense of belonging, and they are also willing to recommend their universities to others, thus forming a good HEI reputation. Third, curriculum feedback can enhance international competitiveness. After teaching the course, teachers ask students for their views on the course content, teaching methods, and teaching materials and innovate and optimize the course with students' needs as the center. After many iterations, a targeted and distinctive high-quality course is formed, thus improving students' professional ability.

I noticed that those programmers with high student satisfaction had more students taking them and had a good reputation among students.

From my experience, improving student satisfaction does lead to better academic outcomes and retention rates. However, competitiveness is based on more than just student satisfaction. Academic reputation, research opportunities, and campus facilities are all determining factors.

In my career, HEIs or programmers with high student satisfaction levels are the most popular and competitive.

Student satisfaction reflects students' evaluation of the quality of education and their overall experience in HEI, including the design of the programs,

teaching methods, and HEI facilities.

Satisfied students tend to be more engaged and perform better academically. In addition, they are more likely to recommend the HEI to other potential students, thereby enhancing the HEI's reputation.

In addition to essential courses, the academic reputation of the HEI, international cooperation projects, and international teachers can reflect the international competitiveness of Thailand's Higher Education.

Our HEI has implemented various programs and activities to attract and support international students and staff.

The international faculty and staff have reinvigorated the HEI's international status.

I have had the privilege of being involved in several research collaborations and academic projects with international partners.

Our professors and scholars are often invited to speak at international academic conferences, which has enhanced our visibility in the global academic community.

From the analysis of the interview data at the above teacher level, we can see that without excellent teachers, there will be no good teaching quality, and no exceptional talents can be cultivated. Without extraordinary talent, there will be no good reputation; without a good reputation, there will be no sufficient students. With enough students, the college will develop well. With good development, the college will attract high-quality teachers and avoid falling into a vicious circle. Therefore, high-quality teachers are the key to the development of the college, and high-quality teachers are the prerequisite for developing high-quality courses. This conclusion is consistent with the quantitative hypotheses H4, H5, and H6.

4.1.1.3 Management Level

Many strategic measures have been taken at the HEI level to enhance the competitiveness of higher education in Thailand. For example, some professional service organizations can be set up to formulate and implement targeted and characteristic services according to students' characteristics. Curriculum innovation can significantly

increase the international competitiveness of higher education colleges in Thailand.

We have gradually developed and implemented several strategies.

Monitoring indicators such as the employment rate of graduates, salary levels, job levels, and industry distribution allows for assessing the competitiveness of university graduates in the job market.

If students are satisfied and supported at the university, they are likelier to remain and complete their studies. If the university has a good reputation, students will also become ambassadors for it and recommend it to their friends. This positive word-of-mouth can help attract more students to apply for admission and increase the institution's visibility and reputation.

We usually conduct student satisfaction surveys every semester or academic year, focusing on course content, teaching methods, campus facilities, and other educational or life services.

When measuring the degree of satisfaction, the degree of satisfaction in courses, teachers, learning resources, and support services accounts for a large proportion, which shows that the corresponding measures taken by Thailand Higher Education College in these aspects will significantly increase the international competitiveness, which will also assume that the views discussed in H1, H4, and H10 are consistent.

Conduct regular student satisfaction surveys and analyze the results. This can include assessing student satisfaction with courses, teachers, learning resources, and support services.

We have developed a clear internationalization strategy to attract as many students and teachers as possible, including clear objectives, action plans, and resource allocation.

To sum up, from the perspective of student satisfaction, the international competitiveness of Thailand Higher Education College is studied, and Thailand Higher Education College still regards students as an essential criterion for its development. In the study of students' satisfaction index of competitiveness, it is found that it is necessary to mention more courses, teachers, and the existing resources of the HEI, which significantly influences students' satisfaction.

4.1.2 Qualitative Analysis of Internal Competitiveness of Higher Education Colleges in Thailand

Teachers are the core strength of colleges and universities and the organizers and implementers of academic activities. Without teachers, there would be no universities. It is an essential field of higher education research to manage and encourage teachers in colleges and universities to improve their abilities. To enhance the quality of personnel training, teachers' knowledge creation ability (scientific research ability), knowledge imparting ability (teaching ability), and knowledge application ability should be integrated and unified at first. Secondly, there are different types of institutions of higher learning, such as research universities, teaching and research universities, teaching universities, and higher vocational colleges. Other kinds of HEIs should have different standards, levels, and objectives of personnel training because of international students' levels and needs, which determines that teachers' ability structure is different. Teachers in research universities should focus on knowledge creation ability and better serve the cultivation of students' innovative ability; Teachers in teaching research universities and teaching universities should have a balanced development ability structure to enhance their ability to cultivate compound talents; Teachers in higher vocational colleges should focus on knowledge application ability and improve the ability to develop applied skills facing the grassroots and the front line of production. Thirdly, in transforming the task of cultivating talents in universities from professional education focusing on imparting knowledge to comprehensive quality training characterized by wisdom, ability, and personality, higher requirements are put forward for teachers' ability to teach and educate people. A qualified teacher should not only create and impart knowledge and cultivate students' skills but also shape students' personalities because students' sound characteristics ensure their knowledge and ability to develop in serving society rather than endangering the community.

Internal competitiveness may encourage staff to continuously improve their educational standards and teaching methods continuously, enhancing the HEI's reputation.

Having international faculty and staff adds to the college's international

reach. Not only do they have unique educational experiences, but they also bring diverse cultural understandings that open more academic avenues for students.

In addition, interdisciplinary cooperation and competition can enhance the internal competitiveness of higher education colleges in Thailand. Scientific research can improve the quality and benefit of education and teaching to serve society. Popularizing scientific research achievements can make academic human resources in colleges and universities feel gratified that their labor achievements have been recognized by the community, thus stimulating their motivation for scientific research. Therefore, HEIs should do an excellent job promoting scientific research achievements of academic human resources in colleges and universities. First, it should be promoted in the HEI, and the exchange meeting of scientific research papers of teaching and research groups and school-level topic papers should be carried out to promote the transformation of teaching and research reform of academic human resources in colleges and universities to scientific research results. Editing and publishing school-level academic essays will make the scientific research achievements of educational human resources in colleges and universities widely spread and exchanged among academic groups. Secondly, the promotion outside the HEI does an excellent job in recommending and publishing academic human resources research papers in colleges and universities, and at the same time, publicizing the scientific research achievements of educated human resources in our HEI to make the scientific research achievements of academic human resources in colleges and universities widely recognized by the society and serve the community to stimulate their scientific research passion better.

To encourage such interdisciplinary exchanges, the university has set up several research centers, which usually cover several disciplines, enabling faculty members and students to gather on these platforms to explore and study interdisciplinary topics together.

The quality of teaching and training affects the development level of the HEI, which primarily ensures its healthy development, and it is essential to cultivate teachers with potential and ability. It is the primary development trend of colleges and universities to provide high-level education to create the best conditions for students' learning and

development with the aim of students' needs. In this case, the quality of education can be regarded as a comprehensive index, which covers the whole stage of students' personality formation, the conditions, and achievements of the teaching and training process, and even serves as the standard of the effectiveness of educational activities in educational institutions, so that the actual achievements meet the prescribed requirements, social and personal expectations. At the same time, meeting the needs of business owners has become the most crucial task of vocational education institutions. In this case, improving education quality has been regarded as solving every educational university's practical problem.

However, higher internal competition does not mean colleges and universities have higher competitiveness. Internal competition should grasp a reasonable range in the actual management of faculty and students, that is, to capture the appropriate intensity. Internal competition has a two-sided impact on faculty retention and recruitment. Positively, moderate internal competition can motivate faculty members to pursue excellence and promote advancement in teaching and research, which also gives HEIs an advantage in attracting talent during recruitment. However, excessive competition may lead to undue work stress, which affects the satisfaction and well-being of faculty and staff, thereby reducing their retention in the university. Maintaining a healthy internal competitive environment and ensuring staff support and development are key factors to consider when recruiting and retaining staff.

Excessive internal competition may lead to tensions among teachers, reducing their job satisfaction and, thus, their willingness to stay in the institution. If teachers feel they are in a "dog-eat-dog" environment, they may leave in search of a more cooperative and supportive working environment.

The HEI recognizes that excessive internal competition can hurt the health and well-being of students. To ensure a healthy learning environment, we have adopted various strategies.

Therefore, in enhancing the internal competitiveness of higher education in Thailand, managers need to improve universities' internal competitiveness as part of the decision-making of the HEI development strategy. It can mainly involve the following

aspects: First, consider fairness a prerequisite for all principles, policies, management systems, and development decisions. Employees should be rewarded and recognized promptly and reasonably to encourage and motivate their efforts and excellence. Emphasize the importance of cooperation and teamwork and the value of working together to achieve goals—Foster employee cooperation by organizing team projects, discussion groups, and collaborative activities. By taking several appropriate measures, organizations can promote a healthy and supportive culture of internal competition, enabling staff to work in an environment that encourages personal growth and collaboration while protecting the well-being of students. By making fair policies, creating an appropriate campus atmosphere, and adopting reasonable admission procedures, we can establish a good brand image to attract more students. This is also consistent with the assumption H2 in the previous article. Second, formulate a reasonable incentive policy. The essence of management lies in communication, which can realize "humanized" management. In the direction of colleges, how to give full play to the subjective initiative of teachers and students, turn passive management into active management, and turn passive treatment into active participation is a problem that should be actively studied and changed in the strategy of enhancing competitiveness of a higher education college in Thailand. A long-term communication mechanism can increase the initiative of teachers and students to participate in college management and improve their collective sense of honor to the college.

Many college management problems are caused mainly by poor communication. Establishing a suitable communication mechanism in the college can help teachers and students better participate in college management and serve students better. At the same time, formulating reasonable incentive policies for teachers' development needs can encourage teachers to actively implement curriculum optimization and upgrading. They are willing to carry out teaching and educational affairs in a positive state, thus enhancing the internal competitiveness of the HEI. The above conclusions are consistent with the above assumptions H5 and H11. Third, the support of financial resources is the material guarantee for the internal structure optimization of Thai universities. In addition to human and material resources for discipline

construction, constructing a competitive discipline system is inseparable from guaranteeing sufficient funds. There is a general contradiction between the development vision and the need for more resources in local high-level universities, especially in developing countries. In this situation, high-level universities should strengthen the integration of financial resources on campus to ensure timely and sufficient investment in disciplined construction funds.

On the other hand, local governments should support local high-level universities in building a discipline system with regional characteristics, emphasis, and selectivity. At the same time, students' living expenses, tuition, and miscellaneous fees are some of the essential sources of income for higher education colleges in Thailand; the more fees they charge, the more they can support more activities, mainly international exchange and student practice activities. Through these activities, the internal competitiveness of colleges and universities can be enhanced to a certain extent. This conclusion is consistent with the assumptions H7, H8, and H9 mentioned above.

To retain teachers and improve their salaries, local governments and education departments must ensure that the relevant policies are put into practice, that teachers' salaries are not lower or higher than those of local civil servants, that the living conditions of teachers at the grass-roots level are improved practically so that the majority of teachers can feel a sense of professional superiority.

Based on the feedback collected by the HEI, teachers and stakeholders are regularly provided with student satisfaction data and feedback, as well as opportunities to suggest improvements.

4.1.3 Qualitative Analysis of the Competitiveness of Technological Innovation in Higher Education Colleges in Thailand

The management of success comes from adaptation. Suppose colleges and universities want to be sustainable in development and show competitive advantages in international competition. In that case, they should meet the needs of economic and social development, constantly adjust the development factors, and innovate their strategies. Although the formation of international competitiveness needs long-term accumulation and has specific stability, with the changes in social development, scientific and

technological progress, industrial development, talent market, and the renewal of its resources and management, the international competitiveness of Thai higher education colleges must also be developmental. Suppose the HEI lacks the corresponding strategic resilience. In that case, adapting to the complex and ever-changing external environment will be challenging, unable to meet the ever-changing social needs, and quickly losing its original core advantages. Therefore, HEIs must upgrade their core competitiveness according to the trend of social and economic development and management development, based on their resource characteristics, and according to external social changes. In other words, after the HEI's international competitiveness is formed, it needs to keep pace with the times, innovate constantly, and develop, transform, and upgrade its core competitiveness to get rid of the life cycle of emergence, growth, maturity, and decline and keep the vitality of its core competitiveness forever.

From the interview on the level of technological innovation, we know that curriculum innovation, as an important influencing factor, can affect the international influence of Thailand's international colleges and universities. The specific performance is as follows:

课程创新对我来说是一种启发，它显著地提升了我的学习体验和学术成长。新颖

的课程设计鼓励了学生的主动学习和创新思维

I have worked with an interdisciplinary team to reshape the undergraduate curriculum by introducing real-life case studies of intercultural communication and teamwork. This has not only enriched the curriculum but has also improved students' practical skills.

Assessing programmer innovations is integral to improving student and stakeholder satisfaction.

A HEI that continually innovates its curriculum to meet the marketplace's needs will attract a broader range of students.

At the same time, student service can improve the technological innovation

ability of Thailand Higher Education Institute, which is consistent with the result of hypothesis H12.

For example, our dedicated International Students Office provides language training, cultural exchange activities, and life guidance for international students.

Student services, mainly academic support and mental health services, can significantly improve students' academic performance and retention.

On the level of teaching innovation, it is mainly reflected in the innovation of teaching methods, such as using modern equipment to enrich teaching processes. At the same time, to encourage teachers' enthusiasm, it is necessary to provide corresponding resource support. Seminars and feedback sessions are organized regularly, inviting student representatives and representatives from relevant departments to share their views and experiences on student services. This approach can facilitate direct dialogue between students, university management, and staff and provide insight into students' expectations and needs for student services. Establish student feedback channels, such as student inquiry centers, suggestion boxes, or online platforms, to encourage students to provide feedback and suggestions. Encouraging innovation is not simply a slogan, but a need to provide rich resource support and incentive policies, and through perfect material guarantee and incentives, to continuously achieve a good situation of teachers and students' co-creation, to enhance the competitiveness of higher education colleges in Thailand, which is also consistent with the above assumptions H12 and H6.

HEIs actively support and encourage teachers to adopt innovative teaching methods in several ways.

They have set up a particular Teaching Innovation Fund for teachers to purchase new teaching equipment and teaching materials or conduct educational research projects.

We create programs encouraging students to participate in research projects and provide mentorship and resource support.

Based on the analysis of the above interview contents, we can find that the three significant sections of curriculum innovation, service innovation, and teaching innovation are essential to enhancing the technological competitiveness of colleges and

universities in Thailand. First of all, at the level of curriculum innovation, the purpose of adjusting students' curriculum is to cultivate students' intelligence and way of thinking through the study of core courses so that students can understand the ways and means of organizing, applying, and analyzing knowledge in practice, eliminate those courses that list phenomena, and develop those core courses that are conducive to cultivating students' ability to analyze and solve problems so that students can have strong ability to deal with the changing world. With the conductivity of curriculum as the medium, Thai universities will cultivate more outstanding students, thus increasing their international competitiveness, internal competitiveness, and technological innovation. Secondly, the level of service innovation, which is student-centered, is always the core criterion of university development. In the classroom, teachers first introduce specific knowledge backgrounds to guide students to be interested in what they have learned. Then, based on the examples in life, the critical points of classroom teaching are drawn out. In the teaching process, teachers highlight the key points and then guide students to learn the contents of textbooks by themselves. In addition, teachers will invite students to do self-teaching to cultivate their expressive ability. Students should not only understand themselves but also be able to make others understand. In the teaching process, teachers help students take pictures to record the teaching process, and other students can ask questions at any time to realize interaction. Finally, besides improving students' happiness in learning, life needs must also be met. Therefore, it is imperative to carry out various extracurricular activities, set up particular service institutions, and target international cross-cultural activities. Thirdly, in terms of innovation in teaching methods, students, teachers, and administrators all agree that innovation has an essential impact on technological innovation and enhancing competitiveness. The renewal and rational use of technical means will significantly improve the quality of teaching, thus enhancing students' enthusiasm for attending classes and their satisfaction with the HEI, thus enhancing the competitiveness of higher education colleges in Thailand.

4.1.4 SWOT Analysis

Dialectical materialism tells us that the development of things results from internal and external comprehensive effects. The analysis of the competitive environment

of local high-level universities is naturally inseparable from the analysis of their competitive situation. This section will further analyze the competitive situation of higher education institutions in Thailand by using the SWOT (Situation Analysis) theory, to analyze the competitive situation of higher education institutions in Thailand based on considering and weighing the external competitive environment and internal competitive resources to understand the competitive environment better, seize opportunities, meet challenges, overcome disadvantages, and gain advantages.

SWOT analysis was first put forward by Professor H. Wehrich of the University of San Francisco in the early 1980s. SWOT analysis is a strategic analysis method that systematically analyzes an enterprise's internal Strengths, Weaknesses, external Opportunities, and Threats according to its established internal conditions, analyzes all the factors in pairs to draw a series of corresponding conclusions, and finally determines where its core competitiveness lies. The SWOT analysis of colleges and universities aims to find the development direction and business strategy of their HEIs according to the opportunities and threats in the market by understanding their advantages and disadvantages to gain a favorable position in the competition.

4.1.4.1 Strength

4.1.4.1.1 Hardware Facilities

As an academic place where talents gather, a university has human resources to promote academic productivity and material resources to support academic production. The working environment and conditions are part of the university's material resources and are essential educational resources for university development. A good environment is a catalyst for people to make progress. The effective combination of human resources and material resources can improve the performance of academic human resources in colleges and universities, which has a great impetus to the growth and development of academic human resources competitiveness in colleges and universities. Working conditions include a scientific research environment, a teaching environment, and team building. Scientific research environments and conditions mainly involve facilities, guarantee funds, and scientific research projects. The more scientific research projects are won, the more abundant scientific research funds can be provided, and

abundant funds will create unique conditions for developing academic human resources in colleges and universities. The scientific research level and ability of academic human resources in colleges and universities are related to the number of scientific research projects. The scientific research level of academic human resources in colleges and universities is high, so it is easy to win scientific research projects. The scientific research level and research projects complement and enhance each other. More scientific research projects have improved the scientific research level of academic human resources in colleges and universities in completing scientific research tasks. With the advent of the information age, teaching methods and experimental equipment show a trend of modernization. This marvelous charm of modernization can improve classroom teaching efficiency and significantly impact the innovation of academic human resources and teaching modes in colleges and universities.

A perfect teacher training mechanism can improve teachers' comprehensive quality, broaden their horizons, and enhance their innovative consciousness. High-quality teachers can provide a guarantee for training high-quality graduates. On the premise of providing material guarantee for teaching staff, we should encourage all teachers to take part in further study, encourage teachers to participate in large-scale conferences or activities in various disciplines, encourage young teachers to continue their studies, encourage theoretical teachers to practice, encourage influential teachers to study abroad and encourage backbone teachers to visit HEIs in China, to improve teachers' knowledge level and scientific research level.

According to the texts, no matter whether students, teachers, or administrators, hardware facilities are mentioned most frequently. The primary hardware facilities of the campus, such as a library, practice place, campus-scale, and teacher-student ratio, are critical.

4.1.4.1.2 Software Facilities

Software facilities can be divided into material, institutional, and spiritual cultures. Material culture is the university's material form and the basis of its spiritual and institutional culture. It is widely permeated in material carriers such as teachers, students, disciplines, majors, courses, facilities, and characteristics. Institutional

culture permeates various personnel training systems, such as the evaluation system of personnel training quality, the Kauler system, and the student management system. Institutional culture guarantees the development of material and spiritual culture and is the central position of personnel training. Spiritual culture is the core of university culture, including critical spirit, free spirit, innovative spirit, scientific spirit, and humanistic spirit. Spiritual culture concentrates on a university's philosophy, school-running characteristics, and cultural taste.

Such as the Harvard spirit of "taking truth as your friend" and so on. University spirit is "the ideological essence accumulated by generations of teachers and students in a HEI in the continuous teaching and life practice, and it is the deep element of university culture, which reflects the essence and personality characteristics of a HEI." To run a university with its characteristics, it must focus on cultivating its university spirit. **University Spirit.** The civilization achievement of spiritual form with unique temperament formed in the existence and development of universities is the symbol of the times and concrete condensation of the scientific spirit, and it is the advanced form of civilization of the whole human society. Among the many components of academic ecology in colleges and universities, the cultural environment is an essential part. It is a hidden educational environment that can subtly enlighten students and stimulate their enthusiasm for academic human resources in colleges and universities. University spirit belongs to the mainstream culture in the cultural environment, and its essential characteristics are summarized as creative spirit, critical spirit, and social care spirit. The exertion of creative spirit is not only conducive to achieving the goal of academic innovation in academic ecology in colleges and universities but also shortening the period of updating excellent academic achievements. According to the advantage analysis of the characteristics of the interviewees, we can find that the pleasant campus atmosphere, harmonious academic atmosphere, and harmonious teacher-student relationship can significantly increase the competitiveness of Thailand's Higher Education College. Students with high evaluations also have higher recognition and loyalty to the HEI. They are willing to carry out brand promotion and recommend first-year applications, thus improving the admission, retention, and graduation rates of

Thailand Higher Education College.

4.1.4.2 Weakness

4.1.4.2.1 Resource Shortage

There are still some shortcomings in the development of universities themselves: limited resources to provide funds for strategic goals and tasks; Teachers' information technology ability is insufficient; The number of international joint degree programs is small; Insufficient funds for postgraduate research; The participation rate of international scholarship competition is low. In addition, in recent years, the total number of scientific papers published by Thai universities has had good global development, but the ranking still needs to be revised. The proportion of international scientific papers published by the Thai Higher Education Institute is increasing yearly. However, there is still a big gap between academic human resources published by Thai universities and world-renowned universities, which fully shows the vast gap between the academic human resources of Thai universities and the academic human resources of famous foreign universities in scientific research productivity. Judging from the overall situation of the three systems, Thai universities still need to improve compared with developed countries such as the United States, Britain, Japan, and France. However, the number and world ranking of papers indexed by the three systems has somewhat improved. This also reflects Thai universities' academic ability and level of academic human resources.

Secondly, regarding human resources, the foreign language level of the teaching staff of Thailand Higher Education College is low, and there needs to be more globally competitive talents. The existing professional teachers in Thailand's higher education system need to be more active in international exchanges and cooperation, and they have yet to form a professional team of international teachers. Foreign affairs personnel have yet to receive professional training and lack practical experience. There are many reasons for brain drain, but wage income is the main one. Attache' believes that "the salary of the academic profession is not comparable to that of the private sector, and the traditional academic lifestyle has deteriorated. It is difficult for academic circles to attract the best and most talented people. Most people are dissatisfied with their jobs

because their wages are too low, and they want to seek better jobs inside or outside the field of education. In recent years, teachers' salaries have been restored. However, this growth is not due to the return of knowledge contribution but to the large-scale expansion of enrollment in colleges and universities, which could be more sustainable. Increasing teachers' work pressure is undoubtedly the primary way to reduce the cost of running a school, and it is also challenging for colleges and universities to continuously raise teachers' salaries. Although teachers' salaries are at the upper-middle level in the social division of labor, they need more potential to maintain the upper- middle level compared with teachers in economically developed countries. From the perspective of international comparison, the salaries of Thai university teachers have no comparative advantage and even less competitive advantage.

Finally, regarding human resources, the foreign language level of the teaching staff of Thailand Higher Education College is low, and there needs to be more globally competitive talents. The existing professional teachers in Thailand's higher education system must be more active in international exchanges and cooperation. They have yet to form a professional team of international teachers, and foreign affairs personnel have yet to receive professional training and lack practical experience. There are many reasons for brain drain, but wage income is the main one. Attache' believes that "the salary of the academic profession is not comparable to that of the private sector, and the traditional academic lifestyle has deteriorated. It is difficult for academic circles to attract the best and most talented people. Most people are dissatisfied with their jobs because their wages are too low, and they want to seek better jobs inside or outside the field of education. In recent years, teachers' salaries have been restored. However, this growth is not due to the return of knowledge contribution but to the large-scale expansion of enrollment in colleges and universities, which could be more sustainable. Increasing teachers' work pressure is undoubtedly the primary way to reduce the cost of running a school, and it is also challenging for colleges and universities to continuously raise teachers' salaries. Although teachers' salaries are at the upper-middle level in the social division of labor, they lack the potential to maintain the upper-middle level, let alone compare with teachers in economically developed countries. From the perspective of

international comparison, the salaries of Thai university teachers have no comparative advantage and even less competitive advantage.

在获得导师指导方面。有时候，学生需要争取一位优秀导师的指导，但导师资源

有限。我曾经在争夺导师的指导机会时感到一定的压力，因为我知道有其他同学也在竞争。这种竞争可能会影响学生的研究方向和兴趣。

(Translation) In obtaining mentorship. Sometimes, students need to compete for guidance from a good mentor, but there are limited resources for mentors. I used to feel pressure in competing for mentorship opportunities because I knew other students were also competing. This competition may affect a student's research direction and interest.

Among the main reasons for the development dilemma discussed above, the shortage of resources is particularly prominent. The need for more resources will affect teachers' professional development and students' satisfaction with Thai universities. When students are given sufficient resources, it will affect their professional study and self-improvement. It will be very favorable for students who want to carry out spontaneous brand promotion and have good employment choices after graduation.

4.1.4.2.2 Inadequate Curriculum

The driving factors of university subject courses are mainly instrumental, and subject courses rarely acquire the same depth of knowledge as subject courses. Because subject knowledge is taught in different ways and depths in different background environments, in the study of discipline specialty, a concept in discipline knowledge may be fully discussed in the broader discipline background. However, the instrumental-oriented discipline curriculum is mainly based on a specific theme or problem. It is taught in the context of real problems, so the depth and extensibility of knowledge are significantly compressed. Therefore, the topics taught in cross-cultural courses may cover more diverse content, but the depth could be better than those taught based on disciplines. From this, it can be inferred that cross-cultural subject education is

based on subject knowledge, and the transfer of cross-cultural subject knowledge and concepts needs to be based on solid subject knowledge. The weak subject foundation may make cross-cultural subject education weak.

Therefore, how to lay a solid foundation of subject knowledge for students in the first stage is a problem to be solved in interdisciplinary education and an important measure to enhance the competitiveness of higher education colleges in Thailand. From the interview data, we can see that the investment in cross-cultural disciplines in colleges and universities ignores the cultivation of a solid discipline foundation to some extent. As mentioned above, through the interdisciplinary adjustment of academic organizational structure, many interdisciplinary organizational units have been produced in colleges and universities, and many interdisciplinary courses and majors have been set up accordingly. The flexible organizational framework has brought the disadvantages of insufficient training in specialized and in-depth subject knowledge while avoiding putting students in the organizational structure of a single discipline. Regarding students' majors, some interdisciplinary professional courses at Thailand Higher Education Institute need a solid discipline foundation. In the case of sustainable development, which is paramount in this study, the core course that students study in the primary stage is an interdisciplinary course with the theme of sustainable development. Teachers only teach the knowledge and concepts related to sustainable development's core themes or topics when teaching such courses or subjects. The study of knowledge in the disciplines or fields such as economics, biology, and engineering involved is limited to the situation created by interdisciplinary subjects, which quickly makes students need more understanding of the depth of the knowledge or concept and its relationship with other topics or topics. The framework of interdisciplinary organization does bring convenience to education in interdisciplinary courses, but it also marginalizes the essential position of subject education in interdisciplinary education.

For example, the Thai Higher Education Institute values cross-cultural and complex courses. Because it is often a characteristic course of cross-cultural teaching to a certain extent, it has both local elements and international characteristics, and the presence or absence of such courses directly reflects the "intimacy" between HEIs

and students. The course name, course objectives, teaching materials, and course contents of such courses all need to consider the characteristics of students comprehensively. Unfortunately, cross-cultural courses are the general trend in Thai universities. All colleges and universities have put forward such goals when actively bidding for cross-cultural courses, but no one cares when developing and setting specific courses. Alternatively, it cannot be incorporated into the curriculum construction as the primary core curriculum.

In addition, the curriculum needs to be further improved, as it lacks brand courses. With the development of the social economy and the gradual improvement of people's living standards, more and more students need to go abroad for further study. They need professional courses in science and technology, psychology, literature, and culture for university courses. Thai universities have few courses in these areas, which cannot meet the learning needs of current students. As an organization that plans to grow into an international university, it must have unique cultural characteristics and create unique brand courses.

4.1.4.2.3 The Synergistic Effect is not Significant “System”

The Synergistic Effect is not Significant. "System" refers to a relatively stable normative system restricting people's behavior in a particular order. The personnel system in colleges and universities refers to how to manage personnel in colleges and universities. A series of codes of conduct and working principles should be observed when using people to govern things and correctly handle the relationship between people and things. The rationality of the system can create a more flexible development model. In recent years, developed countries have tried their best to promote the inter-school flow of educated human resources in colleges and universities to improve the level of academic human resources in colleges and universities. This mobility is conducive to developing disciplines and improving the overall quality of academic human resources in colleges and universities. It has a positive significance for the increasingly reasonable teaching staff. There is a sharp contradiction between the requirement of talent flow and the closed personnel management system in colleges and universities under the condition of the market economy. The personnel management system of ordinary universities in Thailand still maintains a set of inherent models under

the planned economy, and there is no fundamental change. This talent management system has seriously affected the rational use of academic human resources in colleges and universities, putting some talents in some colleges and universities in a half-load working state or idle state. The reduction of talent' flow will inevitably lead to the loss of many academic exchange opportunities, which will hinder the passage of new ideas and ideas from the academic frontier into colleges and universities, which is also not conducive to academic innovation.

Seminars and feedback sessions are organized regularly, inviting student representatives and representatives from relevant departments to share their views and experiences on student services. This approach can facilitate direct dialogue between students, university management, and staff and provide insight into students' expectations and needs for student services.

Therefore, given the above Weakness, to improve the participation of faculty and staff and achieve a high degree of consistency between HEI goals and the quality of faculty and staff, colleges and universities should pay attention to the coordination between HEIs and faculty and staff. According to the theory of collaborative management, organizational management must first find out the order parameters that dominate each subsystem's behavior and lead the organization's overall operation. As far as colleges and universities are concerned, the psychology and behavior of faculty and staff are essential sequence parameters of the university management system, which can dominate the behavior of each subsystem and the overall operation process of colleges and universities. University administrators should pay attention to the overall coordination between people and HEIs in each university. It is necessary not only to guide the coordination between the individual needs of faculty and staff and the overall needs of the university but also to guide the coordination between the individual characteristics of faculty and the overall style and concept of the university. Only when the overall characteristics, including university culture, values, goals, and norms, penetrate the hearts of each faculty member and are reflected in the words and deeds of each faculty member can cooperation be possible.

4.1.4.3 Opportunity

4.1.4.3.1 International Higher Education is Booming

Starting from the law of the development of higher education itself, the scale of a country's higher education is permanently restricted by its economic development level, which becomes the supply function of the scale of higher education. The development of the economy and the continuous improvement of people's income levels are the critical premise and foundation for the continuous expansion of the national higher education scale. The investment of higher education funds has the highest correlation with the growth of higher education. The increase in higher education funds can stimulate growth, and the level of growth also restricts the investment of higher education funds to a certain extent. Therefore, the growth level of a country and per capita has an immeasurable impact on the development of national higher education and the international competitiveness of academic human resources in colleges and universities. The steady development of Thailand's economic aggregate further affirms Thailand's reform of the market economy and the outstanding performance of Thailand's improvement in economic strength. With such muscular strength, Thailand's rapid economic growth will also promote the expansion of the higher education scale, which is an influential factor for the competitiveness of academic human resources in Thai universities. However, at the same time, we should also see that although Thailand's annual total has developed to some extent, it is still far from the United States, which will widen the gap between Thailand and the other ASEN Countries in the scale of academic human resources in colleges and universities to some extent.

Secondly, the gradual deepening of the popularization of higher education has brought essential development opportunities for local universities, especially local high-level universities. Therefore, local high-level universities should combine their advantages and characteristics to seize the development opportunities and win the development.

4.1.4.3.2 Technical Support

The demand for applied and innovative talents with an objective external environmental background has surged in the ever-changing era of science and

technology. As an essential subject of knowledge innovation, universities, especially high-level universities, could develop first while building an innovative country. Therefore, high-level universities in Thailand should promote knowledge innovation, carry out innovative education, and further cultivate innovative talents in personnel training.

4.1.4.3.3 The Government, that is, Non-governmental Organizations, Provide Resource Support

In recent years, the Thai government and non-governmental organizations have further increased their financial support for university development research and education and set up special funds to support the development of interdisciplinary research and education. Some specialized institutions have set up related funding projects to support the development and innovative services of research and education in interdisciplinary fields.

In addition, some social organizations have also created opportunities to apply for funding for the development of interdisciplinary education through various forms. Every year, the Foundation allocates certain funds to support undergraduate education and promote the development of university education, including some interdisciplinary education. The funded projects are aimed at universities, higher education associations, and other relevant organizations nationwide. The financial support of the government and non-governmental organizations provides opportunities for developing competitive higher education colleges in Thailand and puts forward the urgent need for development. These financial supports from all sides show an increasing trend, which greatly supplements the financial resources of interdisciplinary education and creates good opportunities and conditions for enhancing competitiveness.

4.1.5 Threat

4.1.5.1 Excessive Internal Competition

In colleges and universities, administrative solid power inhibits academic power, destroys academic ecology, and affects the research and teaching environment. The lack of career development opportunities for teachers weakens teachers' ability to master and control advanced knowledge. The academic environment

cannot unite high-level scholars to engage in academic activities. Teachers should engage in teaching and scientific research, attract external funds, and provide consulting services. University teachers are under considerable pressure, and the primary conditions for academic work have deteriorated. Teachers' work pressure has generally increased from the government, society, market, and organization. The accountability of the government and society for HEIs makes it necessary for HEIs to improve the quality of personnel training. The expansion of higher education requires teachers to assume more teaching responsibilities. To gain more market share and social prestige in the competitive market and obtain more resources from the government, HEIs must improve their academic level. Teachers need more scientific research support from the government and the market and to engage in scientific research at a high level. The accountability and evaluation system for academic personnel in HEIs is constantly strengthened, and academic personnel bear the triple pressure of educating people and constantly improving teaching tasks and scientific research tasks, making university teaching one of the most stressful occupations in the social profession.

I once worked in a HEI where excessive internal competitiveness led to a tense and discordant working environment. Instead of sharing teaching experiences, teachers competed, which negatively affected the quality of education for students and, ultimately, the reputation of the HEI.

4.1.5.1.1 Technical Challenge

Regarding the institutional mechanism of universities, some innovative universities in Thailand have pushed their training programs to the road of industrialization. The advantages of this industrialized market operation mode have been truly reflected. Its most significant advantages are strong market competitiveness, industrialized development, large scale, flexibility, and maximum income. However, from the interview results, we can find that although the status of training has not been entirely placed in the marginalized area by the HEI, the function of training serving the society has not been paid enough attention by the HEI, which to a certain extent, has led to the rigid system and mechanism of training project management, low market competitiveness, insufficient market sensitivity, small workshop-style operation and

management mode, low enthusiasm of staff, and the training income is only earning money, which cannot be compared with these innovative achievements and the training projects in the reform pilot universities.

Technological challenges are the most common problem, especially when introducing new teaching tools or platforms; we must face the complexity of technology and the adaptation period.

Money and training resources may limit the implementation and development of curricular innovations.

4.1.5.1.2 Industry Reshuffle and the Challenge of International Recognition

With the popularization of higher education, the number of colleges and universities in Thailand has increased, intensifying competition among domestic universities regarding students, financial resources, teachers, and land occupation. At the same time, the internationalization trend of higher education forces local universities to meet the challenges of foreign competitors simultaneously, and the weakness of RMUT universities is more evident in this respect. Society, enterprises, and students have higher and higher requirements for teaching quality, scientific and technological achievements, and social service quality, making the competition more fierce.

Secondly, the lack of extensive cooperation with world-class universities could increase the overall level of cooperation. The international recognition of degrees awarded by Thai higher education colleges is challenging. For Thai universities, the degree of social recognition of graduates is crucial. The quality of higher education in Thailand is nominal. Due to the lack of long-term local academic staff, most have low international recognition and a lack of budgeting and resource allocation systems.

At the same time, it also faces the threat of substitutes. The threat of substitutes mainly refers to how the training client achieves the training purpose in other ways instead of cooperating with the training institutions in colleges and universities when there is training demand. This includes self-organized training by the training client,

self-study by students, and learning through online platforms. Suppose other training methods with less investment and higher returns develop rapidly. In that case, it will seize the training market share and significantly affect the development and market share of training programs in colleges and universities. The threat of this substitute is enormous.

4.2 Inferential Statistics

Table 4.1 Descriptive Statistics (n=718)

| Variable Name | Minimum | Maximum | Mean | Std | Skewness | Kurtosis |
|---------------|---------|---------|-------|-------|----------|------------|
| TI1 | 1 | 5 | 3.843 | 1.065 | -0.739 | - 0.131 |
| TI2 | 1 | 5 | 3.909 | 1.078 | -0.938 | 0.339 |
| TI3 | 1 | 5 | 3.776 | 1.089 | -0.799 | 0.057 |
| TI4 | 1 | 5 | 3.675 | 1.121 | -0.646 | - 0.269 |
| TI5 | 1 | 5 | 3.979 | 1.029 | -0.960 | 0.483 |
| TI6 | 1 | 5 | 3.942 | 1.053 | -0.953 | 0.423 |
| TI7 | 1 | 5 | 3.610 | 1.079 | -0.620 | - 0.206 |
| TI8 | 1 | 5 | 3.744 | 1.111 | -0.748 | - 0.035 |
| TI9 | 1 | 5 | 3.642 | 1.093 | -0.668 | - 0.145 |
| TI10 | 1 | 5 | 3.809 | 1.076 | -0.745 | - 0.072 |
| TI11 | 1 | 5 | 3.710 | 1.110 | -0.667 | - 0.222 |
| TI12 | 1 | 5 | 3.876 | 1.067 | -0.837 | 0.110 |
| TI13 | 1 | 5 | 3.976 | 1.042 | -0.946 | 0.374 |
| CD1 | 1 | 5 | 4.099 | 0.991 | -1.191 | 1.191 |
| CD2 | 1 | 5 | 3.929 | 1.065 | -1.018 | 0.636 |
| CD3 | 1 | 5 | 4.181 | 0.967 | -1.315 | 1.583 |
| CD4 | 1 | 5 | 3.829 | 1.071 | -0.885 | 0.298 |
| CD5 | 1 | 5 | 3.896 | 1.058 | -0.994 | 0.644 |
| CD6 | 1 | 5 | 4.064 | 1.006 | -1.127 | 0.976 |

Table 4.1 Descriptive Statistics (n=718) (continued)

| Variable Name | Minimum | Maximum | Mean | Std | Skewness | Kurtosis |
|---------------|---------|---------|-------|-------|----------|----------|
| CD7 | 1 | 5 | 3.997 | 1.027 | -1.049 | 0.756 |
| CD8 | 1 | 5 | 4.164 | 0.987 | -1.215 | 1.096 |
| CD9 | 1 | 5 | 3.864 | 1.055 | -0.896 | 0.387 |
| CD10 | 1 | 5 | 4.134 | 1.000 | -1.285 | 1.414 |
| CD11 | 1 | 5 | 3.965 | 1.042 | -1.036 | 0.680 |
| CD12 | 1 | 5 | 4.032 | 1.005 | -1.056 | 0.795 |
| AM1 | 1 | 5 | 3.779 | 1.086 | -0.757 | -0.013 |
| AM2 | 1 | 5 | 3.600 | 1.130 | -0.616 | -0.353 |
| AM3 | 1 | 5 | 3.855 | 1.084 | -0.816 | -0.024 |
| AM4 | 1 | 5 | 3.479 | 1.146 | -0.521 | -0.541 |
| AM5 | 1 | 5 | 3.539 | 1.134 | -0.591 | -0.361 |
| AM6 | 1 | 5 | 3.749 | 1.102 | -0.702 | -0.226 |
| AM7 | 1 | 5 | 3.631 | 1.124 | -0.669 | -0.224 |
| AM8 | 1 | 5 | 3.840 | 1.090 | -0.824 | 0.017 |
| AM9 | 1 | 5 | 3.511 | 1.135 | -0.567 | -0.378 |
| AM10 | 1 | 5 | 3.809 | 1.103 | -0.742 | -0.170 |
| AM11 | 1 | 5 | 3.660 | 1.114 | -0.668 | -0.278 |
| AM12 | 1 | 5 | 3.689 | 1.094 | -0.657 | -0.256 |
| AM13 | 1 | 5 | 3.719 | 1.093 | -0.670 | -0.260 |
| AM14 | 1 | 5 | 3.571 | 1.144 | -0.599 | -0.396 |
| SS1 | 1 | 5 | 4.123 | 1.034 | -1.278 | 1.150 |
| SS2 | 1 | 5 | 3.968 | 1.095 | -1.092 | 0.614 |
| SS3 | 1 | 5 | 4.199 | 1.002 | -1.382 | 1.518 |
| SS4 | 1 | 5 | 3.868 | 1.132 | -0.954 | 0.196 |
| SS5 | 1 | 5 | 3.918 | 1.118 | -1.039 | 0.441 |
| SS6 | 1 | 5 | 4.097 | 1.036 | -1.253 | 1.114 |

Table 4.1 Descriptive Statistics (n=718) (continued)

| Variable Name | Minimum | Maximum | Mean | Std | Skewness | Kurtosis |
|---------------|---------|---------|-------|-------|----------|----------|
| SS7 | 1 | 5 | 3.996 | 1.086 | -1.140 | 0.730 |
| SS8 | 1 | 5 | 4.175 | 1.038 | -1.393 | 1.462 |
| SS9 | 1 | 5 | 3.893 | 1.092 | -0.966 | 0.287 |
| SS10 | 1 | 5 | 4.148 | 1.019 | -1.306 | 1.260 |
| SS11 | 1 | 5 | 4.019 | 1.104 | -1.161 | 0.714 |
| SS12 | 1 | 5 | 4.046 | 1.069 | -1.163 | 0.749 |
| SS13 | 1 | 5 | 4.071 | 1.060 | -1.235 | 1.017 |
| SS14 | 1 | 5 | 3.943 | 1.127 | -1.107 | 0.534 |
| TL1 | 1 | 5 | 3.691 | 1.147 | -0.699 | -0.312 |
| TL2 | 1 | 5 | 3.558 | 1.160 | -0.588 | -0.506 |
| TL3 | 1 | 5 | 3.766 | 1.153 | -0.767 | -0.261 |
| TL4 | 1 | 5 | 3.479 | 1.195 | -0.512 | -0.634 |
| TL5 | 1 | 5 | 3.533 | 1.192 | -0.620 | -0.500 |
| TL6 | 1 | 5 | 3.663 | 1.148 | -0.692 | -0.317 |
| TL7 | 1 | 5 | 3.610 | 1.176 | -0.648 | -0.431 |
| TL8 | 1 | 5 | 3.742 | 1.149 | -0.778 | -0.222 |
| TL9 | 1 | 5 | 3.507 | 1.185 | -0.606 | -0.483 |
| TL10 | 1 | 5 | 3.714 | 1.148 | -0.736 | -0.279 |
| TL11 | 1 | 5 | 3.585 | 1.170 | -0.624 | -0.470 |
| TL12 | 1 | 5 | 3.636 | 1.170 | -0.677 | -0.405 |
| ITC1 | 1 | 5 | 3.744 | 1.118 | -0.700 | -0.228 |
| ITC2 | 1 | 5 | 3.826 | 1.102 | -0.823 | -0.013 |
| ITC3 | 1 | 5 | 3.666 | 1.128 | -0.686 | -0.250 |
| ITC4 | 1 | 5 | 3.584 | 1.149 | -0.593 | -0.406 |
| ITC5 | 1 | 5 | 3.876 | 1.100 | -0.875 | 0.099 |

Table 4.1 Descriptive Statistics (n=718) (continued)

| Variable Name | Minimum | Maximum | Mean | Std | Skewness | Kurtosis |
|---------------|---------|---------|-------|-------|----------|----------|
| ITC6 | 1 | 5 | 3.784 | 1.120 | -0.827 | 0.052 |
| ITC7 | 1 | 5 | 3.504 | 1.154 | -0.523 | -0.502 |
| ITC8 | 1 | 5 | 3.625 | 1.163 | -0.687 | -0.271 |
| ITC9 | 1 | 5 | 3.546 | 1.139 | -0.608 | -0.352 |
| ITC10 | 1 | 5 | 3.703 | 1.141 | -0.756 | -0.106 |
| ITC11 | 1 | 5 | 3.864 | 1.099 | -0.814 | -0.008 |
| IC1 | 1 | 5 | 4.021 | 1.038 | -1.084 | 0.784 |
| IC2 | 1 | 5 | 3.820 | 1.087 | -0.879 | 0.228 |
| IC3 | 1 | 5 | 4.096 | 0.998 | -1.122 | 0.903 |
| IC4 | 1 | 5 | 3.720 | 1.101 | -0.675 | -0.177 |
| IC5 | 1 | 5 | 3.772 | 1.089 | -0.765 | -0.004 |
| IC6 | 1 | 5 | 3.971 | 1.033 | -1.039 | 0.751 |
| IC7 | 1 | 5 | 3.919 | 1.058 | -0.886 | 0.221 |
| IC8 | 1 | 5 | 4.071 | 1.014 | -1.116 | 0.827 |
| IC9 | 1 | 5 | 3.870 | 1.069 | -0.874 | 0.253 |

Skewness, also known as skewness, describes the skewness and direction of the data distribution, and kurtosis describes the statistics of the steepness and flatness of the data distribution curve. Theoretically, the skewness and kurtosis of the standard normal distribution are 0, but the data cannot meet the standard normal distribution. Therefore, the data is abnormal if the absolute value of kurtosis is less than 10 and the absolute value of skewness is less than 3. However, it is generally accepted as a normal distribution. (Kline et al., 2011). In fields where there is no negative value, such as medicine and social science, the coefficient of variation (= standard deviation/mean) is required to be less than 50%; that is, if the absolute value of kurtosis is less than 10, the absolute value of skewness is less than 3, and the coefficient of variation is less than 50%

(sometimes relaxed to 60%). However, the data is not standard; it is accepted as a normal distribution.

Description analysis is used to study the overall situation of quantitative data, describing the overall situation of data through information such as mean or skewness; as can be seen from the above table, the absolute value of kurtosis is all less than 3, and the current data distribution is flat and approximately normal. The skewness is around 0, and the current data distribution is approximately normal.

4.2.1 Correlation Analysis

Pearson correlation analysis was used to examine the significance and direction of linear correlation between two variables; when using Pearson correlation analysis, we generally use the correlation coefficient R to describe the degree of linear correlation between variables, and if the correlation coefficient $R < 0$, it indicates that the correlation between two variables is negative, if the correlation coefficient $R > 0$, the correlation between the two variables is positive, and if the correlation coefficient $R = 0$, the correlation between the two variables is not.

Correlation analysis is used to study the correlation between Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees and living Expenses, International competitiveness, and internal competitiveness, and the Pearson correlation coefficient is used to express the strength of the correlation. Here is how: the correlation coefficient between Technology Innovation and Curriculum Design is 0.465 and presents a significant level of 0.01, which indicates that Technology Innovation and Curriculum Design have a significant positive correlation. The correlation coefficient between Technology Innovation and Admission is 0.493 and presents a significant level of 0.01, which indicates that Technology Innovation and Admission have a significant positive correlation. The correlation coefficient between Technology Innovation and Student Services is 0.491 and presents a significant level of 0.01, which indicates that Technology Innovation and Student Services have a significant positive correlation. The correlation coefficient between Technology Innovation and Tuition Miscellaneous Fees and living Expenses is 0.479. It presents a significant level of 0.01, which indicates that Technology Innovation and Tuition Miscellaneous Fees and living

Expenses have a significant positive correlation. The correlation coefficient between Technology Innovation and International competitiveness is 0.484 and presents a significant level of 0.01, which indicates that Technology Innovation and International competitiveness have a significant positive correlation. The correlation coefficient between technology innovation and internal competitiveness is 0.483, and it presents a significant level of 0.01, which indicates that technology innovation and internal competitiveness have a significant positive correlation.

Table 4.2 Correlation Analysis

| | Mean | Std | | Technology Innovation | Curriculum Design | Admission | Student Services | Tuition Miscellaneous Fees & Living Expenses | International competitiveness | Internal competitiveness |
|--|-------|-------|---------------------|-----------------------|-------------------|-----------|------------------|--|-------------------------------|--------------------------|
| Technology Innovation | 3.807 | 0.871 | Pearson correlation | 1 | | | | | | |
| | | | SIG.(two-tailed) | | | | | | | |
| Curriculum Design | 4.013 | 0.820 | Pearson correlation | 0.465** | 1 | | | | | |
| | | | SIG.(two-tailed) | 0.000 | | | | | | |
| Admission | 3.674 | 0.911 | Pearson correlation | 0.493** | 0.383** | 1 | | | | |
| | | | SIG.(two-tailed) | 0.000 | 0.000 | | | | | |
| Student Services | 4.033 | 0.896 | Pearson correlation | 0.491** | 0.492** | 0.401** | 1 | | | |
| | | | SIG.(two-tailed) | 0.000 | 0.000 | 0.000 | | | | |
| Tuition Miscellaneous Fees & Living Expenses | 3.624 | 0.988 | Pearson correlation | 0.479** | 0.354** | 0.365** | 0.408** | 1 | | |
| | | | SIG.(two-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | | | |
| International competitiveness | 3.702 | 0.934 | Pearson correlation | 0.484** | 0.391** | 0.323** | 0.355** | 0.308** | 1 | |
| | | | SIG.(two-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | |
| Internal competitiveness | 3.918 | 0.823 | Pearson correlation | 0.483** | 0.391** | 0.379** | 0.403** | 0.327** | 0.363** | 1 |
| | | | SIG.(two-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |

**The correlation was significant at 0.01 level (two-tailed).

*The correlation was significant at 0.05 level (two-tailed).

4.2.2 Regression Analysis

Table 4.3 The Regression Analysis Results (n=718)

| | Non-standardized coefficients | | Standardized coefficients | t | p | VIF | R-squared | Adj-R-squared | F |
|--|-------------------------------|----------------|---------------------------|-------|-------|-------|-----------|---------------|--------------------------|
| | B | Standard error | Beta | | | | | | |
| Constant | 0.576 | 0.147 | | 3.931 | 0.000 | | 0.424 | 0.421 | F(4,718)=131.358,p=0.000 |
| Curriculum Design | 0.196 | 0.036 | 0.184 | 5.435 | 0.000 | 1.424 | 0.424 | 0.421 | F(4,718)=131.358,p=0.000 |
| Admission | 0.244 | 0.031 | 0.255 | 7.829 | 0.000 | 1.316 | 0.424 | 0.421 | F(4,718)=131.358,p=0.000 |
| Student Services | 0.195 | 0.034 | 0.201 | 5.773 | 0.000 | 1.500 | 0.424 | 0.421 | F(4,718)=131.358,p=0.000 |
| Tuition Miscellaneous Fees & Living Expenses | 0.210 | 0.029 | 0.238 | 7.345 | 0.000 | 1.301 | 0.424 | 0.421 | F(4,718)=131.358,p=0.000 |

a Dependent: Technology Innovation
D-W: 1.989

From the Regression analysis table, the model formula is (Non-significant coefficients are not included): $\text{Technology Innovation} = 0.576 + 0.196 * \text{Curriculum Design} + 0.244 * \text{Admission} + 0.195 * \text{Student Services} + 0.210 * \text{Tuition Miscellaneous Fees \& Living Expenses}$, adjust after r- square 0.421, this means that Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses can explain why Technology Innovation of 42.1% changed. Check the Multicollinearity of the model; all VIF values are less than 5, which means there is no collinearity problem in the model; and the D-W value is near the number 2, which indicates that there is no autocorrelation in the model, and f-check the model and find that the model passes F-test ($F=131.358, p=0.000 < 0.01$), which means that Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses in at least one item has an impact on Technology Innovation, model better. The final analysis is as follows: the regression coefficient of Curriculum Design is 0.196 ($t = 5.435, P = 0.000 < 0.01$), which

means that Curriculum Design has a significant positive direction effect on Technology Innovation. The regression coefficient of Admission is 0.244($t = 7.829$, $P = 0.000 < 0.01$), which means that Admission has a significant positive direction effect on Technology Innovation. The regression coefficient of Student Services is 0.195($t = 5.773$, $P = 0.000 < 0.01$), which means that Student Services has a significant positive direction effect on Technology Innovation. The regression coefficient of Tuition Miscellaneous Fees and living Expenses is 0.210($t = 7.345$, $P = 0.000 < 0.01$), which means that Tuition Miscellaneous Fees and living Expenses have a significant positive direction effect on Technology Innovation.

Table 4.4 The Regression Analysis Results (n=718)

| | Non-standardized coefficients | | Standardized coefficients | t | p | VIF | R-squared | Adj-R-squared | F |
|--|-------------------------------|----------------|---------------------------|-------|-------|-------|-----------|---------------|-------------------------|
| | B | Standard error | | | | | | | |
| Constant | 1.149 | 0.183 | | 6.279 | 0.000 | | 0.220 | 0.215 | F(4,718)=50.158,p=0.000 |
| Curriculum Design | 0.259 | 0.045 | 0.228 | 5.763 | 0.000 | 1.424 | 0.220 | 0.215 | F(4,718)=50.158,p=0.000 |
| Admission | 0.139 | 0.039 | 0.136 | 3.573 | 0.000 | 1.316 | 0.220 | 0.215 | F(4,718)=50.158,p=0.000 |
| Student Services | 0.146 | 0.042 | 0.140 | 3.451 | 0.001 | 1.500 | 0.220 | 0.215 | F(4,718)=50.158,p=0.000 |
| Tuition Miscellaneous Fees & Living Expenses | 0.114 | 0.036 | 0.121 | 3.198 | 0.001 | 1.301 | 0.220 | 0.215 | F(4,718)=50.158,p=0.000 |

a Dependent: International competitiveness

D-W: 1.955

From the Regression analysis table, the model formula is (Non-significant coefficients are not included): International competitiveness = 1.149 + 0.259 * Curriculum Design + 0.139 * Admission + 0.146 * Student Services + 0.114 * Tuition Miscellaneous Fees & Living Expenses, adjust after r-square 0.215, this means that Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses can explain

why International competitiveness of 21.5% changed. Check the Multicollinearity of the model; all VIF values are less than 5, which means there is no collinearity problem in the model; and the D-W value is near the number 2, which indicates that there is no autocorrelation in the model, and f-check the model and find that the model passes F-test ($F=50.158, p=0.000<0.01$), which means that Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses in at least one item has an impact on International competitiveness, model better. The final analysis is as follows: the regression coefficient of Curriculum Design is $0.259(t = 5.763, P = 0.000<0.01)$, meaning that Curriculum Design has a significant positive direction on international competitiveness. The regression coefficient of Admission is $0.139(t = 3.573, P = 0.000<0.01)$, which means that Admission has a significant positive direction effect on international competitiveness. The regression coefficient of Student Services is $0.146(t = 3.451, P = 0.001<0.01)$, which means that Student Services has a significant positive direction effect on international competitiveness. The regression coefficient of Tuition Miscellaneous Fees and living Expenses is $0.114(t = 3.198, P = 0.001<0.01)$, meaning that Tuition Miscellaneous Fees and living Expenses significantly positively affect international competitiveness.

As from the Regression analysis table, the model formula is (Non-significant coefficients are not included): $\text{Internal competitiveness} = 1.497 + 0.184 * \text{Curriculum Design} + 0.172 * \text{Admission} + 0.175 * \text{Student Services} + 0.095 * \text{Tuition Miscellaneous Fees \& Living Expenses}$, adjust after r-square 0.254, this means that Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses can explain why Internal competitiveness of 25.4% changed. Check the Multicollinearity of the model; all VIF values are less than 5, which means there is no collinearity problem in the model; and the D-W value is near the number 2, which indicates that there is no autocorrelation in the model, and f-check the model and find that the model passes F-test ($F=61.926, p=0.000<0.01$), which means that Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses in at least one item has an impact on Internal competitiveness, model better. The final analysis is as follows: the regression coefficient of Curriculum Design is $0.184(t = 4.777, P = 0.000<0.01)$, which

means that Curriculum Design has a significant positive direction effect on Internal competitiveness. The regression coefficient of Admission is 0.172($t = 5.138$, $P = 0.000 < 0.01$), which means that Admission has a significant positive direction effect on Internal competitiveness. The regression coefficient of Student Services is 0.175($t = 4.809$, $P = 0.000 < 0.01$), which means that Student Services has a significant positive direction effect on Internal competitiveness. The regression coefficient of Tuition Miscellaneous Fees and living Expenses is 0.095($t = 3.108$, $P = 0.002 < 0.01$), which means that Tuition Miscellaneous Fees and living Expenses have a significant positive direction effect on Internal competitiveness.

Table 4.5 The Regression Analysis Results (n=718)

| | Non-standardized coefficients | | Standardized coefficients | t | p | VIF | R-squared | Adj-R-squared | F |
|--|-------------------------------|----------------|---------------------------|-------|-------|-------|-----------|---------------|-------------------------|
| | B | Standard error | Beta | | | | | | |
| Constant | 1.497 | 0.157 | | 9.529 | 0.000 | | 0.258 | 0.254 | F(4,718)=61.926,p=0.000 |
| Curriculum Design | 0.184 | 0.039 | 0.184 | 4.777 | 0.000 | 1.424 | 0.258 | 0.254 | F(4,718)=61.926,p=0.000 |
| Admission | 0.172 | 0.033 | 0.190 | 5.138 | 0.000 | 1.316 | 0.258 | 0.254 | F(4,718)=61.926,p=0.000 |
| Student Services | 0.175 | 0.036 | 0.190 | 4.809 | 0.000 | 1.500 | 0.258 | 0.254 | F(4,718)=61.926,p=0.000 |
| Tuition Miscellaneous Fees & Living Expenses | 0.095 | 0.031 | 0.114 | 3.108 | 0.002 | 1.301 | 0.258 | 0.254 | F(4,718)=61.926,p=0.000 |

a Dependent: Internal competitiveness

D-W: 2.139

4.2.3 Difference Analysis

Table 4.6 Analysis of Variance Analysis Results (n=718) *p<0.05 **p<0.01

| * 12. Where do you think Thailand's higher education stands in terms of Chinese students' perspective in the international market compared to the others?(mean±std) | | | | | | | |
|---|-------------------------------------|---|---|---------------------------------------|--|--------|---------|
| | Highly competitive (80-100%) (n=82) | Higher competitiveness (70-79%) (n=231) | Medium competitiveness (60-69%) (n=302) | Lower competitiveness (50-59%) (n=75) | Non-competitive (less than 50%) (n=28) | F□ | p□ |
| Technology Innovation | 3.538 ± 0.847 | 3.598 ± 0.763 | 4.179 ± 0.786 | 3.411 ± 0.940 | 3.371 ± 0.980 | 28.395 | 0.000** |
| Curriculum Design | 3.966 ± 0.911 | 4.002 ± 0.815 | 4.114 ± 0.730 | 3.818 ± 0.896 | 3.667 ± 1.104 | 3.581 | 0.007** |
| Admission | 3.620 ± 0.900 | 3.559 ± 0.953 | 3.864 ± 0.801 | 3.469 ± 1.054 | 3.278 ± 0.931 | 6.763 | 0.000** |
| Student Services | 4.023 ± 0.905 | 3.963 ± 0.952 | 4.185 ± 0.721 | 3.723 ± 1.137 | 3.834 ± 1.085 | 5.241 | 0.000** |
| Tuition Miscellaneous Fees & Living Expenses | 3.461 ± 1.017 | 3.603 ± 1.011 | 3.769 ± 0.896 | 3.422 ± 1.097 | 3.247 ± 1.141 | 4.068 | 0.003** |
| International competitiveness | 3.651 ± 1.031 | 3.658 ± 0.934 | 3.829 ± 0.825 | 3.575 ± 1.043 | 3.188 ± 1.210 | 4.123 | 0.003** |
| Internal competitiveness | 3.885 ± 0.874 | 3.873 ± 0.879 | 4.021 ± 0.681 | 3.836 ± 0.888 | 3.488 ± 1.191 | 3.546 | 0.007** |

Use Analysis of variance (full name: one-way ANOVA) to investigate the difference between * 12. Where do you think Thailand's higher education stands in terms of Chinese students' perspective in the international market compared to the others? Moreover, Technology Innovation, Curriculum Design, Admission, Student Services, Tuition fee Living Expenses, International competitiveness, and Internal competitiveness,

from the above different samples, are significant for Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees, Living Expenses, International competitiveness, Internal competitiveness, both ($P < 0.05$), which means that different samples are significantly different for Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses, International competitiveness, Internal competitiveness. For Technology Innovation, there was a significant difference of 0.01 level ($t = 28.395$, $P = 0.000^{**}$) in different samples, and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%) > Higher competitiveness (70-79%) > Highly competitive (80-100%) > Lower competitiveness (50-59%) > Non-competitive (less than 50%)". For Curriculum Design, there was a significant difference of 1 level ($t = 3.581$, $P = 0.007^{**}$) in different samples, and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%) > Higher competitiveness (70-79%) > Highly competitive (80-100%) > Lower competitiveness (50-59%) > Non-competitive (less than 50%)". For admission, there was a significant difference of 0.01 level ($t = 6.763$, $P = 0.000^{**}$) in different samples and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%) > Highly competitive (80-100%) > Higher competitiveness (70-79%) > Lower competitiveness (50-59%) > Non-competitive (less than 50%)". For Student Services, there was a significant difference of 0.01 level ($t = 5.241$, $P = 0.000^{**}$) in different samples, and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%) > Highly competitive (80-100%) > Higher competitiveness (70-79%) > Non-competitive (less than 50%) > Lower competitiveness (50-59%)". For Tuition Miscellaneous Fees and living expenses, there was a significant difference of 1 level ($t = 4.068$, $P = 0.003^{**}$) in different samples, and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%) > Higher competitiveness (70-79%) > Highly competitive (80-100%) > Lower competitiveness (50-59%) > Non-competitive (less than 50%)". For international

competitiveness, there was a significant difference of 1 level ($t = 4.123$, $P = 0.003^{**}$) in different samples, and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%) > Higher competitiveness (70-79%) > Highly competitive (80-100%) > Lower competitiveness (50-59%)>Non-competitive (less than 50%)". For internal competitiveness, there was a significant difference of 1 level ($t = 3.546$, $P = 0.007^{**}$) in different samples and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%) > Highly competitive (80-100%) > Higher competitiveness (70-79%)>Lower competitiveness (50-59%)>Non-competitive (less than 50%)".

Table 4.7 Analysis of Variance Analysis Results (n=718) * $p < 0.05$ ** $p < 0.01$

| | * 14. Do you think your college or department is competitive at the university you are attending?(mean±std) | | | | | F□ | p□ |
|---|---|---|---|---------------------------------------|--|-------|---------|
| | Highly competitive (80-100%) (n=106) | Higher competitiveness (70-79%) (n=184) | Medium competitiveness (60-69%) (n=295) | Lower competitiveness (50-59%) (n=97) | Non-competitive (less than 50%) (n=36) | | |
| Technology Innovation | 3.685 ± 1.039 | 3.713 ± 0.916 | 3.963 ± 0.663 | 3.788 ± 0.934 | 3.421 ± 1.180 | 5.326 | 0.000** |
| Curriculum Design | 3.899 ± 0.926 | 3.983 ± 0.801 | 4.137 ± 0.723 | 3.968 ± 0.838 | 3.604 ± 1.092 | 4.665 | 0.001** |
| Admission | 3.643 ± 0.941 | 3.600 ± 0.929 | 3.832 ± 0.800 | 3.398 ± 1.020 | 3.587 ± 1.062 | 4.955 | 0.001** |
| Student Services | 3.951 ± 0.969 | 3.991 ± 0.875 | 4.187 ± 0.763 | 3.843 ± 1.028 | 3.742 ± 1.185 | 4.631 | 0.001** |
| Tuition Miscellaneous Fees & Living Expenses | 3.506 ± 1.051 | 3.562 ± 1.049 | 3.806 ± 0.844 | 3.464 ± 1.086 | 3.227 ± 1.071 | 5.272 | 0.000** |
| International competitiveness | 3.570 ± 1.039 | 3.618 ± 1.015 | 3.845 ± 0.755 | 3.694 ± 1.000 | 3.371 ± 1.164 | 3.806 | 0.005** |
| Internal competitiveness | 3.851 ± 0.922 | 3.805 ± 0.825 | 4.089 ± 0.666 | 3.748 ± 0.980 | 3.744 ± 0.977 | 5.831 | 0.000** |

Use Analysis of variance (full name: one-way ANOVA) to investigate the difference between * 14. Do you think your college or department is competitive at the university you are attending? Moreover, Technology Innovation, Curriculum Design, Admission, Student Services, Tuition, Miscellaneous Fees, Living Expenses, International competitiveness Internal competitiveness as from the above table, different samples are significant for Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees and living Expenses, International competitiveness, and Internal competitiveness both ($P < 0.05$), which means that different samples are significantly different for Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses, International competitiveness, Internal competitiveness :

For technology Innovation, there was a significant difference of 0.01 level ($t = 5.326$, $P = 0.000^{**}$) in different samples and the specific comparison mean value could be known. The group average score that had significant difference was "Medium competitiveness (60-69%) > Lower competitiveness (50-59%) > Higher competitiveness (70-79%) > Highly competitive (80-100%) > Non-competitive (less than 50%)". For curriculum Design, there was a significant difference of 1 level ($t = 4.665$, $P = 0.001^{**}$) in different samples and the specific comparison mean value could be known. The group average score that had significant difference was "Medium competitiveness (60-69%) > Higher competitiveness (70-79%) > Lower competitiveness (50-59%) > Highly competitive (80-100%) > Non-competitive (less than 50%)". For admission, there was a significant difference of 1 level ($t = 4.955$, $P = 0.001^{**}$) in different samples and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%) > Highly competitive (80-100%) > Higher competitiveness (70-79%) > Non-competitive (less than 50%) > Lower competitiveness (50-59%)". For Student Services, there was a significant difference of 1 level ($t = 4.631$, $P = 0.001^{**}$) in different samples, and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%) > Higher competitiveness (70-79%) > Highly competitive (80-

100%) > Lower competitiveness (50-59%) > Non-competitive (less than 50%)". For tuition Miscellaneous Fees and living expenses, there was a significant difference of 0.01 level ($t = 5.272$, $P = 0.000^{**}$) in different samples, and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%)>Higher competitiveness (70-79%)>Highly competitive (80-100%)>Lower competitiveness (50-59%)>Non-competitive (less than 50%)". For international competitiveness, there was a significant difference of 1 level ($t = 3.806$, $P = 0.005^{**}$) in different samples, and the specific comparison mean value could be known. The group average score that had significant difference was "Medium competitiveness (60-69%)>Lower competitiveness (50-59%)>Higher competitiveness (70-79%)>Highly competitive (80-100%)>Non-competitive (less than 50%)". For internal competitiveness, there was a significant difference of 0.01 level ($t = 5.831$, $P = 0.000^{**}$) in different samples and the specific comparison mean value could be known. The group average score that had a significant difference was "Medium competitiveness (60-69%) > Highly competitive (80-100%) > Higher competitiveness (70-79%) > Lower competitiveness (50-59%)>Non-competitive (less than 50%)".

Use Analysis of variance (full name: one-way ANOVA) to investigate the difference between * 6. Would you recommend your current studying program to your friends or relatives? and Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses, International competitiveness, Internal competitiveness, as you can see from the above table: different samples are not significant for Technology Innovation, Curriculum Design, Admission, Student Services, International competitiveness, Internal competitiveness both ($P > 0.05$), which means that different samples are not different for Technology Innovation, Curriculum Design, Admission, Student Services, International competitiveness, Internal competitiveness both, different samples are significant for Tuition Miscellaneous Fees & Living Expenses ($P < 0.05$), which means that different samples are significantly different for Tuition Miscellaneous Fees & Living Expenses: for Tuition Miscellaneous Fees & Living Expenses, there was significant difference of 1 level ($t = 3.212$, $P = 0.041^*$) in different samples, and the specific comparison mean value could be known. The group

average score that had a significant difference was” No (If no, please go to Question 8)
>Yes (If yes, please go to Question 7)>Not sure”.

Table 4.8 Analysis of Variance Analysis Results (n=718) *p<0.05 **p<0.01

| | * 6. Would you recommend your current study program to your friends or relatives? (mean±std) | | | F□ | p□ |
|---|--|---|-----------------|-------|--------|
| | Yes (If Yes, Please go to Question 7) (n=478) | No (If No, Please go to Question 8) (n=169) | Not sure (n=71) | | |
| Technology Innovation | 3.810 ± 0.820 | 3.832 ± 0.951 | 3.725 ± 1.005 | 0.391 | 0.676 |
| Curriculum Design | 4.048 ± 0.801 | 3.944 ± 0.865 | 3.937 ± 0.833 | 1.358 | 0.258 |
| Admission | 3.716 ± 0.881 | 3.631 ± 0.937 | 3.493 ± 1.026 | 2.097 | 0.124 |
| Student Services | 4.051 ± 0.877 | 4.036 ± 0.880 | 3.909 ± 1.051 | 0.768 | 0.464 |
| Tuition Miscellaneous Fees & Living Expenses | 3.628 ± 0.949 | 3.720 ± 1.021 | 3.367 ± 1.129 | 3.212 | 0.041* |
| International Competitiveness | 3.669 ± 0.918 | 3.781 ± 0.940 | 3.740 ± 1.028 | 0.963 | 0.382 |
| Internal Competitiveness | 3.949 ± 0.798 | 3.867 ± 0.901 | 3.831 ± 0.788 | 1.051 | 0.350 |

Table 4.9 Analysis of Variance Analysis Results (n=718) *p<0.05 **p<0

| | * 7. Why do you recommend your current studying program to your friends or relatives? (More than one answer)(mean±std) | | | | | | | | F□ | p□ |
|--|---|--------------------------------|--|--|-----------------------------|--------------------------------|---------------------------|-------------------------------|-------|-------|
| | . Convenient location (n=51) | . Good student services (n=55) | . Simplified application process (n=168) | . Curriculum design expectations (n=116) | . Lower tuition fees (n=94) | . Lower cost of living (n=139) | . All of the above (n=68) | . Other: underline 必选 (n=27) | | |
| Technology Innovation | 3.821 ± 0.818 | 3.730 ± 1.000 | 3.797 ± 0.807 | 3.920 ± 0.757 | 3.872 ± 0.893 | 3.745 ± 0.912 | 3.886 ± 0.857 | 3.410 ± 1.184 | 1.405 | 0.200 |
| Curriculum Design | 4.078 ± 0.751 | 4.029 ± 0.906 | 4.064 ± 0.733 | 4.162 ± 0.681 | 3.905 ± 0.901 | 3.990 ± 0.916 | 3.855 ± 0.795 | 3.781 ± 0.997 | 1.619 | 0.127 |
| Admission | 3.632 ± 1.007 | 3.564 ± 0.997 | 3.702 ± 0.916 | 3.766 ± 0.802 | 3.781 ± 0.885 | 3.672 ± 0.910 | 3.625 ± 0.949 | 3.164 ± 0.843 | 1.760 | 0.092 |
| Student Services | 4.034 ± 0.874 | 4.022 ± 0.949 | 4.061 ± 0.911 | 4.196 ± 0.682 | 3.912 ± 0.881 | 4.034 ± 0.964 | 3.922 ± 0.985 | 3.876 ± 0.973 | 1.090 | 0.368 |
| Tuition Miscellaneous Fees & Living Expenses | 3.562 ± 1.066 | 3.626 ± 0.900 | 3.611 ± 0.981 | 3.726 ± 0.875 | 3.561 ± 1.101 | 3.644 ± 0.945 | 3.684 ± 1.044 | 3.343 ± 1.208 | 0.616 | 0.743 |
| International competitiveness | 3.679 ± 0.985 | 3.764 ± 0.837 | 3.603 ± 0.913 | 3.827 ± 0.823 | 3.719 ± 0.995 | 3.778 ± 0.927 | 3.596 ± 1.032 | 3.515 ± 1.145 | 1.015 | 0.419 |
| Internal competitiveness | 3.911 ± 0.745 | 3.909 ± 0.945 | 3.899 ± 0.818 | 4.047 ± 0.669 | 3.949 ± 0.855 | 3.916 ± 0.816 | 3.923 ± 0.767 | 3.395 ± 1.201 | 2.018 | 0.050 |

Use Analysis of variance (full name: one-way ANOVA) to investigate the difference between * 7. Why do you recommend your current studying program to your friends or relatives? (More than one answer) and Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees and Living Expenses, International competitiveness, and Internal competitiveness, as you can see from the above table: different samples are not significant for Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses, International competitiveness, Internal competitiveness both(P>0.05), which means that

different samples are not different for Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses, International competitiveness, Internal competitiveness both

Table 4.10 Analysis of Variance Analysis Results (n=718) *p<0.05 **p<0.01

| * 8. Will you choose Thailand as the next country to study in after you have finished this stage of your studies? (mean±std) | | | | | |
|--|---|--|----------------|-------|---------|
| | | | | F □ | p □ |
| | Yes (If yes, please go to Question 9) (n=529) | No (If no, please go to Question 10) (n=130) | Not sure(n=59) | | |
| Technology Innovation | 3.817 ± 0.827 | 3.857 ± 0.952 | 3.608 ± 1.048 | 1.802 | 0.166 |
| Curriculum Design | 4.060 ± 0.783 | 3.960 ± 0.904 | 3.702 ± 0.889 | 5.471 | 0.004** |
| Admission | 3.717 ± 0.865 | 3.623 ± 1.017 | 3.395 ± 1.018 | 3.601 | 0.028* |
| Student Services | 4.052 ± 0.858 | 4.050 ± 0.957 | 3.829 ± 1.062 | 1.668 | 0.189 |
| Tuition Miscellaneous Fees & Living Expenses | 3.664 ± 0.960 | 3.567 ± 1.064 | 3.387 ± 1.047 | 2.355 | 0.096 |
| International Competitiveness | 3.726 ± 0.895 | 3.697 ± 1.014 | 3.495 ± 1.081 | 1.636 | 0.195 |
| Internal Competitiveness | 3.943 ± 0.806 | 3.900 ± 0.784 | 3.731 ± 1.025 | 1.810 | 0.164 |

Use Analysis of variance (full name: one-way ANOVA) to investigate the difference between * 8. Will you choose Thailand as the next country to study in after you have finished this stage of your studies? Moreover, Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees and living Expenses, International competitiveness, and Internal competitiveness, as from the above

table, different samples are not significant for Technology Innovation, Student Services, Tuition Miscellaneous Fees, Living Expenses, International competitiveness, Internal competitiveness both ($P > 0.05$), which means that different samples are not different for Technology Innovation, Student Services, Tuition Miscellaneous Fees & Living Expenses, International competitiveness, Internal competitiveness both, different samples are significant for Curriculum Design, Admission both ($P < 0.05$), which means that different samples are significantly different for Curriculum Design, Admission: for Curriculum Design, there was significant difference of 1 level ($t = 5.471$, $P = 0.004^{**}$) in different samples, and the specific comparison mean value could be known. The group average score that had a significant difference was". Yes (If yes, please go to Question 9)>. No (If no, please go to Question 10)>. Not sure". For Admission, there was a significant difference of 1 level ($t = 3.601$, $P = 0.028^*$) in different samples, and the specific comparison mean value could be known. The group average score that had a significant difference was". Yes (If yes, please go to Question 9)>. No (If no, please go to Question 10)>. Not sure".

Use Analysis of variance (full name: one-way ANOVA) to investigate the difference between * 9. Why do you recommend your current studying program to your friends or relatives? (More than one answer) Moreover, Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees and living Expenses, International competitiveness, and Internal competitiveness, as from the above table, different samples are not significant for Technology Innovation, Admission, Student Services, Tuition Miscellaneous Fees and Living Expenses, International competitiveness, Internal competitiveness both ($P > 0.05$), which means that different samples are not different for Technology Innovation, Admission, Student Services, Tuition Miscellaneous Fees & Living Expenses, International competitiveness, Internal competitiveness both, different samples are significant for Curriculum Design ($P < 0.05$), which means that different samples are significantly different for Curriculum Design. For Curriculum Design, there was a significant difference of 1 level ($t = 2.858$, $P = 0.015^*$) in different samples and the specific comparison mean value could be known. The group average score that had a significant difference was" Rational curriculum design>.

Excellent international student services>. Appropriate tuition fees>. Experienced professors>. All the above>. Other:必选".

Table 4.11 Analysis of Variance Analysis Results(n=718) *p<0.05 **p<0.01

| | * 9. Why do you recommend your current studying program to your friends or relatives? (More than one answer)(mean±std) | | | | | | F□ | p□ |
|--|--|--------------------------------|------------------------------------|--|-------------------------|-------------------------|-------|--------|
| | Appropriate tuition fees (n=106) | Experienced professors (n=171) | Rational curriculum design (n=223) | Excellent international student services (n=136) | All of the above (n=61) | Other: <u>必选</u> (n=21) | | |
| Technology Innovation | 3.789 ± 0.928 | 3.824 ± 0.860 | 3.899 ± 0.733 | 3.740 ± 0.945 | 3.666 ± 1.002 | 3.626 ± 1.082 | 1.187 | 0.314 |
| Curriculum Design | 3.969 ± 0.939 | 3.954 ± 0.870 | 4.156 ± 0.680 | 4.013 ± 0.800 | 3.843 ± 0.879 | 3.679 ± 0.900 | 2.858 | 0.015* |
| Admission | 3.621 ± 0.982 | 3.690 ± 0.945 | 3.801 ± 0.803 | 3.590 ± 0.948 | 3.569 ± 0.870 | 3.299 ± 1.076 | 2.074 | 0.067 |
| Student Services | 3.947 ± 0.989 | 4.028 ± 0.923 | 4.156 ± 0.790 | 3.972 ± 0.902 | 3.973 ± 0.918 | 3.779 ± 1.058 | 1.570 | 0.166 |
| Tuition Miscellaneous Fees & Living Expenses | 3.609 ± 1.013 | 3.647 ± 0.988 | 3.699 ± 0.909 | 3.578 ± 1.003 | 3.383 ± 1.098 | 3.710 ± 1.222 | 1.099 | 0.359 |
| International Competitiveness | 3.703 ± 0.933 | 3.643 ± 0.957 | 3.816 ± 0.859 | 3.655 ± 0.984 | 3.614 ± 0.952 | 3.524 ± 1.109 | 1.127 | 0.345 |
| Internal Competitiveness | 3.934 ± 0.758 | 3.956 ± 0.832 | 3.988 ± 0.769 | 3.806 ± 0.904 | 3.827 ± 0.869 | 3.762 ± 0.906 | 1.209 | 0.303 |

Table 4.12 Analysis of Variance Analysis Results (n=718) *p<0.05 **p<0.01

| | * 10. Will you continue to study at the university you are attending after you have completed this stage of your studies? (mean±std) | | | F□ | p□ |
|--|--|--|----------------|-------|---------|
| | Yes (If Yes, Please go to Question 11) (n=497) | No (If No, Please go to Question 12) (n=162) | Not sure(n=59) | | |
| Technology Innovation | 3.818 ± 0.816 | 3.891 ± 0.952 | 3.485 ± 1.018 | 4.871 | 0.008** |
| Curriculum Design | 4.072 ± 0.792 | 3.939 ± 0.815 | 3.715 ± 0.988 | 5.943 | 0.003** |
| Admission | 3.680 ± 0.878 | 3.657 ± 0.954 | 3.665 ± 1.066 | 0.041 | 0.960 |
| Student Services | 4.081 ± 0.837 | 4.003 ± 0.949 | 3.715 ± 1.140 | 4.544 | 0.011* |
| Tuition Miscellaneous Fees & Living Expenses | 3.673 ± 0.952 | 3.555 ± 1.030 | 3.401 ± 1.140 | 2.508 | 0.082 |
| International Competitiveness | 3.700 ± 0.921 | 3.798 ± 0.911 | 3.455 ± 1.074 | 2.941 | 0.053 |
| Internal Competitiveness | 3.935 ± 0.788 | 3.930 ± 0.867 | 3.740 ± 0.968 | 1.504 | 0.223 |

Use Analysis of variance (full name: one-way ANOVA) to investigate the difference between * 10. Will you continue to study at the university you are attending after you have completed this stage of your studies? Moreover, Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees and living Expenses, International competitiveness, and Internal competitiveness, as from the above table, different samples are not significant for Admission, Tuition Miscellaneous Fees and living Expenses, International competitiveness, Internal competitiveness both($P>0.05$), which means that different samples are not different for Admission, Tuition Miscellaneous Fees and Living Expenses, International competitiveness, Internal competitiveness both, different samples are significant for Technology Innovation, Curriculum Design, Student Services both($P<0.05$), which means that different samples

are significantly different for Technology Innovation, Curriculum Design, Student Services: for Technology Innovation, there was significant difference of 1 level ($t = 4.871$, $P = 0.008^{**}$) in different samples, and the specific comparison mean value could be known. The group average score that had a significant difference was "No (If no, please go to Question 12) > Yes (If yes, please go to Question 11) > Not sure". For curriculum Design, there was a significant difference of 1 level ($t = 5.943$, $P = 0.003^{**}$) in different samples and the specific comparison mean value could be known. The group average score that had a significant difference was "Yes (If yes, please go to Question 11) > No (If no, please go to Question 12) > Not sure". For Student Services, there was a significant difference of 1 level ($t = 4.544$, $P = 0.011^*$) in different samples and the specific comparison mean value could be known. The group average score that had a significant difference was "Yes (If yes, please go to Question 11) > No (If no, please go to Question 12) > Not sure".

4.2.4 Confirmatory Factor Analysis (CFA)

In this study, we conducted a Confirmatory Factor Analysis (CFA) using AMOS 26.0 software for the variables associated with the following scales: the Technology Innovation scale, the Curriculum Design scale, the Admission scale, the Student Services scale, the Tuition Miscellaneous Fees and Living Expenses scale, the International Competitiveness scale, and the Internal Competitiveness scale. We utilized the Composite Reliability (CR) and Average Variance Extracted (AVE) to assess the convergent validity of each variable dimension.

First, we assessed the CFA scales' model fit. Data collected through the questionnaires were imported into AMOS 26 software, and the model fit parameters obtained using the Maximum Likelihood method are presented in the table below.

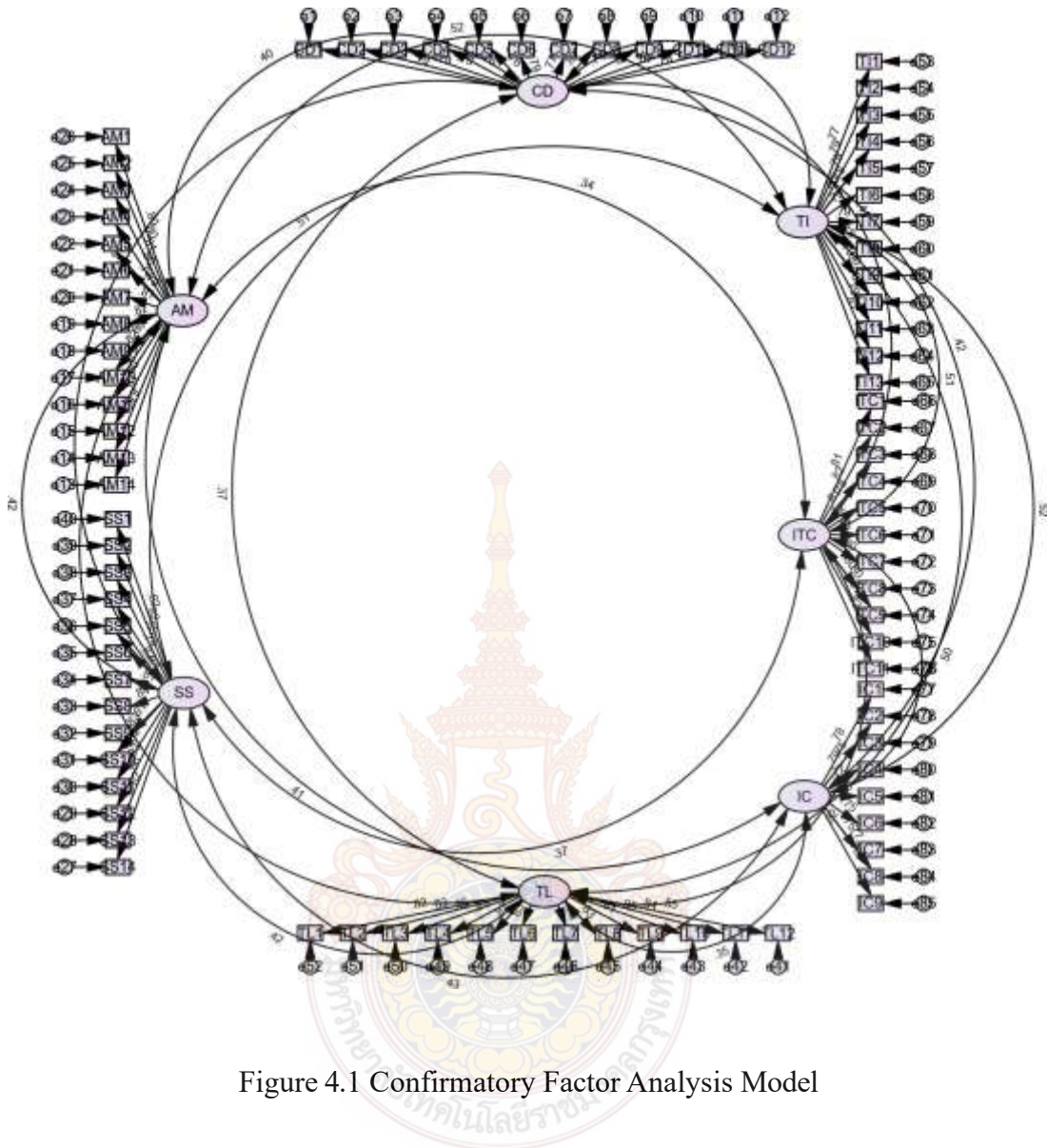


Figure 4.1 Confirmatory Factor Analysis Model

Table 4.13 Model Fitting for the Validated Factor Analysis

| Model fitting | χ^2 | <i>df</i> | <i>p</i> | χ^2/df | GFI | RMSEA | RMR | CFI | NFI | AGFI |
|-------------------|----------|-----------|----------|-------------|-------|-------|-------|-------|-------|-------|
| Recommended Value | - | - | >0.05 | <3 | >0.9 | <0.08 | <0.05 | >0.9 | >0.9 | >0.9 |
| Fitting results | 3629.049 | 3464 | 0.025 | 1.048 | 0.897 | 0.008 | 0.029 | 0.997 | 0.931 | 0.892 |

From the table, it can be observed that the CMIN/DF value is 1.048, which is less than 3. NFI and CFI are more significant than 0.9, and RMSEA is 0.008, less than

0.08. These findings indicate that the model fits the Confirmatory Factor Analysis well. The model's overall fit for the Technology Innovation scale, Curriculum Design scale, Admission scale, Student Services scale, Tuition Miscellaneous Fees and Living Expenses scale, International Competitiveness scale, and Internal Competitiveness scale is satisfactory.

Table 4.14 Convergent Validity Results

| Variables | Title Item | Estimated Value | S.E. | C.R. | Standardized Factor Loadings |
|-----------|------------|-----------------|-------|--------|------------------------------|
| CD | CD1 | 1 | | | 0.793 |
| CD | CD2 | 1.065 | 0.045 | 23.611 | 0.786 |
| CD | CD3 | 0.974 | 0.041 | 23.81 | 0.791 |
| CD | CD4 | 1.041 | 0.046 | 22.759 | 0.764 |
| CD | CD5 | 1.027 | 0.045 | 22.682 | 0.762 |
| CD | CD6 | 1.015 | 0.042 | 23.896 | 0.793 |
| CD | CD7 | 1.008 | 0.044 | 23.02 | 0.771 |
| CD | CD8 | 1.034 | 0.041 | 25.132 | 0.823 |
| CD | CD9 | 0.994 | 0.046 | 21.831 | 0.74 |
| CD | CD10 | 1.039 | 0.042 | 24.839 | 0.816 |
| CD | CD11 | 1.013 | 0.045 | 22.737 | 0.763 |
| CD | CD12 | 1.002 | 0.043 | 23.49 | 0.783 |
| AM | AM14 | 1 | | | 0.786 |
| AM | AM13 | 0.979 | 0.04 | 24.317 | 0.805 |
| AM | AM12 | 0.974 | 0.04 | 24.158 | 0.801 |
| AM | AM11 | 0.982 | 0.041 | 23.847 | 0.793 |
| AM | AM10 | 1.006 | 0.04 | 24.896 | 0.819 |
| AM | AM9 | 1.008 | 0.042 | 24.052 | 0.798 |
| AM | AM8 | 0.996 | 0.04 | 24.971 | 0.821 |
| AM | AM7 | 1.015 | 0.041 | 24.615 | 0.812 |
| AM | AM6 | 0.971 | 0.041 | 23.807 | 0.792 |
| AM | AM5 | 1.002 | 0.042 | 23.886 | 0.794 |
| AM | AM4 | 1.013 | 0.042 | 23.932 | 0.795 |
| AM | AM3 | 0.979 | 0.04 | 24.602 | 0.812 |
| AM | AM2 | 1.01 | 0.042 | 24.26 | 0.804 |
| AM | AM1 | 0.972 | 0.04 | 24.287 | 0.804 |
| SS | SS14 | 1 | | | 0.825 |
| SS | SS13 | 0.915 | 0.035 | 25.984 | 0.803 |
| SS | SS12 | 0.952 | 0.035 | 27.24 | 0.828 |
| SS | SS11 | 0.979 | 0.036 | 27.046 | 0.824 |

Table 4.14 Convergent Validity Results (continued)

| Variables | Title Item | Estimated Value | S.E. | C.R. | Standardized Factor Loadings |
|------------------|-------------------|------------------------|-------------|-------------|-------------------------------------|
| SS | SS10 | 0.907 | 0.033 | 27.203 | 0.827 |
| SS | SS9 | 0.953 | 0.036 | 26.38 | 0.811 |
| SS | SS8 | 0.937 | 0.034 | 27.848 | 0.84 |
| SS | SS7 | 0.952 | 0.036 | 26.589 | 0.815 |
| SS | SS6 | 0.931 | 0.034 | 27.628 | 0.835 |
| SS | SS5 | 0.982 | 0.037 | 26.638 | 0.816 |
| SS | SS4 | 0.968 | 0.038 | 25.586 | 0.795 |
| SS | SS3 | 0.918 | 0.032 | 28.466 | 0.851 |
| SS | SS2 | 0.961 | 0.036 | 26.62 | 0.816 |
| SS | SS1 | 0.911 | 0.034 | 26.779 | 0.819 |
| TL | TL12 | 1 | | | 0.849 |
| TL | TL11 | 0.989 | 0.034 | 29.182 | 0.839 |
| TL | TL10 | 0.979 | 0.033 | 29.703 | 0.848 |
| TL | TL9 | 0.961 | 0.035 | 27.238 | 0.806 |
| TL | TL8 | 0.965 | 0.033 | 28.877 | 0.834 |
| TL | TL7 | 0.987 | 0.034 | 28.911 | 0.835 |
| TL | TL6 | 0.958 | 0.034 | 28.59 | 0.829 |
| TL | TL5 | 0.983 | 0.035 | 28.006 | 0.819 |
| TL | TL4 | 0.998 | 0.035 | 28.634 | 0.83 |
| TL | TL3 | 0.988 | 0.033 | 29.957 | 0.852 |
| TL | TL2 | 0.967 | 0.034 | 28.527 | 0.828 |
| TL | TL1 | 0.946 | 0.034 | 27.995 | 0.819 |
| TI | TI1 | 1 | | | 0.774 |
| TI | TI2 | 1.033 | 0.045 | 23.196 | 0.79 |
| TI | TI3 | 1.046 | 0.045 | 23.258 | 0.792 |
| TI | TI4 | 1.066 | 0.046 | 22.95 | 0.784 |
| TI | TI5 | 0.996 | 0.042 | 23.503 | 0.799 |
| TI | TI6 | 1.005 | 0.044 | 23.056 | 0.787 |
| TI | TI7 | 1.038 | 0.045 | 23.313 | 0.794 |
| TI | TI8 | 1.055 | 0.046 | 22.94 | 0.784 |
| TI | TI9 | 1.043 | 0.045 | 23.06 | 0.787 |
| TI | TI10 | 1.042 | 0.044 | 23.476 | 0.798 |
| TI | TI11 | 1.051 | 0.046 | 22.847 | 0.781 |
| TI | TI12 | 1.027 | 0.044 | 23.337 | 0.794 |

Table 4.14 Convergent Validity Results (continued)

| Variables | Title Item | Estimated Value | S.E. | C.R. | Standardized Factor Loadings |
|-----------|------------|-----------------|-------|--------|------------------------------|
| TI | TI13 | 1.02 | 0.043 | 23.829 | 0.808 |
| ITC | ITC1 | 1 | | | 0.81 |
| ITC | ITC2 | 1.001 | 0.038 | 26.012 | 0.823 |
| ITC | ITC3 | 0.977 | 0.04 | 24.322 | 0.785 |
| ITC | ITC4 | 1.032 | 0.04 | 25.611 | 0.814 |
| ITC | ITC5 | 1.001 | 0.038 | 26.082 | 0.824 |
| ITC | ITC6 | 0.998 | 0.039 | 25.309 | 0.807 |
| ITC | ITC7 | 1.022 | 0.041 | 25.084 | 0.802 |
| ITC | ITC8 | 1.032 | 0.041 | 25.154 | 0.804 |
| ITC | ITC9 | 1.011 | 0.04 | 25.173 | 0.804 |
| ITC | ITC10 | 1.017 | 0.04 | 25.31 | 0.807 |
| ITC | ITC11 | 0.989 | 0.039 | 25.662 | 0.815 |
| IC | IC1 | 1 | | | 0.784 |
| IC | IC2 | 1.001 | 0.047 | 21.472 | 0.75 |
| IC | IC3 | 0.971 | 0.042 | 22.997 | 0.792 |
| IC | IC4 | 0.976 | 0.048 | 20.514 | 0.722 |
| IC | IC5 | 0.932 | 0.047 | 19.647 | 0.697 |
| IC | IC6 | 0.946 | 0.044 | 21.33 | 0.746 |
| IC | IC7 | 0.972 | 0.045 | 21.403 | 0.748 |
| IC | IC8 | 0.956 | 0.043 | 22.113 | 0.768 |

*** p<0.001

Note: TI=Technology, Innovation, CD=Curriculum Design, AM=Admission, SS=Student Services, TL=Tuition Miscellaneous Fees & Living Expenses, ITC=International Competitiveness, IC=Internal Competitiveness

Table 4.15 The Results of the Model's AVE (Average Variance Extracted) and CR (Composite Reliability) Indicators

| Factor | AVE | CR |
|--------|-------|-------|
| CD | 0.612 | 0.95 |
| AM | 0.644 | 0.962 |
| SS | 0.676 | 0.967 |
| TL | 0.693 | 0.964 |
| TI | 0.624 | 0.956 |
| ITC | 0.654 | 0.954 |
| IC | 0.562 | 0.92 |

Note: TI=Technology, Innovation, CD=Curriculum Design, AM=Admission, SS=Student Services, TL=Tuition Miscellaneous Fees & Living Expenses, ITC=International competitiveness, IC=Internal competitiveness

In this Confirmatory Factor Analysis (CFA) conducted for a total of 7 factors and 85 observed variables, as shown in the table above, it is evident that the AVE (Average Variance Extracted) values for all 7 factors are more significant than 0.5. The CR (Composite Reliability) values for all factors exceed 0.7. This implies that the data analyzed in this study exhibit strong convergent validity.

In this study, we employed Pearson correlation analysis to assess the significance and direction of the linear relationships between pairs of variables. When using Pearson correlation analysis, we generally use the correlation coefficient (r) to describe the degree of linear association between variables. Suppose the correlation coefficient (r) value is less than 0. In that case, it indicates a negative correlation between two variables. In contrast, if the correlation coefficient (r) value is greater than 0, it signifies a positive correlation between two variables.

Discriminant validity between variables is good when the Average Variance Extracted (AVE) square for a latent variable is greater than the correlation between those variables and other variables. As shown in the table, the correlation coefficients between the variables in this study are all less than the square root of the AVE for each latent variable, suggesting that the discriminant validity among the latent variables is adequate.

Table 4.16 Discriminant Validity: Correlation vs. Square Root of AVE

| | AM | SS | TL | CD | TI | ITC | IC |
|-----|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| AM | 0.802 | | | | | | |
| SS | 0.417 | 0.822 | | | | | |
| TL | 0.380 | 0.423 | 0.832 | | | | |
| CD | 0.402 | 0.513 | 0.372 | 0.782 | | | |
| TI | 0.515 | 0.511 | 0.498 | 0.490 | 0.780 | | |
| ITC | 0.338 | 0.370 | 0.322 | 0.413 | 0.508 | 0.809 | |
| IC | 0.406 | 0.431 | 0.349 | 0.422 | 0.518 | 0.392 | 0.750 |

Note: The numbers on the diagonal represent the square root of AVE.

Note: TI=Technology, Innovation, CD=Curriculum Design, AM=Admission, SS=Student Services, TL=Tuition Miscellaneous Fees & Living Expenses, ITC=International competitiveness, IC=Internal competitiveness

4.2.4.1 Analysis of Discriminant Validity

For the factor "Technology Innovation," its square root of AVE is 0.780, more significant than the maximum absolute value of inter-factor correlation coefficients (0.518). This suggests that it exhibits excellent discriminant validity.

For "Curriculum Design," the square root of AVE is 0.782, exceeding the maximum absolute value of inter-factor correlation coefficients (0.513). This indicates strong discriminant validity.

Regarding "Admission," the square root of AVE is 0.802, higher than the maximum absolute inter-factor correlation coefficient (0.515), indicating robust discriminant validity.

For "Student Services," the square root of AVE is 0.822, surpassing the maximum absolute value of inter-factor correlation coefficients (0.513), signifying excellent discriminant validity.

"Tuition Miscellaneous Fees & Living Expenses" has a square root of AVE equal to 0.832, more significant than the maximum absolute inter-factor correlation coefficient of 0.498, demonstrating discriminant solid validity.

"International Competitiveness" has a square root of AVE of 0.809, higher than the maximum absolute inter-factor correlation coefficient of 0.508, indicating sound discriminant validity.

For "Internal Competitiveness," the square root of AVE is 0.750, exceeding the maximum absolute value of inter-factor correlation coefficients (0.518), demonstrating good discriminant validity.

4.2.5 Structural Equation Model

Based on the results above, seven latent variables correspond to 85 observed variables: Technology Innovation, Curriculum Design, Admission, Student Services, Tuition Miscellaneous Fees and living Expenses, International Competitiveness, and Internal Competitiveness. The data collected through the questionnaire was imported into the AMOS 26.0 software, and the model parameters were estimated using the maximum likelihood method, as depicted in the diagram.

Before conducting path analysis, it is essential to analyze the model's

goodness of fit. The table indicates that the CMIN/DF value is 1.076, less than 3. The RMSEA value is 0.010, below the threshold of 0.08. The NFI and CFI are more significant than 0.9, signifying that the model fits well.

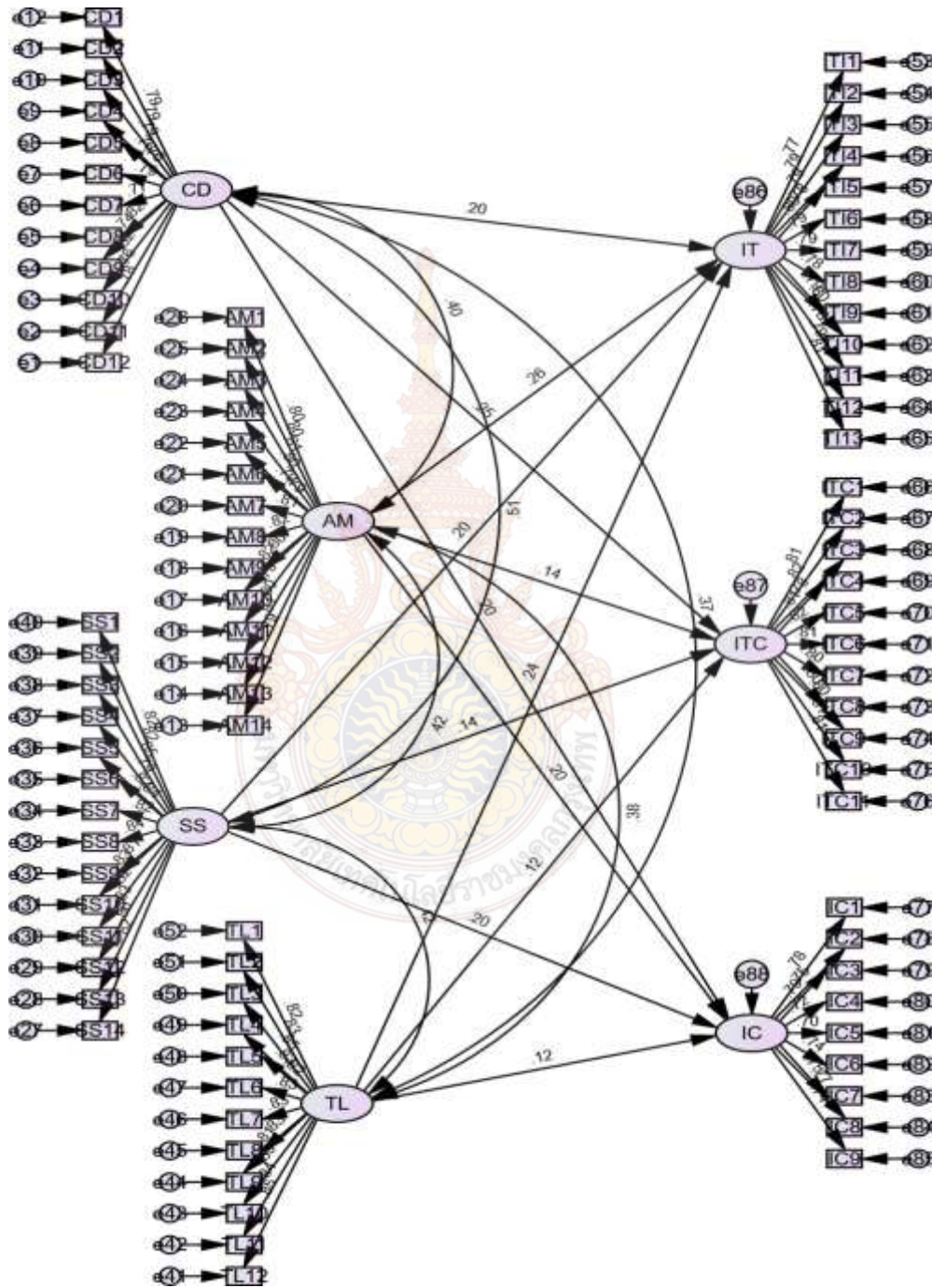


Figure 4.2 Structural Equation Model

Table 4.17 Model Fitting for the Validated Factor Analysis

| Model Fitting | χ^2 | <i>df</i> | <i>p</i> | χ^2/df | GFI | RMSEA | RMR | CFI | NFI | AGFI |
|-------------------|----------|-----------|----------|-------------|-------|-------|-------|-------|-------|-------|
| Recommended Value | - | - | >0.05 | <3 | >0.9 | <0.08 | <0.05 | >0.9 | >0.9 | >0.9 |
| Fitting Results | 3728.983 | 3467 | 0.001 | 1.076 | 0.894 | 0.01 | 0.046 | 0.995 | 0.929 | 0.888 |

| | Path | Estimated value | S.E. | C.R. | P | Standardized factor loadings |
|------|---------|-----------------|-------|--------|-------|------------------------------|
| IC | <--- CD | 0.208 | 0.044 | 4.664 | *** | 0.2 |
| TI | <--- CD | 0.206 | 0.039 | 5.254 | *** | 0.197 |
| ITC | <--- CD | 0.284 | 0.05 | 5.645 | *** | 0.247 |
| TI | <--- AM | 0.241 | 0.033 | 7.282 | *** | 0.263 |
| ITC | <--- AM | 0.141 | 0.041 | 3.442 | *** | 0.139 |
| IC | <--- AM | 0.183 | 0.037 | 4.984 | *** | 0.202 |
| TI | <--- SS | 0.178 | 0.034 | 5.278 | *** | 0.2 |
| ITC | <--- SS | 0.133 | 0.042 | 3.14 | 0.002 | 0.137 |
| IC | <--- SS | 0.173 | 0.038 | 4.528 | *** | 0.197 |
| TI | <--- TL | 0.201 | 0.029 | 6.853 | *** | 0.242 |
| ITC | <--- TL | 0.112 | 0.036 | 3.064 | 0.002 | 0.123 |
| IC | <--- TL | 0.096 | 0.033 | 2.956 | 0.003 | 0.117 |
| CD12 | <--- CD | 1 | | | | 0.783 |
| CD11 | <--- CD | 1.011 | 0.045 | 22.398 | *** | 0.763 |
| CD10 | <--- CD | 1.037 | 0.043 | 24.397 | *** | 0.816 |
| CD9 | <--- CD | 0.992 | 0.046 | 21.53 | *** | 0.739 |
| CD8 | <--- CD | 1.033 | 0.042 | 24.69 | *** | 0.823 |
| CD7 | <--- CD | 1.005 | 0.044 | 22.65 | *** | 0.77 |
| CD6 | <--- CD | 1.013 | 0.043 | 23.486 | *** | 0.792 |
| CD5 | <--- CD | 1.025 | 0.046 | 22.347 | *** | 0.762 |
| CD4 | <--- CD | 1.039 | 0.046 | 22.411 | *** | 0.764 |
| CD3 | <--- CD | 0.972 | 0.041 | 23.43 | *** | 0.791 |
| CD2 | <--- CD | 1.064 | 0.046 | 23.235 | *** | 0.786 |
| CD1 | <--- CD | 0.998 | 0.042 | 23.487 | *** | 0.792 |
| AM14 | <--- AM | 1 | | | | 0.786 |
| AM13 | <--- AM | 0.979 | 0.04 | 24.324 | *** | 0.805 |
| AM12 | <--- AM | 0.975 | 0.04 | 24.162 | *** | 0.801 |
| AM11 | <--- AM | 0.982 | 0.041 | 23.846 | *** | 0.793 |
| AM10 | <--- AM | 1.006 | 0.04 | 24.905 | *** | 0.82 |
| AM9 | <--- AM | 1.008 | 0.042 | 24.054 | *** | 0.798 |
| AM8 | <--- AM | 0.996 | 0.04 | 24.969 | *** | 0.821 |
| AM7 | <--- AM | 1.015 | 0.041 | 24.601 | *** | 0.812 |
| AM6 | <--- AM | 0.971 | 0.041 | 23.797 | *** | 0.792 |

Table 4.17 Model Fitting for the Validated Factor Analysis (continued)

| Path | Estimated value | S.E. | C.R. | P | Standardized factor loadings | Path | Estimated value |
|------|-----------------|------|-------|-------|------------------------------|------|-----------------|
| AM5 | <--- | AM | 1.002 | 0.042 | 23.877 | *** | 0.794 |
| AM4 | <--- | AM | 1.014 | 0.042 | 23.938 | *** | 0.795 |
| AM3 | <--- | AM | 0.979 | 0.04 | 24.591 | *** | 0.812 |
| AM2 | <--- | AM | 1.01 | 0.042 | 24.247 | *** | 0.803 |
| AM1 | <--- | AM | 0.972 | 0.04 | 24.287 | *** | 0.804 |
| SS14 | <--- | SS | 1 | | | | 0.825 |
| SS13 | <--- | SS | 0.915 | 0.035 | 25.97 | *** | 0.802 |
| SS12 | <--- | SS | 0.952 | 0.035 | 27.245 | *** | 0.828 |
| SS11 | <--- | SS | 0.979 | 0.036 | 27.064 | *** | 0.824 |
| SS10 | <--- | SS | 0.907 | 0.033 | 27.199 | *** | 0.827 |
| SS9 | <--- | SS | 0.952 | 0.036 | 26.373 | *** | 0.811 |
| SS8 | <--- | SS | 0.937 | 0.034 | 27.85 | *** | 0.84 |
| SS7 | <--- | SS | 0.952 | 0.036 | 26.594 | *** | 0.815 |
| SS6 | <--- | SS | 0.931 | 0.034 | 27.626 | *** | 0.835 |
| SS5 | <--- | SS | 0.981 | 0.037 | 26.628 | *** | 0.816 |
| SS4 | <--- | SS | 0.968 | 0.038 | 25.593 | *** | 0.795 |
| SS3 | <--- | SS | 0.918 | 0.032 | 28.463 | *** | 0.851 |
| SS2 | <--- | SS | 0.961 | 0.036 | 26.622 | *** | 0.816 |
| SS1 | <--- | SS | 0.911 | 0.034 | 26.77 | *** | 0.819 |
| TL12 | <--- | TL | 1 | | | | 0.849 |
| TL11 | <--- | TL | 0.988 | 0.034 | 29.172 | *** | 0.839 |
| TL10 | <--- | TL | 0.979 | 0.033 | 29.689 | *** | 0.848 |
| TL9 | <--- | TL | 0.961 | 0.035 | 27.232 | *** | 0.806 |
| TL8 | <--- | TL | 0.965 | 0.033 | 28.879 | *** | 0.834 |
| TL7 | <--- | TL | 0.988 | 0.034 | 28.906 | *** | 0.835 |
| TL6 | <--- | TL | 0.958 | 0.034 | 28.58 | *** | 0.829 |
| TL5 | <--- | TL | 0.983 | 0.035 | 28.011 | *** | 0.82 |
| TL4 | <--- | TL | 0.998 | 0.035 | 28.639 | *** | 0.83 |
| TL3 | <--- | TL | 0.988 | 0.033 | 29.96 | *** | 0.852 |
| TL2 | <--- | TL | 0.967 | 0.034 | 28.516 | *** | 0.828 |
| TL1 | <--- | TL | 0.946 | 0.034 | 27.989 | *** | 0.819 |
| TI1 | <--- | TI | 1 | | | | 0.774 |
| TI2 | <--- | TI | 1.033 | 0.045 | 23.131 | *** | 0.79 |
| TI3 | <--- | TI | 1.047 | 0.045 | 23.218 | *** | 0.792 |
| TI4 | <--- | TI | 1.066 | 0.047 | 22.918 | *** | 0.784 |
| TI5 | <--- | TI | 0.998 | 0.042 | 23.497 | *** | 0.799 |
| TI6 | <--- | TI | 1.006 | 0.044 | 23.051 | *** | 0.787 |
| TI7 | <--- | TI | 1.038 | 0.045 | 23.263 | *** | 0.793 |
| TI8 | <--- | TI | 1.056 | 0.046 | 22.895 | *** | 0.783 |

Table 4.17 Model Fitting for the Validated Factor Analysis (continued)

| Path | Estimated value | S.E. | C.R. | P | Standardized factor loadings | Path | Estimated value |
|-------|-----------------|------|-------|-------|------------------------------|------|-----------------|
| TI9 | <--- | TI | 1.045 | 0.045 | 23.056 | *** | 0.787 |
| TI10 | <--- | TI | 1.043 | 0.044 | 23.46 | *** | 0.798 |
| TI11 | <--- | TI | 1.052 | 0.046 | 22.806 | *** | 0.781 |
| TI12 | <--- | TI | 1.029 | 0.044 | 23.324 | *** | 0.795 |
| TI13 | <--- | TI | 1.022 | 0.043 | 23.808 | *** | 0.808 |
| ITC1 | <--- | ITC | 1 | | | | 0.81 |
| ITC2 | <--- | ITC | 1.001 | 0.038 | 26.015 | *** | 0.823 |
| ITC3 | <--- | ITC | 0.977 | 0.04 | 24.31 | *** | 0.785 |
| ITC4 | <--- | ITC | 1.032 | 0.04 | 25.608 | *** | 0.814 |
| ITC5 | <--- | ITC | 1 | 0.038 | 26.057 | *** | 0.824 |
| ITC6 | <--- | ITC | 0.998 | 0.039 | 25.32 | *** | 0.808 |
| ITC7 | <--- | ITC | 1.022 | 0.041 | 25.084 | *** | 0.802 |
| ITC8 | <--- | ITC | 1.033 | 0.041 | 25.172 | *** | 0.804 |
| ITC9 | <--- | ITC | 1.011 | 0.04 | 25.187 | *** | 0.805 |
| ITC10 | <--- | ITC | 1.017 | 0.04 | 25.297 | *** | 0.807 |
| ITC11 | <--- | ITC | 0.989 | 0.039 | 25.646 | *** | 0.815 |
| IC1 | <--- | IC | 1 | | | | 0.785 |
| IC2 | <--- | IC | 1.003 | 0.047 | 21.53 | *** | 0.751 |
| IC3 | <--- | IC | 0.969 | 0.042 | 22.971 | *** | 0.791 |
| IC4 | <--- | IC | 0.976 | 0.048 | 20.537 | *** | 0.723 |
| IC5 | <--- | IC | 0.931 | 0.047 | 19.649 | *** | 0.697 |
| IC6 | <--- | IC | 0.943 | 0.044 | 21.293 | *** | 0.744 |
| IC7 | <--- | IC | 0.972 | 0.045 | 21.413 | *** | 0.748 |
| IC8 | <--- | IC | 0.954 | 0.043 | 22.067 | *** | 0.766 |

*** p<0.001

Note:TI=Technology,Innovation, CD=Curriculum Design, AM=Admission, SS=Student Services, TL=Tuition Miscellaneous Fees & Living Expenses, ITC=International Competitiveness , IC=Internal Competitiveness

Based on the fit indices from the table, it is evident that the model fit indices are generally satisfactory. Therefore, we can proceed with the path analysis and hypothesis testing between variables.

The standardized path coefficients and their significance levels for various relationships in the model are as follows:

Curriculum Design has a standardized path coefficient of 0.197 (C.R. = 5.254,

$p \leq 0.05$) with Technology Innovation, indicating a significant favorable influence of Curriculum Design on Technology Innovation.

Admission has a standardized path coefficient of 0.263 (C.R. = 7.282, $p \leq 0.05$) with Technology Innovation, revealing a significant positive impact of Admission on Technology Innovation.

Student Services has a standardized path coefficient of 0.200 (C.R. = 5.278, $p \leq 0.05$) with Technology Innovation, signifying a significant favorable influence of Student Services on Technology Innovation.

Tuition Miscellaneous Fees and Living Expenses exhibit a standardized path coefficient of 0.242 (C.R. = 6.853, $p \leq 0.05$) with Technology Innovation, demonstrating a significant positive impact of Tuition Miscellaneous Fees and Living Expenses on Technology Innovation.

Curriculum Design has a standardized path coefficient of 0.247 (C.R. = 5.645, $p \leq 0.05$) with International Competitiveness, indicating a significant favorable influence of Curriculum Design on International Competitiveness.

Admission has a standardized path coefficient of 0.139 (C.R. = 3.442, $p \leq 0.05$) with International Competitiveness, revealing a significant positive impact of Admission on International Competitiveness.

Student Services has a standardized path coefficient of 0.137 (C.R. = 3.140, $p \leq 0.05$) with International Competitiveness, signifying a significant favorable influence of Student Services on International Competitiveness.

Tuition Miscellaneous Fees and Living Expenses exhibit a standardized path coefficient of 0.123 (C.R. = 3.064, $p \leq 0.05$) with International Competitiveness, demonstrating a significant positive impact of Tuition Miscellaneous Fees and Living Expenses on International Competitiveness.

Curriculum Design has a standardized path coefficient of 0.200 (C.R. = 4.664, $p \leq 0.05$) with Internal Competitiveness, indicating a significant favorable influence of Curriculum Design on Internal Competitiveness.

Admission has a standardized path coefficient of 0.202 (C.R. = 4.984, $p \leq 0.05$) with Internal Competitiveness, revealing a significant positive impact of Admission

on Internal Competitiveness.

Student Services has a standardized path coefficient of 0.197 (C.R. = 4.528, $p \leq 0.05$) with Internal Competitiveness, signifying a significant favorable influence of Student Services on Internal Competitiveness.

Tuition Miscellaneous Fees and Living Expenses exhibit a standardized path coefficient of 0.117 (C.R. = 2.956, $p \leq 0.05$) with Internal Competitiveness, demonstrating a significant positive impact of Tuition Miscellaneous Fees and Living Expenses on Internal Competitiveness.

4.3 Reliability Analysis

The reliability of internal consistency reflects the degree of relevance of each item in the questionnaire. Cronbach's α coefficient usually measures the reliability of internal consistency. Cronbach's α coefficient is between 0 and 1, the larger the α coefficient is. The better the correlation between the questionnaire items, the higher the internal consistency's reliability. Generally, an alpha coefficient greater than 0.8 indicates excellent internal consistency, 0.7 to 0.8 indicates good internal consistency, and an alpha coefficient of 0.6 to 0.7 indicates fair and acceptable internal consistency. The questionnaire should be modified if the internal consistency is lower than 0.6.

4.3.1 Technology Innovation

Table 4.18 Reliability of Technology Innovation

| Name | Total correlation of correction items (CITC) | The Alpha Coefficient of the deleted entry | Cronbach alpha coefficient |
|------|--|--|----------------------------|
| TI1 | 0.757 | 0.952 | |
| TI2 | 0.770 | 0.952 | |
| TI3 | 0.772 | 0.952 | |
| TI4 | 0.765 | 0.952 | |

Table 4.18 Reliability of Technology Innovation (continued)

| Name | Total correlation of correction items (CITC) | The Alpha Coefficient of the deleted entry | |
|------|--|--|-------|
| TI5 | 0.780 | 0.952 | 0.956 |
| TI6 | 0.766 | 0.952 | |
| TI7 | 0.776 | 0.952 | |
| TI8 | 0.764 | 0.952 | |
| TI9 | 0.769 | 0.952 | |
| TI10 | 0.778 | 0.952 | |
| TI11 | 0.763 | 0.952 | |
| TI12 | 0.775 | 0.952 | |
| TI13 | 0.788 | 0.952 | |

As can be seen from the above table: Technology Innovation The reliability coefficient is 0.956. For “Item deleted alpha coefficient,” the reliability coefficients of the deleted items are all less than the overall 0.956; for “CITC value” the CITC values of the analyzed items were all greater than 0.4, the results show that there is a good correlation between the analysis items and the reliability level is good. To sum up, the reliability coefficient of the study data is 0.956, which synthetically describes the reliability quality of the data as excellent.

4.3.2 Curriculum Design

Table 4.19 Reliability of Curriculum Design

| Name | Total correlation of correction items (CITC) | The Alpha Coefficient of the deleted entry | Cronbach alpha coefficient |
|------|--|--|----------------------------|
| CD1 | 0.771 | 0.945 | |
| CD2 | 0.763 | 0.945 | |
| CD3 | 0.768 | 0.945 | |
| CD4 | 0.746 | 0.946 | |

Table 4.19 Reliability of Curriculum Design (continued)

| Name | Total correlation of correction items (CITC) | The Alpha Coefficient of the deleted entry | |
|------|--|--|-------|
| CD5 | 0.742 | 0.946 | |
| CD6 | 0.772 | 0.945 | 0.949 |
| CD7 | 0.750 | 0.945 | |
| CD8 | 0.796 | 0.944 | |
| CD9 | 0.720 | 0.946 | |
| CD10 | 0.791 | 0.944 | |
| CD11 | 0.742 | 0.946 | |
| CD12 | 0.760 | 0.945 | |

As can be seen from the above table: Curriculum Design The reliability coefficient is 0.949. For “Item deleted alpha coefficient,” the reliability coefficients of the deleted items are all less than the overall 0.949; for “CITC value,” The CITC values of the analyzed items were all greater than 0.4, and the results show that there is a good correlation between the analysis items and the reliability level is good. To sum up, the reliability coefficient of the study data is 0.949, which synthetically describes the reliability quality of the data as excellent.

4.3.3 Admission

Table 4.20 Reliability of Admission

| Name | Total correlation of correction items (CITC) | The Alpha Coefficient of the deleted entry | Cronbach alpha coefficient |
|------|--|--|----------------------------|
| AM1 | 0.787 | 0.959 | |
| AM2 | 0.789 | 0.959 | |
| AM3 | 0.795 | 0.959 | |
| AM4 | 0.779 | 0.959 | |
| AM5 | 0.777 | 0.959 | |
| AM6 | 0.776 | 0.959 | |
| AM7 | 0.797 | 0.959 | |
| AM8 | 0.803 | 0.959 | 0.962 |
| AM9 | 0.781 | 0.959 | |
| AM10 | 0.802 | 0.959 | |
| AM11 | 0.777 | 0.959 | |
| AM12 | 0.785 | 0.959 | |
| AM13 | 0.789 | 0.959 | |
| AM14 | 0.771 | 0.960 | |

As can be seen from the above table: Admission The reliability coefficient is 0.962. For “Item deleted alpha coefficient,” the reliability coefficients of the deleted items are all less than the overall 0.962; for “CITC value,” the CITC values of the analyzed items were all greater than 0.4, and the results show that there is a good correlation between the analysis items and the reliability level is good. To sum up, the reliability coefficient of the study data is 0.962, which synthetically describes the reliability quality of the data as excellent.

4.3.4 Student Services

Table 4.21 Reliability of Student Services

| Name | Total correlation of correction items (CITC) | The Alpha | |
|------|--|----------------------------------|----------------------------|
| | | Coefficient of the deleted entry | Cronbach alpha coefficient |
| SS1 | 0.803 | 0.964 | |
| SS2 | 0.801 | 0.964 | |
| SS3 | 0.835 | 0.964 | |
| SS4 | 0.780 | 0.965 | |
| SS5 | 0.802 | 0.964 | |
| SS6 | 0.819 | 0.964 | |
| SS7 | 0.800 | 0.964 | |
| SS8 | 0.825 | 0.964 | 0.967 |
| SS9 | 0.797 | 0.964 | |
| SS10 | 0.813 | 0.964 | |
| SS11 | 0.807 | 0.964 | |
| SS12 | 0.813 | 0.964 | |
| SS13 | 0.788 | 0.964 | |
| SS14 | 0.810 | 0.964 | |

As can be seen from the above table: Student Services The reliability coefficient is 0.967. For “Item deleted alpha coefficient,” the reliability coefficients of the deleted items are all less than the overall 0.967; for “CITC value” " the CITC values of the analyzed items were all greater than 0.4, the results show that there is a good correlation between the analysis items and the reliability level is good. To sum up, the reliability coefficient of the study data is 0.967, which synthetically describes the reliability quality of the data as excellent.

4.3.5 Tuition Miscellaneous Fees & Living Expenses

Table 4.22 Reliability of Tuition Miscellaneous Fees and Living Expenses

| Name | Total correlation of correction items (CITC) | The Alpha Coefficient of the deleted entry | Cronbach alpha coefficient |
|------|--|--|----------------------------|
| TL1 | 0.803 | 0.962 | |
| TL2 | 0.812 | 0.961 | |
| TL3 | 0.835 | 0.961 | |
| TL4 | 0.814 | 0.961 | |
| TL5 | 0.803 | 0.962 | |
| TL6 | 0.814 | 0.961 | 0.964 |
| TL7 | 0.819 | 0.961 | |
| TL8 | 0.818 | 0.961 | |
| TL9 | 0.791 | 0.962 | |
| TL10 | 0.832 | 0.961 | |
| TL11 | 0.822 | 0.961 | |
| TL12 | 0.832 | 0.961 | |

As can be seen from the above table: Tuition Miscellaneous Fees and Living Expenses, the reliability coefficient is 0.964. For “Item deleted alpha coefficient,” the reliability coefficients of the deleted items are all less than the overall 0.964; for “CITC value” " the CITC values of the analyzed items were all greater than 0.4, the results show

that there is a good correlation between the analysis items and the reliability level is good. To sum up, the reliability coefficient of the study data is 0.964, which synthetically describes the reliability quality of the data as excellent.

4.3.6 International Competitiveness

Table 4.23 Reliability of International Competitiveness

| Name | Total correlation of correction items (CITC) | The Alpha Coefficient of the deleted entry | Cronbach alpha coefficient |
|-------|--|--|----------------------------|
| ITC1 | 0.788 | 0.950 | |
| ITC2 | 0.802 | 0.949 | |
| ITC3 | 0.766 | 0.950 | |
| ITC4 | 0.792 | 0.950 | |
| ITC5 | 0.801 | 0.949 | |
| ITC6 | 0.788 | 0.950 | 0.954 |
| ITC7 | 0.783 | 0.950 | |
| ITC8 | 0.784 | 0.950 | |
| ITC9 | 0.784 | 0.950 | |
| ITC10 | 0.787 | 0.950 | |
| ITC11 | 0.793 | 0.949 | |

As can be seen from the above table: International competitiveness The reliability coefficient is 0.954. For “Item deleted alpha coefficient,” the reliability coefficients of the deleted items are all less than the overall 0.954; for “CITC value” the CITC values of the analyzed items were all greater than 0.4, the results show that there is a good correlation between the analysis items and the reliability level is good. To sum up, the reliability coefficient of the study data is 0.954, which synthetically describes the reliability quality of the data as excellent.

4.3.7 Internal Competitiveness

Table 4.24 Reliability of Internal Competitiveness

| Name | Total correlation of correction items (CITC) | The Alpha Coefficient of the deleted entry | Cronbach alpha coefficient |
|------|--|--|----------------------------|
| IC1 | 0.747 | 0.908 | |
| IC2 | 0.717 | 0.910 | 0.920 |
| IC3 | 0.751 | 0.908 | |
| IC4 | 0.693 | 0.912 | |
| IC5 | 0.668 | 0.914 | |
| IC6 | 0.708 | 0.911 | |
| IC7 | 0.715 | 0.910 | |
| IC8 | 0.730 | 0.909 | |
| IC9 | 0.705 | 0.911 | |

The reliability coefficient is 0.920. For “Item deleted alpha coefficient,” the reliability coefficients of the deleted items are all less than the overall 0.92; for “CITC value” the CITC values of the analyzed items were all greater than 0.4, the results show that there is a good correlation between the analysis items and the reliability level is good. To sum up, the reliability coefficient of the study data is 0.920, which synthetically describes the reliability quality of the data as excellent.

4.3.8 Reliability Statistics

Table 4.25 Reliability Statistics

| | Cronbach Alpha | Number of items |
|--|----------------|-----------------|
| Technology Innovation | 0.956 | 13 |
| Curriculum Design | 0.949 | 12 |
| Admission | 0.962 | 14 |
| Student Services | 0.967 | 14 |
| Tuition Miscellaneous Fees & Living Expenses | 0.964 | 12 |
| International competitiveness | 0.954 | 11 |
| Internal competitiveness | 0.920 | 9 |

4.3.9 Simplified Format for Reliability

Table 4.26 Simplified Format for Reliability

| Simplified format for reliability | | | |
|-----------------------------------|-------------------------|-------------|--------|
| | Cronbach alpha of items | Sample size | number |
| | 0.976 | 718 | 85 |

Based on the overall reliability coefficient, the standardized reliability coefficient is 0.976, indicating that the overall reliability of the questionnaire is excellent.

4.4 Validity Analysis

Validity refers to the degree to which the measured results reflect the content to be examined. The more consistent the measured results are with the content to be examined, the higher the validity; conversely, the lower the validity. The validity test needs to look at the significance of the KMO coefficient and the Bartlett spherical test, where the KMO coefficient ranges from 0 to 1. The closer the KMO coefficient is to 1, the better the structural validity of the questionnaire is; if the significance of Bartlett's spherical test is less than 0.05, we can also consider the questionnaire to have good structural validity.

Table 4.27 KMO and Bartlett Test

| KMO and Bartlett Test | | |
|---------------------------|-----------------------------------|-----------|
| | KMO Sampling suitability quantity | 0.981 |
| | Approximately chi-squared | 50271.367 |
| Bartlett, sphericity test | freedom | 3570.000 |
| | p-value | 0.000 |

Validity was verified using the KMO and Bartlett tests, which yielded a coefficient of 0.981 and a chi-square value of 50271.367(SIG. = 0.000(0.01) for the Bartlett test, describing the questionnaire's overall validity as excellent.

Table 4.28 Explanation Rate of Variance Table

| Factor number | Total | Explanation rate of variance% | Accumulation % | Total | Explanation rate of variance % | Accumulation % | Total | Explanation rate of variance % | Accumulation % |
|---------------|--------|-------------------------------|----------------|--------|--------------------------------|----------------|-------|--------------------------------|----------------|
| 1 | 28.515 | 33.547 | 33.547 | 28.515 | 33.547 | 33.547 | 9.798 | 11.527 | 11.527 |
| 2 | 5.985 | 7.041 | 40.588 | 5.985 | 7.041 | 40.588 | 9.619 | 11.316 | 22.843 |
| 3 | 5.775 | 6.794 | 47.382 | 5.775 | 6.794 | 47.382 | 8.746 | 10.290 | 33.133 |
| 4 | 5.598 | 6.586 | 53.968 | 5.598 | 6.586 | 53.968 | 8.029 | 9.446 | 42.579 |
| 5 | 4.255 | 5.006 | 58.974 | 4.255 | 5.006 | 58.974 | 7.822 | 9.202 | 51.781 |
| 6 | 3.840 | 4.517 | 63.491 | 3.840 | 4.517 | 63.491 | 7.698 | 9.056 | 60.837 |
| 7 | 3.312 | 3.896 | 67.388 | 3.312 | 3.896 | 67.388 | 5.568 | 6.551 | 67.388 |
| 8 | 0.650 | 0.765 | 68.153 | | | | | | |
| 9 | 0.619 | 0.729 | 68.882 | | | | | | |
| 10 | 0.600 | 0.706 | 69.588 | | | | | | |
| 11 | 0.595 | 0.700 | 70.289 | | | | | | |
| 12 | 0.582 | 0.685 | 70.973 | | | | | | |
| 13 | 0.564 | 0.664 | 71.637 | | | | | | |
| 14 | 0.562 | 0.661 | 72.298 | | | | | | |
| 15 | 0.545 | 0.641 | 72.940 | | | | | | |
| 16 | 0.536 | 0.631 | 73.570 | | | | | | |
| 17 | 0.527 | 0.620 | 74.191 | | | | | | |
| 18 | 0.519 | 0.611 | 74.801 | | | | | | |
| 19 | 0.510 | 0.600 | 75.401 | | | | | | |
| 20 | 0.505 | 0.594 | 75.996 | | | | | | |
| 21 | 0.486 | 0.572 | 76.568 | | | | | | |
| 22 | 0.478 | 0.563 | 77.131 | | | | | | |
| 23 | 0.474 | 0.558 | 77.688 | | | | | | |
| 24 | 0.465 | 0.547 | 78.236 | | | | | | |
| 25 | 0.460 | 0.541 | 78.777 | | | | | | |

| Factor number | Total | Explanation rate of variance% | Factor number |
|---------------|-------|-------------------------------|---------------|
| 26 | 0.453 | 0.532 | 79.309 |
| 27 | 0.443 | 0.521 | 79.830 |
| 28 | 0.442 | 0.520 | 80.351 |
| 29 | 0.437 | 0.514 | 80.865 |
| 30 | 0.431 | 0.506 | 81.371 |
| 31 | 0.427 | 0.503 | 81.874 |
| 32 | 0.419 | 0.492 | 82.366 |
| 33 | 0.414 | 0.487 | 82.853 |
| 34 | 0.403 | 0.474 | 83.327 |
| 35 | 0.399 | 0.470 | 83.797 |
| 36 | 0.394 | 0.463 | 84.260 |
| 37 | 0.387 | 0.455 | 84.715 |
| 38 | 0.377 | 0.444 | 85.159 |
| 39 | 0.374 | 0.439 | 85.598 |
| 40 | 0.371 | 0.436 | 86.035 |
| 41 | 0.363 | 0.427 | 86.462 |
| 42 | 0.360 | 0.423 | 86.885 |
| 43 | 0.354 | 0.417 | 87.302 |
| 44 | 0.353 | 0.415 | 87.717 |
| 45 | 0.344 | 0.405 | 88.122 |
| 46 | 0.342 | 0.402 | 88.524 |
| 47 | 0.336 | 0.396 | 88.920 |
| 48 | 0.329 | 0.387 | 89.306 |
| 49 | 0.322 | 0.379 | 89.685 |
| 50 | 0.320 | 0.376 | 90.061 |
| 51 | 0.312 | 0.367 | 90.428 |
| 52 | 0.311 | 0.366 | 90.794 |
| 53 | 0.305 | 0.359 | 91.153 |
| 54 | 0.300 | 0.353 | 91.506 |
| 55 | 0.299 | 0.351 | 91.857 |

| Factor number | Total | Explanation rate of variance% | Factor number |
|----------------------|--------------|--------------------------------------|----------------------|
| 56 | 0.294 | 0.346 | 92.203 |
| 57 | 0.293 | 0.344 | 92.548 |
| 58 | 0.289 | 0.340 | 92.888 |
| 59 | 0.281 | 0.331 | 93.219 |
| 60 | 0.276 | 0.325 | 93.544 |
| 61 | 0.272 | 0.319 | 93.863 |
| 62 | 0.267 | 0.314 | 94.177 |
| 63 | 0.264 | 0.311 | 94.488 |
| 64 | 0.259 | 0.305 | 94.792 |
| 65 | 0.254 | 0.298 | 95.091 |
| 66 | 0.252 | 0.297 | 95.387 |
| 67 | 0.245 | 0.288 | 95.675 |
| 68 | 0.235 | 0.277 | 95.952 |
| 69 | 0.235 | 0.277 | 96.229 |
| 70 | 0.230 | 0.271 | 96.500 |
| 71 | 0.228 | 0.268 | 96.768 |
| 72 | 0.222 | 0.261 | 97.029 |
| 73 | 0.219 | 0.258 | 97.286 |
| 74 | 0.215 | 0.253 | 97.539 |
| 75 | 0.211 | 0.248 | 97.788 |
| 76 | 0.207 | 0.244 | 98.032 |
| 77 | 0.206 | 0.243 | 98.274 |
| 78 | 0.204 | 0.240 | 98.514 |
| 79 | 0.196 | 0.230 | 98.745 |
| 80 | 0.194 | 0.228 | 98.973 |
| 81 | 0.187 | 0.220 | 99.193 |

| Factor number | Total | Explanation rate of variance% | Factor number |
|---------------|-------|-------------------------------|---------------|
| 82 | 0.180 | 0.211 | 99.404 |
| 83 | 0.174 | 0.204 | 99.609 |
| 84 | 0.167 | 0.196 | 99.805 |
| 85 | 0.166 | 0.195 | 100.000 |

Extraction Method: Principal Component Analysis

According to the analysis of the factor extraction and the information amount of factor extraction, the above table shows that the factor analysis extracts 7 counts, and the feature root values are all greater than 1; the variance interpretation rate of this 7 factor is 11.527%, 11.316%, 10.290%, 9.446%, 9.202%, 9.056%, 6.551%. The interpretation rate of cumulative variance after rotation is 67.388%.

Table 4.29 Rotated Loading Table

| Name | Factor Load Coefficient | | | | | | | Commonality (common factor variance) |
|------|-------------------------|---------|---------|--------------|---------|---------|---------|---|
| | factor1 | factor2 | factor3 | factor4 | factor5 | factor6 | factor7 | |
| TI1 | 0.147 | 0.156 | 0.176 | 0.699 | 0.117 | 0.191 | 0.136 | 0.635 |
| TI2 | 0.191 | 0.156 | 0.154 | 0.692 | 0.150 | 0.205 | 0.161 | 0.653 |
| TI3 | 0.174 | 0.189 | 0.158 | 0.694 | 0.164 | 0.151 | 0.187 | 0.657 |
| TI4 | 0.151 | 0.204 | 0.157 | 0.701 | 0.127 | 0.146 | 0.168 | 0.647 |
| TI5 | 0.174 | 0.165 | 0.170 | 0.716 | 0.169 | 0.137 | 0.142 | 0.667 |
| TI6 | 0.172 | 0.221 | 0.160 | 0.692 | 0.167 | 0.172 | 0.094 | 0.650 |
| TI7 | 0.128 | 0.154 | 0.170 | 0.725 | 0.122 | 0.183 | 0.154 | 0.666 |
| TI8 | 0.222 | 0.208 | 0.128 | 0.686 | 0.114 | 0.164 | 0.169 | 0.649 |
| TI9 | 0.146 | 0.180 | 0.205 | 0.714 | 0.121 | 0.149 | 0.114 | 0.655 |

Table 4.29 Rotated Loading Table (continued)

| Factor Load Coefficient | | | | | | | | |
|-------------------------|---------|--------------|---------|--------------|--------------|---------|-------------|---------|
| factor5 | factor6 | factor5 | factor6 | factor 5 | factor 6 | factor5 | factor 6 | factor5 |
| TI10 | 0.163 | 0.202 | 0.163 | 0.700 | 0.195 | 0.152 | 0.144 | 0.665 |
| TI11 | 0.132 | 0.166 | 0.192 | 0.709 | 0.109 | 0.182 | 0.130 | 0.646 |
| TI12 | 0.173 | 0.157 | 0.174 | 0.708 | 0.183 | 0.167 | 0.117 | 0.661 |
| TI13 | 0.181 | 0.202 | 0.171 | 0.718 | 0.125 | 0.177 | 0.119 | 0.679 |
| CD1 | 0.167 | 0.121 | 0.092 | 0.120 | 0.760 | 0.105 | 0.096 | 0.663 |
| CD2 | 0.172 | 0.093 | 0.104 | 0.151 | 0.745 | 0.112 | 0.108 | 0.651 |
| CD3 | 0.203 | 0.125 | 0.121 | 0.156 | 0.724 | 0.131 | 0.128 | 0.654 |
| CD4 | 0.139 | 0.163 | 0.046 | 0.110 | 0.743 | 0.116 | 0.080 | 0.633 |
| CD5 | 0.179 | 0.105 | 0.068 | 0.134 | 0.727 | 0.123 | 0.101 | 0.619 |
| CD6 | 0.161 | 0.092 | 0.114 | 0.093 | 0.771 | 0.120 | 0.071 | 0.669 |
| CD7 | 0.190 | 0.142 | 0.142 | 0.107 | 0.726 | 0.090 | 0.090 | 0.631 |
| CD8 | 0.165 | 0.147 | 0.147 | 0.162 | 0.747 | 0.173 | 0.116 | 0.698 |
| CD9 | 0.201 | 0.112 | 0.129 | 0.151 | 0.690 | 0.130 | 0.065 | 0.589 |
| CD10 | 0.187 | 0.152 | 0.121 | 0.143 | 0.753 | 0.133 | 0.105 | 0.689 |
| CD11 | 0.183 | 0.126 | 0.076 | 0.081 | 0.723 | 0.108 | 0.172 | 0.626 |
| CD12 | 0.154 | 0.116 | 0.113 | 0.158 | 0.737 | 0.124 | 0.111 | 0.646 |
| AM1 | 0.124 | 0.758 | 0.141 | 0.181 | 0.118 | 0.101 | 0.076 | 0.673 |
| AM2 | 0.134 | 0.786 | 0.091 | 0.111 | 0.096 | 0.066 | 0.085 | 0.677 |
| AM3 | 0.154 | 0.772 | 0.122 | 0.146 | 0.125 | 0.062 | 0.094 | 0.685 |
| AM4 | 0.104 | 0.764 | 0.118 | 0.111 | 0.105 | 0.125 | 0.129 | 0.663 |
| AM5 | 0.155 | 0.751 | 0.107 | 0.199 | 0.118 | 0.043 | 0.081 | 0.662 |
| AM6 | 0.137 | 0.760 | 0.135 | 0.132 | 0.112 | 0.082 | 0.069 | 0.656 |

Table 4.29 Rotated Loading Table (continued)

| Factor Load Coefficient | | | | | | | | |
|-------------------------|--------------|--------------|---------|---------|---------|---------|---------|---------|
| factor5 | factor5 | factor5 | factor5 | factor5 | factor5 | factor5 | factor5 | factor5 |
| AM7 | 0.117 | 0.786 | 0.085 | 0.116 | 0.162 | 0.060 | 0.096 | 0.692 |
| AM8 | 0.187 | 0.770 | 0.083 | 0.158 | 0.132 | 0.082 | 0.126 | 0.699 |
| AM9 | 0.123 | 0.754 | 0.133 | 0.119 | 0.139 | 0.097 | 0.149 | 0.666 |
| AM10 | 0.115 | 0.774 | 0.112 | 0.181 | 0.108 | 0.116 | 0.109 | 0.694 |
| AM11 | 0.097 | 0.761 | 0.145 | 0.148 | 0.095 | 0.096 | 0.088 | 0.658 |
| AM12 | 0.120 | 0.765 | 0.100 | 0.164 | 0.100 | 0.093 | 0.113 | 0.668 |
| AM13 | 0.076 | 0.787 | 0.093 | 0.151 | 0.061 | 0.114 | 0.096 | 0.683 |
| AM14 | 0.121 | 0.763 | 0.107 | 0.122 | 0.089 | 0.113 | 0.073 | 0.650 |
| SS1 | 0.770 | 0.147 | 0.118 | 0.121 | 0.185 | 0.073 | 0.119 | 0.696 |
| SS2 | 0.763 | 0.155 | 0.123 | 0.157 | 0.147 | 0.098 | 0.119 | 0.691 |
| SS3 | 0.786 | 0.160 | 0.151 | 0.126 | 0.178 | 0.119 | 0.117 | 0.742 |
| SS4 | 0.747 | 0.123 | 0.113 | 0.155 | 0.147 | 0.110 | 0.129 | 0.660 |
| SS5 | 0.772 | 0.113 | 0.156 | 0.128 | 0.175 | 0.088 | 0.075 | 0.694 |
| SS6 | 0.777 | 0.162 | 0.125 | 0.151 | 0.165 | 0.109 | 0.097 | 0.718 |
| SS7 | 0.751 | 0.170 | 0.132 | 0.130 | 0.172 | 0.154 | 0.106 | 0.691 |
| SS8 | 0.790 | 0.103 | 0.126 | 0.143 | 0.177 | 0.120 | 0.105 | 0.728 |
| SS9 | 0.775 | 0.097 | 0.137 | 0.135 | 0.163 | 0.063 | 0.104 | 0.689 |
| SS10 | 0.783 | 0.116 | 0.118 | 0.133 | 0.170 | 0.081 | 0.123 | 0.709 |
| SS11 | 0.748 | 0.135 | 0.166 | 0.207 | 0.144 | 0.152 | 0.114 | 0.705 |
| SS12 | 0.770 | 0.151 | 0.097 | 0.165 | 0.170 | 0.113 | 0.124 | 0.709 |
| SS13 | 0.752 | 0.142 | 0.177 | 0.115 | 0.180 | 0.071 | 0.082 | 0.675 |
| SS14 | 0.783 | 0.113 | 0.141 | 0.137 | 0.135 | 0.107 | 0.110 | 0.707 |

Table 4.29 Rotated Loading Table (continued)

| Factor Load Coefficient | | | | | | | | |
|-------------------------|---------|---------|--------------|---------|---------|---------|---------|---------|
| factor5 | factor5 | factor5 | factor5 | factor5 | factor5 | factor5 | factor5 | factor5 |
| TL1 | 0.164 | 0.117 | 0.787 | 0.146 | 0.079 | 0.092 | 0.064 | 0.700 |
| TL2 | 0.152 | 0.168 | 0.790 | 0.145 | 0.084 | 0.075 | 0.078 | 0.715 |
| TL3 | 0.143 | 0.160 | 0.806 | 0.133 | 0.103 | 0.108 | 0.117 | 0.749 |
| TL4 | 0.114 | 0.082 | 0.799 | 0.159 | 0.124 | 0.101 | 0.100 | 0.719 |
| TL5 | 0.142 | 0.112 | 0.778 | 0.193 | 0.090 | 0.090 | 0.096 | 0.701 |
| TL6 | 0.136 | 0.112 | 0.798 | 0.118 | 0.150 | 0.109 | 0.060 | 0.719 |
| TL7 | 0.109 | 0.105 | 0.807 | 0.142 | 0.128 | 0.101 | 0.071 | 0.726 |
| TL8 | 0.156 | 0.140 | 0.794 | 0.164 | 0.057 | 0.085 | 0.112 | 0.724 |
| TL9 | 0.114 | 0.106 | 0.784 | 0.148 | 0.105 | 0.084 | 0.062 | 0.683 |
| TL10 | 0.130 | 0.126 | 0.814 | 0.160 | 0.115 | 0.057 | 0.081 | 0.744 |
| TL11 | 0.169 | 0.133 | 0.792 | 0.165 | 0.123 | 0.079 | 0.075 | 0.728 |
| TL12 | 0.157 | 0.148 | 0.807 | 0.143 | 0.097 | 0.089 | 0.089 | 0.743 |

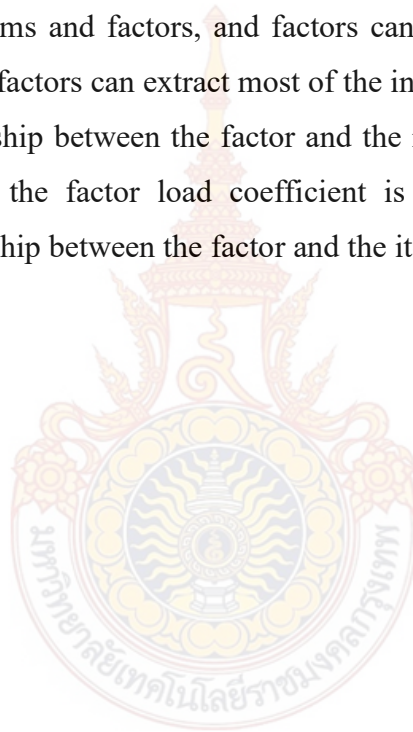
Table 4.29 Rotated Loading Table (continued)

| Factor Load Coefficient | | | | | | | | |
|-------------------------|---------|---------|---------|---------|---------|--------------|--------------|---------|
| factor5 | factor5 | factor5 | factor5 | factor5 | factor5 | factor5 | factor5 | factor5 |
| ITC1 | 0.097 | 0.136 | 0.106 | 0.156 | 0.146 | 0.768 | 0.110 | 0.687 |
| ITC2 | 0.073 | 0.109 | 0.081 | 0.154 | 0.128 | 0.798 | 0.090 | 0.709 |
| ITC3 | 0.117 | 0.062 | 0.072 | 0.166 | 0.096 | 0.770 | 0.076 | 0.659 |
| ITC4 | 0.124 | 0.125 | 0.091 | 0.161 | 0.133 | 0.772 | 0.112 | 0.691 |
| ITC5 | 0.105 | 0.076 | 0.124 | 0.179 | 0.174 | 0.773 | 0.128 | 0.708 |
| ITC6 | 0.111 | 0.084 | 0.095 | 0.125 | 0.098 | 0.789 | 0.111 | 0.689 |
| ITC7 | 0.098 | 0.100 | 0.042 | 0.146 | 0.144 | 0.780 | 0.099 | 0.681 |
| ITC8 | 0.138 | 0.112 | 0.093 | 0.144 | 0.127 | 0.773 | 0.078 | 0.681 |
| ITC9 | 0.130 | 0.087 | 0.101 | 0.133 | 0.128 | 0.775 | 0.103 | 0.681 |
| ITC10 | 0.139 | 0.106 | 0.104 | 0.161 | 0.050 | 0.780 | 0.113 | 0.691 |
| ITC11 | 0.077 | 0.127 | 0.103 | 0.189 | 0.157 | 0.771 | 0.085 | 0.695 |
| IC1 | 0.121 | 0.188 | 0.091 | 0.130 | 0.132 | 0.143 | 0.738 | 0.657 |
| IC2 | 0.156 | 0.125 | 0.094 | 0.102 | 0.122 | 0.105 | 0.730 | 0.617 |
| IC3 | 0.186 | 0.138 | 0.105 | 0.201 | 0.153 | 0.123 | 0.718 | 0.659 |
| IC4 | 0.137 | 0.123 | 0.083 | 0.136 | 0.082 | 0.084 | 0.715 | 0.584 |
| IC5 | 0.092 | 0.108 | 0.101 | 0.139 | 0.116 | 0.106 | 0.691 | 0.552 |
| IC6 | 0.120 | 0.129 | 0.095 | 0.203 | 0.122 | 0.106 | 0.703 | 0.602 |
| IC7 | 0.134 | 0.123 | 0.091 | 0.130 | 0.101 | 0.132 | 0.726 | 0.613 |
| IC8 | 0.144 | 0.120 | 0.112 | 0.205 | 0.121 | 0.132 | 0.713 | 0.630 |
| IC9 | 0.108 | 0.099 | 0.087 | 0.113 | 0.127 | 0.094 | 0.734 | 0.605 |

Methods: principal component analysis, rotation: César normalized maximum variance method

Note: The numbers in the table in green indicate that the absolute value of the load coefficient is greater than 0.4

The data in this study were rotated using the maximum variance rotation method (varimax) to determine the correspondence between factors and research items. The table above shows the information extraction of the factors for the study items and the correspondence between the factors and the study items. From the table above, we can see that the similarity of all items is higher than 0.4, which means there is a strong correlation between items and factors, and factors can extract information effectively. After ensuring that the factors can extract most of the information of the study items, the corresponding relationship between the factor and the research item is analyzed (when the absolute value of the factor load coefficient is more significant than 0.4, the corresponding relationship between the factor and the item is indicated).



CHAPTER V

CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

Colleges and universities are knowledge-intensive organizations, and knowledge management runs through their development. Higher education tends to be information-zed, popularized, industrialized, diversified in demand, and internationalized. The competition for human, material, and financial resources between universities at home and abroad is becoming increasingly fierce. In the context of the student-centered era, the importance of student satisfaction to the competitiveness of higher education colleges in Thailand is self-evident. The elements of competitiveness of Thai universities include student satisfaction, especially the evaluation of students in Thai universities, which is the primary embodiment of their competitiveness. How to better improve students' satisfaction and attach importance to the value of students' satisfaction, as well as cultivate and enhance the competitiveness of higher education colleges in Thailand, is the problem to be solved in this paper.

Therefore, from the perspective of students' satisfaction, this paper, by sorting out the relevant literature, formulates the leading indicators that affect the competitiveness of higher education in Thailand, conducts quantitative and qualitative surveys with students, teachers, and administrators of many universities in Thailand as the survey and interview objects, and then uses AMOS analysis software to analyze the reliability and validity of the questionnaire, regression analysis, path analysis to verify the assumptions put forward above. At the same time, to realize the closed loop of data as much as possible, this study will also conduct qualitative analysis based on quantitative analysis and obtain many text materials by interviewing international students, teachers, and administrators in Thai higher education and further prove the correctness of quantitative analysis through the analysis of text materials.

The study found that: First, the competitiveness of HEI in Thailand refers to the unique ability to continuously adapt to changes in the external environment by

integrating and innovating all kinds of knowledge, resources, and abilities inside and outside the HEI to obtain continuous competition and optimization. The composition dimensions of the competitiveness of higher education institutions in Thailand are complex. By combing and summarizing the existing literature and combining the development characteristics of higher education institutions in Thailand in recent years, this study divides the competitiveness of higher education institutions in Thailand into three dimensions: international competitiveness, internal competitiveness, and technological innovation. Specifically, with the continuous acceleration of world globalization, educational communication among countries worldwide has become increasingly frequent. Nowadays, Thai universities seek development in their countries and must gain a specific right to speak in international competitions. Therefore, the international competitiveness of Thai institutions of higher learning is an intuitive display of their strength, and it is also an important reference index for international students, especially Chinese students, to choose to study in Thailand. In addition, international competitiveness is the channel for Thai higher education to display to the outside world, but its most robust support is internal competitiveness.

On the one hand, soft power is a crucial indicator of internal competitiveness, such as campus environment, atmosphere, teacher-student relationship, academic environment, and service concept. On the other hand, hard power is another critical indicator of internal competitiveness, such as teachers, financial resources support, and infrastructure construction. Soft and hard strength constitutes the internal competitiveness of Thai universities, which can provide students with the most intuitive feeling to understand Thai universities. Finally, in the era of the technological economy, the ability to innovate technologically is a vital reference dimension to enhance the competitiveness of Thai higher education. For example, the innovation of HEI teaching methods cannot be separated from technical support, and the opening of international courses cannot be separated from technological innovation. Therefore, the strength of technological innovation is also an essential dimension of the competitiveness of higher education colleges in Thailand.

Secondly, the four dimensions of student satisfaction (curriculum design,

enrollment, student service, tuition fee, and miscellaneous fees and living expenses) have a positive and significant impact on the three dimensions of the competitiveness of higher education colleges in Thailand (international competitiveness, internal competitiveness, and technological innovation). This shows that students expect to acquire professional theoretical knowledge and pay attention to improving their comprehensive quality and ability. The degree of students' learning satisfaction will affect not only the quality of students' training and the quality and level of teachers' teaching but also students' learning input and participation in extracurricular activities. Thai universities should realize that the degree of learning satisfaction can reflect students' recognition of the HEI's software and hardware, and they need to take more measures and create an excellent educational environment to help students grow into talents.

Thirdly, through the investigation and analysis of Thai higher education, we can see that:

(1) Thai higher education universities generally prefer international students' satisfaction, but international students hurt them because of the related problems of fees issue.

(2) There is a very close relationship between students' satisfaction and the competitiveness of colleges and universities, which is widely recognized. When students are satisfied with colleges and universities, they will be more willing to study courses independently and deeply. They will constantly improve their professional ability to have more competitive advantages in the job market. In addition, students with high satisfaction are more willing to recommend their HEIs to others, which will be an essential way for Thai higher education colleges to gain new life, and a reasonable enrollment rate can ensure the healthy development of Thai universities and obtain more resources to enhance their competitiveness.

(3) The competitiveness of higher education in Thailand is mainly reflected in three aspects: international competitiveness, internal competitiveness, and technological innovation.

5.2 Recommendation

Studying university competitiveness is a new field and vision of university research, and it is another innovative progress of multi-disciplinary research in universities. When people are puzzled by the present situation and future of universities, especially the difficulties faced by universities in resources, environment, internal management system, and operation mechanism, and when universities are helpless in the face of various new situations, new problems, and new contradictions in reform and development, the research on university competitiveness has gone beyond the traditional thinking mode and theoretical courage of methods, found the source of confusion of universities with the practical spirit of facing reality and pushed universities to the primary position of "market competition." Therefore, exploring and improving the competitiveness of colleges and universities has become the focus of academic research and practical development. Given the development characteristics of higher education institutions in Thailand, starting from the realistic demand of trying to find international students, this paper provides some Recommendations for improving the competitiveness of higher education institutions in Thailand from the perspective of student satisfaction improvement suggestions for the development of higher education institutions in Thailand from the strategic and tactical dimensions.

(A) Strategic dimension: the improve the competitiveness of higher education colleges in Thailand

(1) Establish a comprehensive quality concept and innovate the HEI concept. The primary responsibility of a university is to cultivate talents. Therefore, it is necessary to persist in making talent cultivation the central task of the university, lay a solid foundation for university teaching, and strive to make Thailand Higher Education College an educational university with a good reputation and strong competitiveness. To run the best university education system, the critical point is to deepen education and teaching reform in an all-around way. The breakthrough point is education reform; education is the guide and runs through the whole process of talent training, and efforts should be made to cultivate high-quality applied talents with international vision, innovative consciousness, and dedication. Thai higher education should be the target

choice to meet the diversified demand for talent in the development of the modern market economy and adapt to the ever-changing development trend of science and technology. It is also the inevitable choice to adapt to the diversification of higher education and the multi-level school-running pattern, and it is also the university's survival in the market competition.

Thai universities have been committed to internationalizing degree courses since 2010 to recruit overseas students, especially those from China, to cope with the decrease in students and increase their living income. However, with the rapid expansion of international enrollment in higher education institutions in Thailand, many colleges and universities have failed to effectively cooperate with the number of students and the quality of education, which not only leads to unreasonable increases in tuition fees and disorder in the overseas study service market but also brings significant challenges to teachers and other staff in Thai colleges and universities. These phenomena have greatly affected the positive image of Thai colleges and universities in students' minds and negatively affected their future enrollment and management. Therefore, to better deal with the contradiction between students' needs and the quality of education, Thai higher education must establish a comprehensive quality view instead of unthinkingly pursuing students' enrollment and income. Instead, we should innovate the concept of running a school and prioritize quality as the most urgent requirement and the most insurmountable bottom line for developing colleges and universities. The innovative concept of running a school should be personalized and distinctive. The idea of running a university is gradually formed in the process of HEI growth and development, and its connotation is very rich, which integrates the school-running ideas, values, academic style, and management philosophy of several generations of administrators of a university and is the soul and core of the HEI.

(2) Form strategic thinking, do an excellent job in top-level planning, and establish a sense of crisis.

First, it is necessary to strengthen the top-level design, formulate an internationalization strategy, and systematically plan and rearrange the dimensions, forms, and scope of foreign exchanges and cooperation in higher education. Regarding

foreign exchange and cooperation, the internationalization of higher education in Thailand should be transformed from "one-way input" to "two-way interaction" based on equality, mutual benefit, and win-win cooperation principles. We should pay attention to the "introduction" of foreign high-quality higher education resources to promote the "going out" of Thailand's higher education advantages and truly improve the international influence and discourse power of Thailand's higher education.

Secondly, we should fully play the primary role of colleges and universities and integrate the concept of internationalization into all the work of running schools. In terms of education and teaching, the HEI's educational concept, educational content, educational methods, and educational quality assurance system should be gradually brought into line with international standards, and the international adaptability of personnel training should be improved. In scientific research, we will strengthen academic cooperation with high-level universities and research institutions worldwide, set up research teams and platforms with foreign institutions, conduct research on the world's cutting-edge topics, and jointly tackle major scientific research projects. In addition, the HEI should mobilize all students, teachers, and administrators to participate in it, expand their international horizons, and raise their awareness of international participation through foreign cooperation projects such as visiting other HEIs and exchanges.

At the same time, we found from the survey that Thai universities have increased international students' tuition and living expenses for short-term capital income, which has increased the education cost of international students. Although this way can bring short-term economic income to Thai universities, in the long run, unreasonable fees will reduce the trust of Thai university students abroad, especially among Chinese students. Therefore, higher education institutions in Thailand should establish a sense of crisis, focus on the longer-term direction of development, and make a layout for the sustainable development of Thai universities.

(3) Cohering international characteristics and attaching importance to soft power construction.

In the investigation, we found that to attract more international students, Thai higher education needs to pay more attention to the internationalization strategy in the

process of HEI construction, thus ignoring the attraction of national characteristics to international students. Such a strategy of abandoning national characteristics and unthinkingly pursuing internationalization will fail to compete with some mature international universities on the same stage and lead to vague cognition of international students because of unclear positioning. Therefore, the intervention of foreign elements is necessary for the international development of universities, but the intervention of foreign elements is only a means, not an end. In other words, the real purpose of university internationalization is not to integrate foreign elements into the organization, management, education, and teaching of universities but to form an international school-running concept through the intervention of foreign elements, Build an international advanced organizational system and management structure; Cultivate international talents with international competitiveness and international circulation, and produce scientific research achievements with international influence. The internationalization process aligns with international standards by reforming courses and qualification certificate systems, recruiting overseas talents in terms of students and teachers, actively participating in international exchanges and cooperation, and responding to the challenges and opportunities posed by globalization to Australian higher vocational education. On the other hand, if a country's higher education is not different from other countries' dominant advantages and can only adapt passively in the international market, then the desire for internationalization of education can only be empty talk.

Secondly, external publicity is a crucial way to enhance the soft power of the HEI, and it is also one of the essential means to expand the HEI's popularity, enhance its image, and enhance its attractiveness. A good HEI image is the premise of winning public trust, which is conducive to attracting excellent students and improving the employment rate of graduates. The HEI image is one of the essential factors that reflect the attractiveness of colleges and universities, and it is related to the survival and development of HEIs. Therefore, Thai higher education should pay attention to multi-content publicity. Colleges and universities should pay attention to exploring the historical heritage and cultural traditions of the HEI for publicity and further enhancing the influence of the HEI in society. It is necessary to highlight good public image propaganda.

At the same time, alliances are formed among universities and various departments to effectively prevent the negative impact of arbitrary charges by intermediaries on the reputation of Thai universities.

(B) Tactical dimension: the essential measures to enhance the competitiveness of Thailand's higher education from the perspective of satisfaction.

Culturing and promoting the competitiveness of Thailand's colleges and universities is a cyclical process. Based on putting forward the implementation direction of the strategy to reasonably improve the competitiveness of Thailand's higher education institutions, combined with the quantitative and qualitative analysis of the influencing factors and development status of Thailand's higher education institutions' competitiveness from the perspective of satisfaction, and effectively combining with the actual situation of Thailand's higher education institutions, this paper puts forward the following further efforts to improve Thailand's competitiveness from the core dimensions of satisfaction, namely, curriculum design, student admission, student service, tuition and miscellaneous fees & living expenses.

(1) Deepen foreign exchanges, build famous university brands, and improve international reputation.

Internationalization is the trend of the times in the development of higher education today, and integration into the global higher education space is the only way for universities to enhance their international competitiveness. Thai higher education universities attach great importance to the international development of higher education, adopt incentive measures, and constantly expand international cooperation in higher education with the help of regional exchange platforms. Colleges and universities also vigorously recruit international students and international talents and actively promote their education and teaching, scientific research, discipline and curriculum construction, and other work in line with international standards. From the above qualitative analysis, the most critical factor for many Chinese students to choose Thai universities for study is external evaluation, such as the evaluation of relatives and friends, the display of HEI image on social platforms, and the recommendation of intermediary agencies. Therefore, it is essential to build a channel for foreign exchange, and whether the quality of foreign

exchange is effectively guaranteed requires Thai higher education to have the right to speak in foreign exchange. The fundamental goal of university internationalization is to enhance its international competitiveness. Therefore, whether it has the right to speak on the international higher education stage is not a hegemony but a manifestation of international competitiveness and should be the essential core indicator to measure the level of university internationalization. The right to speak is representative of power relations, manifested in two aspects: the ability to manipulate the mainstream media and the actual status of the discourse subject. The right to speak in Thai higher education refers to expressing a country's realistic influence in the international higher education market. The right to speak internationally can easily influence the tendency of other countries to choose, thus playing a more significant role in internationalization and occupying a dominant position. It is mainly reflected in the depth and breadth of international cooperation and exchange, the attraction to overseas students and talents, and students' international competitiveness.

Therefore, Thai universities emphasize enhancing their advantages in constructing a discourse system. Abandoning the superior natural geographical conditions, we should focus on the cultivation of students' technical skills and high-level education and learning, and reform the core elements such as courses, teachers, teaching, internationally accepted vocational education qualification certificates, overpass design of the education system, to reach the international first-class level. For example, popular courses with a significant demand for international students are launched, and a multi-dimensional scholarship incentive system is established. At the same time, it establishes its characteristics and advantages. Strengthen dialogue and exchanges with other countries using international cooperation and exchanges and participate in international projects to form an international think tank for developing higher education. Establish dialogue mechanisms at different levels and fields through cooperative, distance, and overseas education. Actively participate in international organizations and multilateral forums, such as UNESCO, Southeast Asia Higher Education Association, and Education Ministers' Meeting, establish close relations with other educational organizations, accurately grasp the needs and development trends of vocational education cooperation,

and further promote the concept of higher education in China.

(2) Attach importance to quality management and enhance internal competitiveness.

Internal competitiveness is the embodiment of students' most intuitive university evaluation. The construction of various institutional systems has played a guiding and standardizing role in the behaviors and goals of all educational subjects and stakeholders. It is the mechanism that guarantees an effective driving force for improving the competitiveness of Thai universities.

First, the quality of teachers is directly related to the satisfaction of middle school students in Thai higher education. According to the survey results of students' satisfaction, teachers' professional knowledge is frequently mentioned in the quality of teachers, which shows that the professional quality of teachers in Thai universities needs to be further improved. The academic level of a university teacher can be reflected in the following four points: first, the understanding of the government's educational principles and policies reflects the academic level of university teachers to a great extent; second, the theoretical movement of pedagogy and teaching theory, the interaction in the teaching process, the inspiration of teaching methods, and the modern chemistry of teaching methods, that is, the ability shown by teachers in teaching activities can reflect the academic level of university teachers. Finally, a deep understanding of the teaching system and content is the reform and creativity reflected in the teaching materials and the innovation of teaching mode. What is outstanding is the innovative contribution made by teachers to teaching in the aspects of discovery, synthesis, and application; that is, creativity in teaching activities can directly or indirectly show the academic level of university teachers. However, many people believe that the academic level of teachers' teaching dramatically influences the teaching effect and plays a decisive role in the teaching effect. They believe that the knowledge, ability, and quality displayed by university teachers in teaching and practice are the most critical factors affecting the academic level of teaching.

Therefore, Thai universities strive to build a high-quality teaching, research, and management team around the goal of running an application-oriented university.

Secondly, we should attach importance to the inflow of outstanding talents and actively cultivate and introduce several high-level leading talents and academic backbones. Efforts should be made to cultivate a group of academic leaders with extensive influence in academic research and a group of young and middle-aged academic backbones who can shoulder the heavy responsibility of scientific research and teaching. Cultivate and introduce internationally famous teachers with rich experience and first-class teaching levels. Build several innovative academic teams that can train high-quality applied talents and undertake enterprise engineering technology development and research projects.

Therefore, Thai universities strive to build a high-quality teaching, research, and management team around the goal of running an application-oriented university. Secondly, we should attach importance to the inflow of outstanding talents and actively cultivate and introduce several high-level leading talents and academic backbones. Efforts should be made to cultivate a group of academic leaders with extensive influence in academic research and a group of young and middle-aged academic backbones who can shoulder the heavy responsibility of scientific research and teaching. Cultivate and introduce internationally famous teachers with rich experience and first-class teaching levels. Build several innovative academic teams that can train high-quality applied talents and undertake enterprise engineering technology development and research projects.

Second, in student service, student admission is an essential measure of the competitiveness of Thai universities. Therefore, providing international students with a safe and comfortable living environment is particularly important. The living environment mentioned in this paper mainly refers to the hardware facilities such as students' study, accommodation, catering, medical care, and activities, which are the factors that students pay close attention to and the window to show the attraction of the HEI. Combined with the survey results, it is suggested that Thai higher education should strengthen its student serviceability and provide the most effective help to international students in many aspects. At the same time, a series of innovations and reforms have been made in the HEI's internal management structure, mechanism, and management tools. For example, measures such as sinking management power, merging and reorganizing

departments, implementing a performance responsibility system, training managers, and implementing information management have been taken to improve internal management efficiency. Finally, we should improve the democratic management and supervision mechanism to ensure that the management and decision-making of HEI can reflect the public will and meet the public interests. Everyone in the university system is a legal member, and their right to know, participate, and make decisions on HEI management affairs should be fully guaranteed.

Third, take students as the center and improve the teaching quality. The educational goal of an institution of higher learning is to improve the teaching quality. Improving the teaching quality is inseparable from the core role of teaching management and the cooperation between teachers and students. If HEI's teaching management can improve personnel, rules and regulations, incentives and supervision, and management, it will make the management of colleges perfect. Teachers can pay attention to improving professional quality and teaching attitude and strengthening classroom management level. Students pay attention to enhancing learning ability and personal quality, so improving teaching quality in this institution is entirely self-evident. Curriculum design is essential for teaching quality. The development of classroom activities needs to establish a benign organization and operation mechanism, scientific and practical organization, and management, and it should be designed and managed systematically as a whole.

Therefore, it is necessary to fully use international students' resources, encourage international and local students to actively participate in the course construction of university education through school-wide academic discussions, and jointly explore the differences between foreign and domestic university education. By discussing the contents of courses, teaching forms, and classroom interaction between teachers and students, international students can be integrated into the local cultural atmosphere and reach a consensus on course construction. Secondly, some teachers are sent abroad to visit and give lectures in popular majors or advantageous areas of colleges and universities and participate in international seminars and major global scientific research projects. Encourage teachers to participate in the internationalization of the HEI's curriculum after returning to China or completing cooperative projects. The experience

gained by teachers in overseas teaching and research is also the basis of curriculum internationalization, which can expand the international dimension of curriculum content. Finally, provide financial support for teachers who participate in the internationalization of courses. HEIs should encourage teachers to participate in research projects and topics related to the internationalization of university courses and provide financial support for them. For teachers who have made outstanding research achievements in the internationalization of courses, such as developing new internationally comparative courses, developing courses with foreign research objects, updating existing internationalization courses, and emphasizing internationalization views and contents in course teaching, HEIs should give some financial rewards. Through rewards, teachers' motivation to participate in the international curriculum construction is stimulated, and they are guaranteed to participate in the international curriculum construction activities with the most incredible enthusiasm.



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APPENDICES

Appendix I: Questionnaire and Interview Questions for Students

Introduction: We extend our heartfelt gratitude to you for your participation in this survey. Your input is invaluable to us, as it is pivotal in aiding our comprehension of your experiences and perceptions. We sincerely appreciate your willingness to share your thoughts with us.

Please rest assured that we take your privacy seriously. We want to emphasize that all information in this questionnaire will be treated with the utmost confidentiality and will not be disclosed to the public. Your responses are intended solely for our research purposes, and your anonymity will be preserved throughout the process. Your participation is essential in helping us improve and adapt our services to meet your needs better. Please take a moment to answer the following questions honestly and openly. Once again, we thank you for your time and valuable contribution.

Part 1. Demographic Information:

1. Which university are you studying?

1. Rajamangala University of Technology Thanyaburi (RMUTT)
 - 1.1. Khlong Luang Campus
 - 1.2. Pathun Thani Campus
2. Rajamangala University of Technology Krungthep (RMUTK)
 - 2.1. Bangkok Technical Campus
 - 2.2. Bophit Phimuk Mahamek Campus
 - 2.3. Phra Nakhon Tai Campus
3. Rajamangala University of Technology Rattanakosin (RMUTR)
 - 3.1. Salaya Campus
 - 3.2. Bophit Phimuk Chakkrawat Campus
 - 3.3. Pohchang Campus
 - 3.4. Wangklaikangwon Campus

4. What is your current level of study at this university?

1. Bachelor Level or below
2. Master Level
3. Ph.D. Level

3. How did you learn about this university before studying at the above institute?

1. Referrals from friends or teachers
2. Agency Promotion
3. Intercollegiate cooperation
4. Find it yourself
5. Other (Please specify... ..)

4. How many program choices are needed in the decision-making process when you apply to this university?

1. Only One International Program
2. Two to five international programs
3. Six to ten international programs
4. More than eleven international projects

5. How difficult is it to get into?

1. Very simple
2. Comparatively easy
3. Easier
4. Relatively difficult
5. Particularly difficult

6. Would you recommend your current study program to your friends or relatives?

1. Yes (If yes, please go to Question 7)
2. No (If No, please go to Question 8)
3. Not sure

**7. Why do you recommend your current study program to friends or relatives?
(More than one answer)**

1. Convenient location
2. Good student services
3. Simplified application process
4. Curriculum design expectations
5. Lower tuition fees

6. Lower cost of living
7. All of the above
8. Other: _____

8. Will you choose Thailand as the following country to study in after you have finished this stage of your studies?

1. Yes (If Yes, please go to Question 9)
2. No (If No, please go to Question 10)
3. Not sure

9. Why do you recommend your current study program to friends or relatives? (More than one answer)

1. Appropriate tuition fees
2. Experienced professors
3. Rational curriculum design
4. Excellent international student services
5. All of the above
6. Other: _____

10. Will you continue to study at the university you are attending after you have completed this stage of your studies?

1. Yes (If yes, please go to Question 11)
2. No (If no, please go to Question 12)
3. Not sure

11. Why do you continue to study at the university you are attending after you have completed this stage of your studies? (More than one answer)

1. Good teacher-student relationships
2. Excellent location
3. Satisfactory student services
4. The right programmer for me to continue my education
5. All of the above

Part 2.

Please read the following text in detail before proceeding to the next question.

In the context of Higher Education Institutions (HEIs), international competitiveness refers to the ability of these institutions to effectively compete on a global scale in various aspects of education and research. Several variables and factors can influence the international competitiveness of HEIs. These variables are often used to assess and rank institutions internationally. Some of the key variables and indicators include:

1. **Academic Reputation:** This variable assesses the perception of the institution's quality and academic excellence among peers and experts in the field. It may be measured through surveys and expert opinions.
2. **Research Output:** HEIs' research productivity, including the number of publications, research grants, patents, and citations, is a critical factor in assessing international competitiveness.
3. **Faculty Quality:** The faculty member's qualifications, expertise, and international recognition play a significant role. This includes the number of faculty with international experience, awards, and distinctions.
4. **International Faculty and Student Diversity:** Institutions with a diverse faculty and student body often score higher in international competitiveness. This reflects an inclusive and globalized learning environment.
5. **Student Quality:** The quality of incoming students, including their academic credentials, international representation, and competitiveness for admission, is a relevant variable.
6. **International Collaborations:** Partnerships, collaborations, and joint research initiatives with other global institutions can enhance an HEI's international competitiveness.
7. **Global Mobility:** The extent to which students and faculty engage in international exchange programs, study abroad, and international internships can impact competitiveness.

8. **Infrastructure and Resources:** Access to state-of-the-art facilities, research resources, and funding opportunities contributes to an institution's competitiveness.

9. **Graduate Employability:** The employability and success of graduates in the global job market are essential indicators of an HEI's quality and relevance.

10. **Global Rankings:** Institutions often use their position in global university rankings as a variable to measure their international competitiveness.

11. **Internationalization Strategy:** The effectiveness of an institution's internationalization strategy, including recruitment efforts, partnerships, and outreach, can influence its global competitiveness.

12. **Language of Instruction:** Offering programs in multiple languages, mainly English, can attract a more diverse international student body and faculty.

13. **Quality of International Programs:** The quality and relevance of international programs, including curriculum design and delivery, can impact an institution's global appeal.

14. **Innovation and Technology Transfer:** HEIs that excel in innovation, technology transfer, and industry collaboration can enhance their international competitiveness.

15. **Cultural and Social Integration:** Creating a welcoming and inclusive campus environment accommodating diverse cultures and backgrounds is essential for global competitiveness.

12. Where do you think Thailand's higher education stands in terms of Chinese students' perspective in the international market compared to the others?

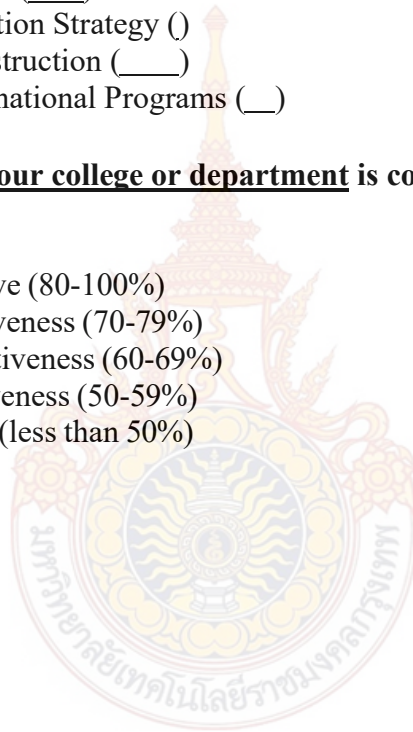
1. Highly competitive (80-100%)
2. Higher competitiveness (70-79%)
3. Medium competitiveness (60-69%)
4. Lower competitiveness (50-59%)
5. Non-competitive (less than 50%)

13. Which one or more of the following factors of competitiveness do you consider to be the most critical three factors(1 = most likely, 2= most likely, 3 = likely)?

1. Academic Reputation (_____)
2. Research Output ()
3. Faculty Quality ()
4. International Faculty and Student Diversity (_____)
5. Student Quality ()
6. International Collaborations (_____)
7. Global Mobility (_____)
8. Infrastructure and Resources ()
9. Graduate Employability (_____)
10. Global Rankings ()
11. Internationalization Strategy ()
12. Language of Instruction (_____)
13. Quality of International Programs ()

14. Do you think your college or department is competitive at the university you are attending?

1. Highly competitive (80-100%)
2. Higher competitiveness (70-79%)
3. Medium competitiveness (60-69%)
4. Lower competitiveness (50-59%)
5. Non-competitive (less than 50%)



Part 3. International competitiveness

Instructions: Please rate your level of satisfaction. Use the scale provided, where one represents "Very Dissatisfied," and 5 represents "Very Satisfied."

Scale:
 1=Very Dissatisfied
 2= Dissatisfied
 3= Neutral
 4= Satisfaction
 5= Very Satisfied

| Question | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| Part-3.1 Pedagogical Innovation | | | | | |
| 1. The use of various technologies enhances my learning experience. (Technology Integration). (Technology Integration) | | | | | |
| 2. The Flipped classroom approach (pre-reading/watching videos before class) model enhances my engagement during in-person sessions. (Flipped Classroom) | | | | | |
| 3. The Flipped classroom approaches (pre-reading/watching videos before class) model enhances learning during in-person sessions. (Flipped Classroom) | | | | | |
| 4. Collaborative learning with peers contributes to my overall understanding of the subject. (Peer Learning) | | | | | |
| 5. Engaging in real-world projects helps me apply my knowledge. (Project-Based Learning) | | | | | |
| 6. Engaging in real-world projects helps me apply my skills effectively. (Project-Based Learning) | | | | | |
| 7. Participatory and student-centered activities improve my understanding of concepts. (Active Learning) | | | | | |
| 8. The use of gamification elements makes learning more motivating. (Gamification) | | | | | |

| Question | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 9. The use of gamification elements makes learning more enjoyable. (Gamification) | | | | | |
| 10. Instructors provide timely feedback on assignments and assessments. (Assessment Innovations) | | | | | |
| 11. Culturally responsive teaching practices promote inclusivity and respect for diversity. (Culturally Responsive Teaching) | | | | | |
| 12. Inquiry-based learning encourages me to explore topics more deeply and critically. (Inquiry-Based Learning) | | | | | |
| 13. Personalized learning approaches cater to my individual needs and learning pace. (Personalized Learning) | | | | | |
| Part-3.2 Curriculum Innovation | | | | | |
| 14. The relevance of the courses to your program of study. (Relevance) | | | | | |
| 15. The knowledgeable / experienced are the professors teaching the courses. (Stakeholder Collaboration) | | | | | |
| 16. The collaboration between administrators and educators ensures effective curriculum implementation. (Stakeholder Collaboration) | | | | | |
| 17. The materials used for teaching are up to date. (Flexibility) | | | | | |
| 18. The integration of multiple subject areas helps me understand real-world complexities better. (Interdisciplinarity) | | | | | |
| 19. The curriculum encourages critical thinking. (Critical Thinking and Creativity) | | | | | |
| 20. The curriculum encourages problem-solving skills. (Critical Thinking and Creativity) | | | | | |
| 21. The diverse cultural and global perspectives within the curriculum content. (Cultural and Global Perspectives) | | | | | |

| Question | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 22. The curriculum is continuously improved based on student feedback. (Assessment Adaptations) | | | | | |
| 23. The curriculum is continuously improved based on student outcomes. (Assessment Adaptations) | | | | | |
| 24. The effective communication between educators and students regarding curriculum changes. (Continuous Improvement) | | | | | |
| 25. The effective collaboration between educators and students regarding curriculum updates. (Continuous Improvement) | | | | | |
| Part-3.3 Service Innovation | | | | | |
| Part-3.3.1 Admission | | | | | |
| 26. The application form was easy to understand. (Application) | | | | | |
| 27. The application form was clear to understand. (Application) | | | | | |
| 28. The online application process is user-friendly. (Application) | | | | | |
| 29. The eligibility requirements were reasonable. (Eligibility Requirements; Selection Criteria) | | | | | |
| 30. The eligibility requirements were well-defined. (Eligibility Requirements; Selection Criteria) | | | | | |
| 31. The notification process was clear in conveying my admission status. (Notification) | | | | | |
| 32. The notification process was timely in conveying my admission status. (Notification) | | | | | |
| 33. The admission tests accurately assessed my readiness for the program. (Admission Tests) | | | | | |
| 34. The interview process provided a meaningful opportunity to showcase my skills. (Interviews) | | | | | |
| 35. The selection criteria seemed comprehensive. (Selection Criteria) | | | | | |

| Question | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| 36. The selection criteria seemed fair. (Selection Criteria) | | | | | |
| 37. The application review appeared to be thorough and thoughtful. (Application Review) | | | | | |
| 38. The acceptance and enrollment process was straightforward and well-organized. (Acceptance and Enrollment) | | | | | |
| 39. The orientation sessions provided valuable information about the institution and program. (Orientation) | | | | | |
| Part-3.3.2 Student Service | | | | | |
| 40. The academic advising services helped me make informed decisions about my courses. (Academic Advising) | | | | | |
| 41. The counseling services provided effective support for my mental well-being. (Counseling and Mental Health Services) | | | | | |
| 42. The career services helped me plan my develop relevant skills. (Career Services) | | | | | |
| 43. The career services helped me plan my future career. (Career Services) | | | | | |
| 44. The academic support services contributed to my understanding of course material. (Tutoring and Academic Support) | | | | | |
| 45. The financial aid services provided clear information about available resources. (Financial Aid and Scholarships) | | | | | |
| 46. The health and wellness services supported my overall physical well-being. (Health and Wellness Services) | | | | | |
| 47. The availability of student organizations and clubs enhanced my campus life. (Student Organizations and Clubs) | | | | | |
| 48. The diversity and inclusion initiatives fostered a sense of belonging and respect. (Diversity and Inclusion Initiatives) | | | | | |

| Question | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| 49. The housing services contributed to a positive living experience on campus. (Housing and Residence Life) | | | | | |
| 50. The orientation and transition programs helped me adjust to campus life. (Orientation and Transition Programs) | | | | | |
| 51. The campus safety services contributed to a secure environment for me. (Campus Safety and Security) | | | | | |
| 52. The opportunities for engagement enriched my college experience. (Student Engagement and Leadership Development) | | | | | |
| 53. The opportunities for leadership enriched my college experience. (Student Engagement and Leadership Development) | | | | | |
| Part-3.4 Other | | | | | |
| Tuition, Miscellaneous Fees & Living Expenses | | | | | |
| 54. The clarity of tuition costs and payment options. (Tuition) | | | | | |
| 55. The tuition fees are reasonable, considering the quality of education provided. (Tuition) | | | | | |
| 56. The institution provides clear information about how tuition costs are calculated. (Tuition) | | | | | |
| 57. The value I receive from my education justifies the tuition expenses. (Tuition) | | | | | |
| 58. The breakdown of miscellaneous fees is understandable. (Miscellaneous Fees) | | | | | |
| 59. The breakdown of miscellaneous fees is transparent. (Miscellaneous Fees) | | | | | |
| 60. The value of the services covered by the miscellaneous fees. (Miscellaneous Fees) | | | | | |

| Question | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| 61. The value of the facilities covered by the miscellaneous fees. (Miscellaneous Fees) | | | | | |
| 62. The purpose and breakdown of miscellaneous fees are well-communicated. (Miscellaneous Fees) | | | | | |
| 63. The cost of living in the area is manageable for my budget. (Living Expenses) | | | | | |
| 64. The institution provides adequate support for managing living expenses. (Living Expenses) | | | | | |
| 65. The institution provides useful guidance on managing living expenses. (Living Expenses) | | | | | |
| Part-3.5 Competitiveness | | | | | |
| Part-3.5.1 International Competitiveness | | | | | |
| 66. The university efficiently utilizes its resources to produce high-quality education. (Productivity and Efficiency) | | | | | |
| 67. The university's emphasis on research positively impacts its competitiveness. (Innovation and Research) | | | | | |
| 68. The university's emphasis on innovation positively impacts its competitiveness. (Innovation and Research) | | | | | |
| 69. The university maintains a high standard of education quality. (Quality and Standards) | | | | | |
| 70. The university maintains a high standard of student service quality. (Quality and Standards) | | | | | |
| 71. The university's reputation positively impacts its competitiveness on the international stage. (Global Branding and Reputation) | | | | | |
| 72. The university invests effectively in the education of its students. (Human Capital and Education) | | | | | |

| Question | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 73. The university invests effectively in the skills of its students. (Human Capital and Education) | | | | | |
| 74. The university infrastructure contributes to its overall competitiveness. (Infrastructure and Logistics) | | | | | |
| 75. The university has access to financial resources that support its competitiveness. (Financial Environment) | | | | | |
| 76. The university focuses on sustainability and social responsibility enhances its competitiveness. (Sustainability and Social Responsibility) | | | | | |
| Part-3.5.2 Internal Competitiveness | | | | | |
| 77. The departments or units with higher internal competitiveness are better equipped with resources. (Resource Allocation) | | | | | |
| 78. The academic department or program performs better than others in providing quality education. (Innovation and Productivity) | | | | | |
| 79. The academic department or program promotes innovation, research. (Innovation and Productivity) | | | | | |
| 80. The academic department or program promotes a unique learning opportunities. (Innovation and Productivity) | | | | | |
| 81. How satisfied are you with the level of engagement and collaboration among students and faculty members within your academic department or program. (Collaboration and Cooperation) | | | | | |
| 82. The academic department or program provides ample opportunities for students to excel, stand out, and make meaningful contributions. (Talent Development) | | | | | |

| Question | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 83. The academic department or program nurtures talent, encourages leadership, and provides avenues for students to develop their skills. (Talent Development) | | | | | |
| 84. The communication channels and feedback mechanisms that allow students to voice their opinions and concerns within academic department or program. (Performance Evaluation) | | | | | |
| 85. The academic department or program encourages healthy competition while also fostering collaboration and teamwork among students. (Organizational Culture) | | | | | |

Part 4.

Please give us your opinion or suggestions about improving the international competition for Thai higher education for Chinese students.

Thank you for your cooperation!

Interview Question :**Part-1 Question for student satisfaction with competitiveness****For Student:**

1. How satisfied are you with the overall learning experience at this institution?
2. Do you believe that the level of student satisfaction impacts the competitiveness of the college/university?
3. In your opinion, what specific factors contribute to student satisfaction in this institution?
4. Are there areas where the college could improve to enhance student satisfaction and competitiveness?
5. Do you believe that a more satisfied student body positively affects the reputation and ranking of the college/university?

For Faculty:

1. How do you perceive the relationship between student satisfaction and the competitiveness of the college/university?
2. What efforts do you make to ensure student satisfaction in your courses or programs as an educator?
3. Have you noticed any correlation between high student satisfaction and better student outcomes (e.g., academic performance and retention)?
4. How does student satisfaction impact faculty morale and motivation to innovate teaching methods?
5. What support or resources would you like to have to improve student satisfaction and enhance the competitiveness of the college/university?

For Manager:

1. How does the institution gauge student satisfaction and its impact on the competitiveness of the college/university?
2. Are there any specific initiatives or strategies to address student satisfaction and enhance the institution's competitiveness?
3. In your experience, how does student satisfaction influence the college/university's recruitment and retention efforts?
4. What metrics or indicators do you use to measure the success of student satisfaction initiatives?
5. How do you involve faculty and other stakeholders in fostering a student-centric approach to improve competitiveness through student satisfaction?

Part-2 Question for International Competitiveness**For Student:**

1. How aware are you of the international reputation and ranking of your college/university?
2. Have you interacted with international students or participated in globally oriented-programs or activities?
3. In your opinion, what specific factors contribute to the international competitiveness of your college/university?
4. Do the institution's global partnerships and collaborations positively impact its competitiveness?
5. Have you considered studying abroad or participating in international exchange programs to enhance your educational experience?

For Faculty:

1. How do you perceive the international reputation and standing of your college/university within your academic field or discipline?
2. Have you been involved in research collaborations or academic projects with international partners?
3. In your view, how does the presence of international faculty members positively impact the institution's international competitiveness?
4. Are any specific initiatives or programs in place to attract and support international students and faculty?

For Manager:

1. How does the institution assess and benchmark its international competitiveness against other global HEIs?
2. Are there any specific strategies or plans to enhance the institution's international reputation and attract more international students and faculty?
3. How do international partnerships and collaborations contribute to the institution's global standing and competitiveness?

Part-3 Question for Internal Competitiveness**For Student:**

1. What strategies or resources does the college/university provide to support students' academic pursuits and foster healthy competition?
2. Do you feel that internal competitiveness enhances the learning environment and motivates students to excel academically?
3. Have you observed or experienced any challenges or concerns related to internal competitiveness?

For Faculty:

1. Are there any efforts to promote interdisciplinary collaboration and competition among faculty and students?
2. How does the institution recognize and reward academic excellence among faculty members and students?
3. Do you believe that internal competitiveness enhances the institution's overall academic reputation and competitiveness?

For Manager:

1. How does the institution ensure that internal competitiveness is healthy and supportive rather than cutthroat or detrimental to students' well-being?
2. In what ways does internal competitiveness impact faculty retention and recruitment efforts?

Part-4 Question for Technology Innovation with Competitiveness**Part-4.1 Curriculum Innovation****For Students:**

1. Have you experienced any innovative changes in the curriculum during your time at the college/university?
2. How do you perceive the impact of curriculum innovation on your overall learning experience and academic growth?
3. Do you believe that curriculum innovation positively influences the competitiveness of the college/university in attracting students and faculty?
4. Are there any courses or programs you found particularly innovative and impactful to your educational journey?
5. How do you think curriculum innovation prepares you for the challenges of the modern job market and industry demands?

For Faculty:

1. Have you been involved in curriculum development or modification to introduce innovative elements in courses or programs?
2. How do you gauge the effectiveness of curriculum innovation in meeting the needs and expectations of students and stakeholders?
3. In your view, how does curriculum innovation impact the competitiveness of the college/university in attracting and retaining students?
4. Do you encounter any challenges or barriers while implementing curriculum innovations?

For Manager:

1. How do you evaluate the impact of curriculum innovation on the overall competitiveness and standing of the college/university in the education landscape?
2. Are there any strategic plans or initiatives to leverage curriculum innovation to enhance the institution's competitiveness?

Part-4.2 Student Services Innovation**For Student:**

1. Which student services are critical factors in enhancing the overall student experience and making the institution more competitive?
2. Have you utilized any unique student services or programs you believe give your college/university an advantage over other institutions?

For Faculty:

1. As a faculty member, have you observed any correlation between effective student services and improved student performance or retention rates, positively impacting the institution's competitiveness?

For Manager:

1. How do you gather student feedback about the effectiveness of student services in enhancing the college/university's competitiveness?
2. Are there any examples of innovative student services that have directly contributed to the institution's competitiveness?

Part-4.3 Teaching Innovation**For Student:**

1. Have you experienced any teaching innovations that have positively influenced your academic performance and overall satisfaction with the institution's educational offerings?

For Faculty:

1. How does the institution support and encourage faculty to adopt innovative teaching methods to enhance the institution's competitiveness further?

For Manager:

1. Have you observed any improvements in student satisfaction, academic performance, or faculty morale due to teaching innovation, positively impacting the institution's competitiveness?

BIOGRAPHY

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**EDUCATIONAL
BACKGROUND**

Rajamanagla University of Technology Krunthep, Thailand
M.B.A in Business Administration
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