

RELATIONSHIP BETWEEN SERVICE QUALITY,
ACADEMIC QUALITY AND SATISFACTION AMONG STUDENTS
OF SOUTHERN THAILAND GOVERNMENT UNIVERSITIES:
THE MODERATING EFFECT OF VALUE

NARUEBAN YAMAQUPTA

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May 2014

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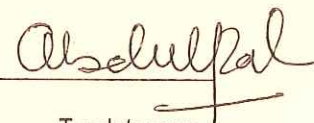
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ABSTRACT

In the context of higher education institutions, particularly those located in southern Thailand, achieving student satisfaction is imperative for a number of reasons. Firstly, higher education institutions in this region are currently faced with situations that result in decreasing numbers of students. Secondly, competition tends to increase every year from both within and outside the country. Hence, low student satisfaction becomes an essential issue for higher education institutions to resolve. Moreover, in-depth investigation on student satisfaction in this region is under-researched. Past studies have shown that student satisfaction is influenced by a variety of factors, including aspects related to quality and value. Therefore, this study sought to assess the relationship between service quality and academic quality on student satisfaction, and also to gauge the moderating effect of value using a multi-items measurement. Important instruments, such as the SERVPERF and the PERVAL scales, were used in this study. The respondents for this study were students enrolled in ten (10) government universities in the southern region of Thailand. A total of 768 questionnaires were distributed, and only 346 of them were usable. Approximately, 14 hypotheses were developed and tested with multiple regression and hierarchical regression analyses. The results indicated that several dimensions of service quality and academic quality were significantly related to student satisfaction, and the explanation power of the model increased from 25.6% to 33.5% when value moderated the relationship which explained the moderating effect of value. Plausible reasons for the findings were discussed within the context of the study. Both practical and theoretical contributions as well as recommendations for future research were made.

Keywords: service quality, academic quality, student satisfaction, value, and higher education in Thailand

ABSTRAK

Dalam konteks institusi pendidikan tinggi terutamanya yang berada di selatan Thailand, pencapaian kepuasan pelajar adalah sangat penting kerana beberapa sebab. Pertama, institusi pendidikan tinggi di wilayah ini kini sedang menghadapi beberapa situasi yang menyebabkan kemerosotan jumlah pelajar. Kedua, persaingan semakin bertambah pada setiap tahun sama ada dari dalam ataupun luar negara. Sehubungan dengan itu, kepuasan pelajar yang rendah menjadi isu penting untuk diselesaikan oleh institusi pendidikan tinggi. Tambahan pula, terdapat kekurangan dan batasan kajian secara mendalam di wilayah ini. Kajian lepas telah menunjukkan bahawa kepuasan pelajar dipengaruhi oleh pelbagai faktor, termasuk aspek-aspek berkaitan kualiti dan nilai. Justeru, kajian ini bertujuan untuk menilai hubungan antara kualiti perkhidmatan dan kualiti akademik ke atas kepuasan pelajar dan untuk mengukur kesan nilai yang sederhana dengan menggunakan suatu pengukuran pelbagai-item. Instrumen penting seperti skala SERVPERF dan skala PERVAL telah digunakan dalam kajian ini. Responden kajian adalah terdiri daripada pelajar yang mendaftar masuk ke 10 universiti kerajaan di wilayah selatan Thailand. Sejumlah 768 borang soal selidik telah diedarkan dan hanya 346 darinya yang boleh digunakan. Sebanyak 14 hipotesis telah dibangunkan dan diuji dengan menggunakan analisis regresi berbilang dan regresi hierarki. Hasil kajian menunjukkan bahawa beberapa dimensi kualiti perkhidmatan dan kualiti akademik mempunyai hubungan yang signifikan dengan kepuasan pelajar. Manakala kuasa penerangan model telah bertambah daripada 25.6% kepada 33.5% apabila nilai menyederhanakan hubungan-hubungan tersebut, justeru menjelaskan kesan yang diwujudkan oleh nilai. Sebab yang munasabah bagi penemuan ini telah dibincangkan dalam konteks kajian. Sumbangan dari segi praktikal dan teoritikal, serta cadangan untuk kajian masa hadapan juga turut dilakukan.

Kata kunci: kualiti perkhidmatan, kualiti akademik, kepuasan pelajar, nilai, dan pendidikan tinggi di Thailand

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CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter provides an overview of the study. It begins with the background of the study and the overview of Thailand's higher education sector before proceeding onto the problem statement. The problem statement explains the importance of service quality, academic quality, and value on student satisfaction specifically in the higher education sector in Thailand. It also defines research questions and research objectives. It is followed by the significance and scope of the study. Finally, the chapter ends with the structure of this current study.

1.1 Background of the Study

Achieving student satisfaction is the key to survival within higher education in Thailand today. This is because the effect of globalization still strongly exists. This obligates higher education institutions in Thailand and makes them realize that competitors are increasingly aware of the fact that national boundaries no longer exist. Higher education institutions need to be more concerned regarding this competitive environment triggered by various competitors who are pursuing the market place both within and outside the country.

Referring to the 'National Conference: 2009 the year of Thai higher education quality enhancement', The Education Minister, Mr. Jurin Laksanawisit lamented that qualities are important and the important point for the higher education sector in

Thailand today is that there were only seven universities which received awards for passing the quality assessment criteria conducted by the Office for National Education Standards, and seventeen universities have failed to pass this assessment. Besides this, he also encouraged universities to improve the quality of education by being more responsible and improving the courses offered to their students, declaring that he felt the standard reached in both areas had not been good enough (www.iqnewsclip.com).

Nowadays, it is noted that much of the previous studies in this area have acknowledged that customer satisfaction is the main focus by many organizations, and there is a serious attempt by the organizations to find suitable methods to increase customer satisfaction by delivering excellent service to their customers in order to increase customer satisfaction (Khan & Matlay, 2009). Thus, customer satisfaction is continuously monitored in various sectors in Thailand such as such those in the airline industry (Saha & Theingi, 2009), in the small and medium enterprises (Phusavat & Kanchana, 2008), in the banking sector (Srijumpa, Chiarakul & Speece, 2007), in the telecommunication industry (Johnson & Sirikit, 2002), and in the chain restaurant industry (Polyorat & Sophonsiri, 2010). All have reported the significance of service quality that leads to customer satisfaction.

However, within the context of higher education, it is unfortunate that the unfolding panorama related to this construct is still under investigation and has not been analyzed extensively. There still has been a dearth of empirical research and development work within the context of higher education in Thailand (Kirtikara,

2001; Komolmas, 1999). Some issues still remain unanswered and it is still reported that low student satisfaction towards university services has been detected, and students' complaints about university services do exist which is evident by several speeches and points mentioned by several prominent scholars in Thailand (Sawasdiwat, 2010; Graham, 2010; Panich, 2005; Sangnapaboworn, 2003; Kirtikara, 2001; Komolmas, 1999; Panyarachun, 1999).

Over the past several years, service quality plays its role in being an indicator of satisfaction (Spreng & Mackoy, 1996). Several studies such as those by Allred and Addams (2000), Arambewela and Hall (2009), Athiyaman (1997), Chowdhury and Prakash (2007), Saha and Theingi (2009) have proved the positive relationship between service quality and satisfaction. The importance of service quality as an indicator of satisfaction is also widely debated in the context of higher education. Several studies such as those by done by Abili, Thani, Mokhtarian and Rashidi (2011), Aldridge and Rowley (1998), Angell, Heffernan and Megicks (2008), Athiyaman (1997), Gulid (2011), Shekarchizadeh, Rasli and Hon-Tat (2011) Jain, Sinha and Sahney (2011), Karami and Olfati (2012), Petruzzellis, D'Uggento and Romanazzi (2006), Rasli, Shekarchizadeh and Iqbal (2012), asserted that service quality has a vital role towards student satisfaction.

Apart from service quality, most researchers also utilize and suggest the specific quality dimensions to measure the quality perceived by students within the higher education system. Academic quality is considered as the specific dimension that is widely used by many scholars. This is evident by empirical studies of Abouchedid

and Nasser (1999); Aldridge and Rowley (1998); Angell et al. (2008); Arambewela and Hall (2009); Athiyaman (1997); Cuthbert (1996ab); De Jager and Gbadamosi (2010); Douglas, McClelland and Davies (2008); Fernandes, Ross and Meraj (2013); Farahmandian, Minavand and Afshardost (2013); Hill (1995); Kwan and Ng (1999); Navarro, Iglesias and Torres (2005); Owlia and Aspinwall (1996); Petruzzellis et al. (2006); Parayitam, Desai and Phelps (2007). Based on the above mentioned works, academic quality has been measured on different grounds. Amongst other things, it can refer to the quality of teaching, course content instruction medium, as well as methods of teaching.

Meanwhile the relationship between quality and satisfaction is also dependent upon value as reported by Ravald and Grönroos in 1996. Previous studies by Caruana, Money and Berthon (2000); Ismail, Abudullah and Francis (2009) explore how service quality and satisfaction is moderated by the value. However, it is unfortunate that both studies encountered limitations, especially in the case of value where it is a single-item scale measurement which covers only a single dimension called 'value for money' or 'price'. Further research needs to address value as the multi-items scales measurement to reflect the greater concrete and outperform of the construct (Diamantopoulos, Sardedt, Fuchs, Wilczynski & Kaiser, 2012).

Based on the above quotes, it is evident that service quality, academic quality, value, and student satisfaction are the essential components for higher education institutions. Some issue is still remaining unanswered. Accordingly, student

satisfaction, service quality, academic quality, and value are viewed as the starting point within this area of work since there are still a number of unclear issues.

1.2 Thailand Higher Education Sector

Thailand education has been acknowledged as one of the key areas in the country development (Thailand Competitiveness Report, 2012). It is considered to be the backbone of Thailand's economic success today (Asia Education Leaders Forum, 2013). Currently, higher education opportunities are provided by 169 higher education institutions under the monitoring and controlling by the Office of the Higher Education Commission (OHEC). With 169 higher education institutions, it comprises 14 autonomous universities, 65 public universities, 40 private universities, 23 private colleges, 19 community colleges and 8 institutions (www.mua.go.th). In regard to the national budget expenditure on education, the government raised the national budget for the education sector from 262,938.3 million Baht in 2005 to 493,892 million Baht in 2013 (Bureau of the Budget, 2014). The budget tends to increase every year due to the fact that the government aims to give every Thai citizen the opportunity to study and develop Thailand as a knowledge-based society.

Thai people view individual education level as a key success factor to get a better job. The higher the educational attainment, the higher the social status is deemed to be. Thai people are willing to invest their money on education, even though the tuition fees for higher education are considered high in Thailand (Euromonitor International, 2009). There was an increase from 32.3 billion Baht in 1995 to 41.7 billion Baht in 2007 and 45.2 billion Baht in 2008 (Euromonitor International, 2009).

According to the National Statistical Office (2010), of the total educational expenses, 20 percent concerned education fees and the remaining 80 percent were related to educational expenses including clothes, food, commuting cost, educational equipment and extra tutorial classes.

In the case of student enrollment in higher education, the Office of Higher Education Commission (2013) shows that there were 1,216,512 students in 2012. The total number of students within the higher education sector each year from 2006 to 2012 was shown in Table 1.1.

Table 1.1
Numbers of Students Enrolled in Higher Education Institutions

Year	Numbers of Students
2006	2,123,024
2007	2,048,997
2008	1,730,792
2009	1,906,813
2010	1,935,311
2011	1,330,526
2012	1,216,512

Source: The Office of Higher Education Commission (2013)

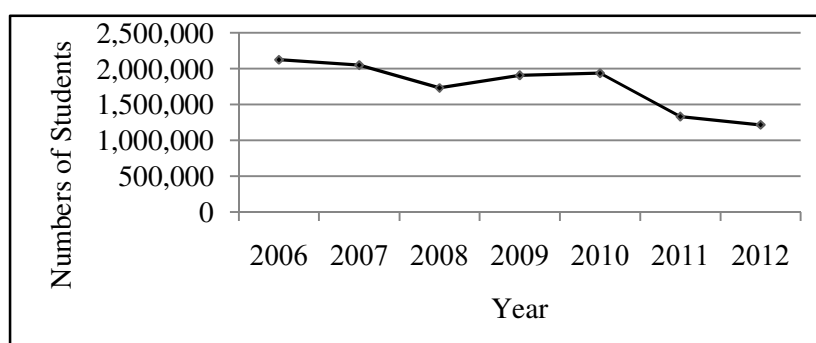


Figure 1.1
Trends of Students Enrolled in Higher Education Institutions
Source: The Office of Higher Education Commission (2013)

The current situation of universities in the southern region of Thailand is quite unique in regard to other regions. It presently has ten government universities and one public university. As it is reported by Sangnapaboworn (2003), most of the higher education institutions in Thailand or about 44 percents are located around the Bangkok metropolitan area with twice as many students than other provinces. In 2008, there were 1,730,792 students enrolled in higher education nationwide whereas only 144,140 students were enrolled in government universities in the southern region. This figure amounted to only 8 percent of higher education students in Thailand (the Office of Higher Education Commission, 2013). This reveals that the universities in this region of Thailand are not considered the first choice of study in student perspective and it becomes the challenge for universities specifically in the southern region of Thailand to survive. In addition, there is a marked contrast between an increase of course and programs offered and a decreasing number of Thai university students. This is because the students enjoy various choices of selection in terms of majors and educational institutions in Bangkok, and consequently, Thai students tended to move to study in Bangkok in the past decades (Sangnapaboworn, 2003). Thus, the universities in southern Thailand have launched market expansion effort, or at least, they have tried to keep their student quantities to sustain in the market and education industry.

The survival of government universities in the southern region of Thailand depends on satisfying the students' demands as described by one of the country's most prominent scholars in higher education, Prof. Vicharn Panich (2005). His work explains that the study on student satisfaction towards higher education should be

done as a continuous work (<http://gotoknow.org/blog/thaikm/5711>). In line with this, it is asserted by Worasinchai, Ribiere and Arntzen (2008) that the competition exists within and outside the country and that, the intensity of this competition will further increase. Thus, enhancing student satisfaction towards all aspects of the quality offered in universities as well as student value, would ensure that the universities in the southern region of Thailand are able to compete in this highly intense environment.

1.3 Problem Statement

To our knowledge, it is considered true that, in the context of higher education, student satisfaction has become the strategic concern for universities and management teams (Douglas, Douglas & Barnes, 2006). Universities that are able to provide enjoyment to their students will automatically increase student satisfaction, making them happy to continue their studies (De Jager & Gbadamosi, 2010). This satisfaction can be achieved through the offering of various kinds of service excellence which have been the main points in several previous investigations, for example, Abouchedid and Nasser, 1999; Aldridge and Rowley, 1998; Allred and Addams, 2000; Angell et al., 2008; Arambewela and Hall, 2009; Athiyaman, 1997; Chowdhury and Prakash, 2007; De Jager and Gbadamosi, 2010; Douglas et al., 2008; Farahmandian et al., 2013; Hill, 1995; Kwan and Ng, 1999; Navarro et. al., 2005; Owlia and Aspinwall, 1996; Parayitam et. al., 2007; Petruzzellis et. al., 2006; and Rasli et al., 2012. According to those studies, service quality and academic quality have been found to have a relationship with student satisfaction.

Several previous studies however, have focused mainly on the direct relationship between service quality and student satisfaction. Only limited studies have integrated academic quality as further variables that could also have a relationship on student satisfaction. In addition, although the concept of customer value has been tested and found that there is a moderating effect of value on the relationship between service quality and customer satisfaction (Caruana et. al., 2000; Ismail et. al., 2009), this assertion has not been fully performed and empirically tested. It has been tested as the single-item measurement which has shown a poor fit comparing to the multi-items scales measurement which has greater properties and is more consistent in terms of validity and reliability than a single-item measurement (Thorndike, 1967; Parasuraman, Grewal & Krishnan, 2004; Diamantopoulos et al., 2012).

Accordingly, the current study therefore aims to fulfill the deficiency of previous research studies by integrating the relationship among service quality, academic quality, value, and student satisfaction into the single framework within the context of students in government universities in the southern region of Thailand. This study also aims to fill the void in the existing stream of literature that both service quality and academic quality have a significant relationship with student satisfaction. In addition, this study also aims to explain the moderating effect of value as the multi-item measurement whereby it is hardly found in previous studies. The research questions and research objectives that have become the focus for this study can therefore be posed.

1.4 Research Questions

On the basis of the research background, this study will be guided by the following five research questions:

- (1) What is the level of student satisfaction, service quality, and academic quality in the higher education sector in Thailand?
- (2) What is the relationship between service quality and student satisfaction in the higher education sector in Thailand?
- (3) What is the relationship between academic quality and student satisfaction in the higher education sector in Thailand?
- (4) Does value moderate the relationship between service quality and student satisfaction in the higher education sector in Thailand?
- (5) Does value moderate the relationship between academic quality and student satisfaction in the higher education sector in Thailand?

1.5 Research Objectives

The research objectives for this study are:

- (1) To examine the level of student satisfaction, service quality, and academic quality in the higher education sector in Thailand.
- (2) To examine the relationship between service quality and student satisfaction in the higher education sector in Thailand.
- (3) To examine the relationship between academic quality and student satisfaction in the higher education sector in Thailand.

- (4) To comprehend the moderating effect of value on the relationship between service quality and student satisfaction in the higher education sector in Thailand.
- (5) To comprehend the moderating effect of value on the relationship between academic quality and student satisfaction in the higher education sector in Thailand.

1.6 Scope of the Study

There are three items to explain the scope of this study. Firstly, it aims to explain the relationship between satisfaction, service quality, academic quality and value within only the context of higher education. Thus, the results might not be generalized to other contexts or industries. Secondly, the location for this study is limited to only universities located in the southern region of Thailand. Finally, the respondents targeted are all undergraduate students. Postgraduate students are not covered within this study for the reason that these two types of students differ in terms of their learning methods, their perceptions towards what universities offer and their maturity stage. It should however be noted that the majority of students enrolled in universities in Thailand are undergraduate students.

1.7 Significance of the Study

The findings from this study will benefit both practitioners and academics, especially in the Thailand higher education system. The data was collected in the country where there are significant differences from other countries in terms of social and cultural factors. Therefore, new findings may be produced.

Theoretically, the study extends the stream of literature review on the relationship between service quality, academic quality, and student satisfaction. Furthermore, the role of value as a moderator also was added on to the existing findings of the previous study which mainly focused on a single-item measurement as compared to multi-items scale measurement.

For practitioners, the results of this study will enable university administration to have a better understanding of the students' needs and redesign their strategies to improve service quality, academic quality, and student satisfaction. For example, they can help to identify the strengths and weaknesses of quality dimensions or areas that positively or negatively impact student satisfaction. Universities should obviously continue their good work within the service areas that students are satisfied with, but, at the same time, try to find suitable ways to recover in the service areas that students are dissatisfied with or which students believe to have a negative impact on their education.

For academics, this study focuses on the context of higher education and highlights the relationship between service quality, academic quality, value, and student satisfaction whose investigations are limited. This study attempts to enrich the role of value as the moderator for multi-items scales measurement which would strengthen the relationship between service quality and academic quality on student satisfaction. Overall, this study will make a valuable contribution to the existing literature and provide evidence regarding the linkage of the aforementioned variables.

1.8 Organization of the Study

This study is organized into five chapters. Chapter 1 includes the background of the study, problem statement, research questions, research objectives, research significance, definitions of terms and organization of the remaining chapters. In Chapter 2, it contains literature reviews and previous studies on the subjects of student satisfaction, service quality, academic quality and value which are related to this study. Chapter 3 aims to describe the research framework and methodology as well as covering hypotheses development and methods of analysis. The results and interpretations of the statistical findings are presented in the Chapter 4. Finally, Chapter 5 summarizes the findings, subsequent discussions, implication and limitations of the study and includes a statement as to conclusion reached. The findings in the final chapter also offer additional suggestions and recommendations for further research.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter presents an overview of related literature. Several topics are covered in this chapter. The chapter commences with discussion on customer satisfaction, followed by service quality, and the differences between service quality and customer satisfaction. Next, the chapter discusses service quality and student satisfaction in higher education (HE), and approaches to measure service quality in higher education. The superiority of performance-only measurement over disconfirmation, specific instrument for measuring service quality in HE with performance-only approach and academic quality are then extensively reviewed. This chapter also presents the literature concerning the use of customer value as the moderator variable. Finally, chapter summary is presented.

2.1 Customer satisfaction

It is generally accepted by past studies that customer satisfaction is a major concern of marketers (Hawkins & Mothersbaugh, 2010). Customer satisfaction becomes a starting point with many constructs, and it relates to other approaches such as market orientation, quality and service, market-driven processes for over many years (Piercy, 1995). In addition, customer satisfaction also plays a significant benefit to the organization by helping the organization to become a market leader (Holden, 1997). Satisfied customers normally relay the good news about an organization, which in turn helps to acquire new customers (Edvardsson, 1998). Customer

satisfaction is thus important since it is found to have great impact on business and is essential for organizations to maintain and ensure business survival (Zairi, 2000).

In general point of view, customer satisfaction is “the degree of satisfaction provided by the goods or services of a company as measured by the number of repeat customers” (<http://www.businessdictionary.com>). However, a number of prominent scholars also give the meaning of customer satisfaction in many different ways. For instance, as it is explained by Oliver (1980), customer satisfaction is understood in terms of meeting or exceeding expectations. Customer satisfaction is viewed as a post-consumption evaluation to explain quality judgment. Thus, based on the proposition made by Oliver (1980), satisfaction can be gauged by the feedback gained after a product acquisition or consumption.

Another point of view regarding the customer satisfaction is concluded by Tse and Wilson (1988), which stated that customer satisfaction can be further defined as pre-expectation and post-performance responses in regard to the products or services provided. The major finding of this study reported that perceived performance has a direct significant influence on customer satisfaction. On the other hand, customer satisfaction is also can be viewed as a process and as an outcome as mentioned by Yi (1991). A process perspective is referred to the psychological process that customer contributes to satisfaction. In contrast, an outcome perspective is referred to as an ending state of customer consumption experience.

However, referring to the study made by Cronin and Taylor (1992), customer satisfaction is a transaction-specific measure of the perceived service quality. This satisfaction deals with the level of the company's service performance and it is linked to customer satisfaction. Based on this postulation, it is also supported by the article written by Owlia and Aspinwall (1996), which they suggested that in order to serve the customer needs, the organization should determine how customers perceive quality aspects. This process can be considered as the first step for the organization to satisfy their customer needs. With the explanation given by Owlia and Aspinwall (1996), customer satisfaction can be determined from customer responses in three aspects of their consumption of product or service (Giese & Cote, 2002). The first aspect is related to affective aspect of the consumption. The second aspect is dealt with the continual consumption of those specific product or service. The final aspect is concerned with the occurrence of that consumption at a certain period.

Even though there are several definitions of customer satisfaction, two popular approaches to measure customer satisfaction are summarized by Oliver (1993), as cited in Yang, Jun and Peterson (2004). Those two approaches are the transaction-specific approach and the cumulative or overall satisfaction.

- With regard to a transaction-specific approach, customer satisfaction is defined as an emotional response at the most recent transaction occurrence with an organization. Following consumption the response occurs at a certain time after a choice is made. The intensity varies according to the affective response dependent upon situation variables.

- In contrast, the overall satisfaction with regard to customers can be viewed in a cumulative evaluation fashion. This is associated with specific products and various aspects of an organization.

Consequently, it can be concluded that the aforementioned definitions share the same idea in explaining customer satisfaction: a reaction by the customer after consumption of the products or services. Customer satisfaction also deals with the emotional response and experience. Hence, understanding customer satisfaction is therefore significant for organizations in order to retain and attract customers. Prior studies of customer satisfaction have mentioned that “Core service failure” is one of the major problems that cause customers to switch their current service provider from one to another (Hawkins & Motherbaugh, 2010). This core service failure may include things like mistakes in booking, and errors in billing. Besides core service failure, ‘service encounter failures’ (such as uncaring service), impoliteness, unresponsiveness, or a lack of knowledge by employees also cause customers to switch to another service provider. Due to the crucial role of service, the next section emphasizes on the previous studies on service quality.

2.2 Service quality

The focus on quality has a profound effect on an organization (Pearson, 1997). This is because knowing customers’ perceptions can lead to establishing a better priority and strategic resource allocation to give value for money. This recognition can also be used as a platform for providing better services for customers. In other words,

with the recognition, organization will be able to provide services to meet customers' expectations (Donnelly, Wisniewski, Dalrymple & Curry, 1995).

Referring to the literature, service quality is a subjective notion with many different meanings. Nonetheless, each meaning has its own group of supporters, and there are various schools of quality (Hardie & Walsh, 1994; Yeo, 2009). In general, service quality is "an area of study that has developed to define and describe how services can be delivered in such a manner as to satisfy the recipient. High quality service is defined as delivery of service that meets or exceeds customers' expectations" (The AMA dictionary).

It is generally accepted that the basic core of the study of service quality was introduced by Parasuraman, Zaithaml and Berry (1985). They proposed that service quality deals with how well the service meets the customer expectation and its deliverance. According to their study in 1988, perceived service quality can be defined as "a global judgment or attitude relating to the superiority of the service". They also explain that the difference between expectation and performance according to a quality dimensions is a direct function of service quality.

With definitions, it has been widely accepted that service quality plays an important role to customer satisfaction. A greater emphasis on quality of service is imperative and customer's expectations have been found to be increasing (Smith, Smith & Clarke, 2007). In order to meet customers' expectations, it is essential that organizations satisfy customers' requirement and needs (Edvardsson, 1988). The

measurement of how well a delivered service matches the customers' expectations is an important factor for the organizations (Lewis & Booms, 1983).

As a consequence, in this study, the relationship between service quality and customer satisfaction is explored. However, prior to proceeding to the detail of service quality and student satisfaction, it is important to identify the differences between service quality and customer satisfaction in the following section.

2.3 Distinguishing Service Quality and Customer Satisfaction

Service quality and customer satisfaction are distinct and inseparable. This relationship led to considerable debates by several studies such as Douglas et al. (2008) in UK higher education sector; Jaiswal (2008) in call centre sector; and Rust, Danaher and Varki (2000) in telecommunication industry. This promotes continuing investigation by researchers and practitioners on all important aspects of these two variables (Athiyaman, 1997). A greater understanding of the relationship between perceived service quality and satisfaction is needed and it is imperative to understand how they differ (Spreng & Mackoy, 1996). Nonetheless, service quality and customer satisfaction are related and most of the practitioners often assume that service quality is the same as customer satisfaction because these two constructs revolve around consumer expectation, experience, perception, and evaluation of their consumption (Jamali, 2000). However, they are evidently different and service quality can be treated as a prerequisite to customer satisfaction. Many studies report that they are associated, and indicate that service quality leads to customer satisfaction (Baker & Crompton, 2000; Lee, Lee & Yoo, 2000; Oliver, 1993;

Polyorat & Sophonsiri, 2010; Ruyter, Bloemer & Peeters, 1997; Spreng & Mackoy, 1996). A number of distinctions between service quality and customer satisfaction are found (Caruana et al., 2000).

Based on a work done by Johnston (1995), customer satisfaction and service quality are different because satisfaction is the consequence of customer's encounter with the service transaction and their overall experience with those encounters. Service quality, on the other hand, can be regarded as the customer's overall feeling with the organization and its services which is particularly related to the level of inferiority and superiority. In addition, referring to the study done by Ruyter et al. (1997), satisfaction is suggested to be of greater importance than service quality, and an increase in service quality leads to greater satisfaction. Accordingly, it is suggested that customer satisfaction may be a better alternative to marketers than service quality, and perception of the service performance is the most important indicator of service quality.

It is also mentioned by Aldridge and Rowley (1998) that service quality differs from satisfaction in terms of satisfaction relates to specific transactions, and that service quality is a general attitude. In this regard, it is imperative for the organizations to identify and respond to the incidents that lead to dissatisfaction and satisfaction. The identification of service quality dimensions that are suitable in the context of the study is imperative to predict the level of satisfaction. Many scholars assert that service quality is an important indicator of customer satisfaction (Caruana et al., 2000; Cronin & Taylor, 1992; Spreng & Mackoy, 1996).

Service quality and customer satisfaction are independent to each other and are very different from the customer's point of view (Sureschandar, Rajendran & Anantharaman, 2002). They are closely related since a high correlation exists between them, but it is important for researchers to evaluate customer satisfaction separately from service quality even though they are found to be connected (Dabholkar, Shepherd & Thorpe 2000; Jamali 2000). The higher the service quality, the more satisfied customers are (Petruzzellis et al., 2006). Customers are satisfied when the level of service meets their expectations to the degree that the service surpasses and goes beyond their expectations. Consequently, it can be found that service quality and satisfaction are different as asserted by many scholars. The next session therefore aims to explain the previous studies of service quality and student satisfaction, especially in the context of higher education.

2.4 Past Studies on Service Quality and Student Satisfaction

Customers view different service types with a different priority of determinants of service quality. It is of real importance that service providers fully understand their customer's specific needs and not take them for granted. So, in order to create service quality, the providers have to understand the unique characteristic of their services (Gummesson, 1991; Chowdhury & Prakash, 2007).

According to an article by Shanahan and Gerber (2004), quality is portrayed to be important in various types of organizations. However, based on their study, which focuses especially in the higher education institutions, they summarize the important of quality into eight important concepts that the stakeholders with the environment of

higher education understand 'quality' in terms of: 1) quality as a public image, 2) quality as leadership, 3) quality as value for money, 4) quality as value-added service, 5) quality as resources, 6) quality as work practices, 7) quality as intrinsic goodness, and 8) quality as satisfaction.

Service quality and customer satisfaction are important issues for higher education (Douglas et al., 2008) and it is crucial that study about quality is adopted by higher education institutions (Sohail, Rajadurai & Rahman, 2003). Previous research studies have reported the importance of service quality and customer satisfaction since the 1990s until the present time.

Hill (1995) conducted an exploratory study to measure service quality of accounting undergraduate student in UK universities. The service factors used in this study cover both academic and non-academic areas such as the quality of teaching, computer laboratories, library service, bookshop in the campus, university financial service, health service, and accommodation service. The findings of this study reveal that the students in difference years of study judge the importance of service factors differently. For example, first year students see 'careers service counseling' as the least important factor for their quality judgment; meanwhile, third year students rank the factor as the most important for them. Moreover, students seem to become more demanding over time since it is found in this study that the longer year of study results in the better abilities of students to evaluate quality of service they have experienced.

In higher education, students are obviously the most important customers (Cuthbert, 1996ab). In this case “customers” refer to ‘students’ as mentioned by Sax (2004) who stated that students at a college or faculty are indeed ‘customers’. Thus, the measurement of service quality in higher education should mainly focus on students (Angell et al., 2008).

Owlia and Aspinwall (1996) proposed the six quality dimensions for the higher education study that includes: tangibles, competence, attitude, content, delivery, and reliability. However, the authors suggested that the empirical study is needed to examine whether this framework is suitable in the context of higher education.

Athiyaman (1997) explored the relationship between student satisfaction and perceived service quality and its importance in higher education context. Many services factors are concluded as the important fundamental to measure this connection. These factors consist of 1) emphasis on teaching students well, 2) availability of staff for student consultation, 3) library services, 4) computing facilities, 5) recreational facilities, 6) class sizes, 7) level of difficulty of subject content, and 8) student workload. Based on these factors, an empirical work was tested with students in Australia. The results of this study reported that each university should ensure that all the service offered to the students are properly managed to enhance student satisfaction. Perceived service quality can affect not only student satisfaction but also behavioral intention and communication behavior.

Aldridge and Rowley (1998) developed a model to measure student satisfaction in UK with the questionnaire based survey. Eight dimensions are covered in this study: 1) personal and course details, 2) teaching and learning, 3) teaching and learning support, 4) teaching and learning development, 5) services and facilities for students, 6) equal opportunities, disability and environment, 7) communication, consultation, feedback and complaints, and 8) evaluation. They conclude that even though the questions or items to measure student satisfaction may vary across institutions, they share the same results in seeking the causes of their student satisfaction or dissatisfaction.

Kwan and Ng (1999) conducted a comparison study between students in two countries (Hong Kong and China) to measure the quality of service in higher education. 51 attributive statements on a seven-points Likert scale covers: 1) course, 2) concern for students, 3) facilities, 4) assessment, 5) medium of instruction, 6) social activities, and 7) people. A total of 800 questionnaires were distributed to students in both countries by using the stratified random sampling method. The students in Hong Kong indicate that the factors in determining their satisfaction are course content, assessment, concern for students and facilities. Meanwhile, the students in China point out that the factors that relate to their satisfaction are course content and facilities. However, the authors asserted that cultural differences have an impact in their satisfaction evaluation by stating that “Hong Kong students are more pragmatic and instrumental, focusing on how to get distinctions, while the Chinese students are more concerned with the quality of material emphasized in the course.”

Yorke (1999) mentioned that within higher education institutions, students act as both customers and partners. This concept is supported by Khan and Matlay (2009) who also highlight that student acts as both stakeholders and the main customers. In addition, the results of the study by Khan and Matlay (2009) emphasized that service excellence for higher education should not be referred to as an approach or program but should instead be considered as a continuous activity for higher education and the deliverance of high quality.

Oldfield and Baron (2000) measured student perceptions of service quality in a UK university business and management faculty by comparing the first and final year students. The SERVPERF statements are instrument used in this study, and the service quality for this study is measured as an attitude according to the suggestion made by Cronin and Taylor (1992). A total of 87 first year students and 67 final year students answered the questionnaire. The results of this study show that there are three important factors that a university needs to fulfill in order to satisfy their students: requisite, acceptable and functional factors. Requisite factors are referred to as encounters which are essential to enable student to fulfill their study obligations. Acceptable factors are encounters which students acknowledge as being desirable but not essential during their course of study. Functional factors are encounters of a practical or utilitarian nature. In addition, student experience is the cause of change in terms of student perceptions about service quality when comparing between first year and final year student.

Abouchedid and Nasser (2002) examined the service quality in the private university in Lebanon. Students from six faculties are the samples of this study and the sampling procedure is based on the mixture of random and cluster sampling techniques. A 17-items scale is used to measure the university registration and advising process. The results of this study show that student dissatisfaction is found in regard to payment of fees, time taken to complete registration, and the fee settlement process. However, students are also satisfied with the registration and advising process in terms of course offering and location, and the efficiency of academic advisors. The study by these scholars shows that universities should provide a high quality of service so that they can satisfy students' needs. They also prove that the study of service quality can be applied to the context of higher education. Knowing students' attitudes will indicate what should be done to satisfy them.

O'Neill (2003) tested the effects of time on student perceptions using SERVQUAL model. This study was conducted in Australia. About 675 first year students were requested to complete the questionnaire during their orientation period. This study has proposed the longitudinal approach to the evaluation of the service in higher education. The author further explained that there is a need to gather information on students' expectations before and during the educational experience due to the fact that student's perceptions change overtime. This would benefit in terms of enabling the service provider to understand quality improvement and better explain long-term relationships.

Rowley (2003) explained the reasons why researchers should collect student's feedback as a primary source of data in higher education to obtain the information on what students have reflected, and to seek the way for improvement the quality of their learning and courses. In addition, it is imperative for the universities to get the indicators of their improvement and their benchmark. Moreover, it is the channel for students to show their feelings of their satisfaction and experience with the institution.

O'Neill and Palmer (2004) measured three quality dimensions (process, empathy and tangible) that affect the continuous quality improvement in the context of Australia. The items to measure are adapted from SERVQUAL model and the three dimensions mentioned above are used to measure using the importance-performance analysis technique (IPA). The results of this study indicated that the service quality dimensions needed to be improved. Students ranked tangibles and process as the highest performance quality dimensions that universities offered to students; meanwhile, students judged the empathy dimension to have achieved the lowest performance. In addition, it is suggested in this study that universities should seek possible corrective action for improving the area of service quality perceived to have low performance and try to change students' perception towards service quality from negative to positive performance. Finally, the authors further suggested that the use of student research is the best way to identify and evaluate students' service experiences.

Lagrosen, Seyyed-Hashemi and Leiner (2004) examined the dimensions which constitute the quality in higher education in Austria and Sweden. A total of 32 statements, ranging from “not at all important” to “extremely important” (utilizing a 7 level interval scale), are used as a mode of measurement. It is found that there are 7 dimensions that found to be the most important quality dimensions: 1) corporate collaboration, 2) information and responsiveness, 3) course offered, 4) internal evaluations, 5) computer facilities, 6) collaboration and comparisons, and 7) library resources. Even though this study is the comparative study between students in two different countries, a difference in terms of results is not found.

Navarro et al. (2005) explored the relationship between different areas of satisfaction experienced by the course attendees (students) in the context of higher education in Spain. They mentioned that there are many dimensions which are considered as factors of satisfaction. The dimensions for this study include: facilities, teaching staff, teaching methods, environment, enrolment, and support services. 442 students are requested to complete the self-administered survey and 369 are valid questionnaires. In view of the results, there are 3 factors that play a significant role in determining student satisfaction: teaching methods, course administration, and teaching staff. Moreover, it is revealed that there is a positive and significant relationship between student satisfaction and student loyalty.

Douglas et al. (2006) used the IPA technique to measure student satisfaction at a UK university to determine which aspects of the university’s service are most important and the degree to which they affect the students. The service quality attributes for

this study cover: 1) the physical or facilitating goods, 2) the explicit service, and 3) the implicit service. The results of this study indicated that the quality of teaching and learning experience is of importance in the students' perspective. However, it is also found that the physical facilities are the least important in measuring student satisfaction for this study.

Petruzzellis et al. (2006) examined the quality of academic and non-academic aspects that affect student satisfaction in the University of Bari, Italy. A total of 1,147 students in 12 faculties in the university are selected as the representatives of the total number of students. 19 service factors are utilized in this study: 1) lecture halls, 2) laboratories, 3) equipment, 4) library, 5) refectories, 6) accommodation, 7) leisure, 8) language courses, 9) scholarships, 10) educational offer, 11) internet access, 12) exam booking, 13) contacts with teachers, 14) administrative services, 15) tutoring, 16) counseling, 17) internship, 18) International relationship, and 19) placement. The results of this study indicate that students regard lecture halls, laboratories, equipment to support the teaching, accommodation, libraries, scholarships, and internet facilities as the important factors for their evaluation of services quality offered by the university. Moreover, the authors of this study also suggested that student satisfaction is a strategic asset to be retained. Hence, in order to better serve the students, the assessment of university's performance by testing quality of services and student satisfaction are unavoidable.

Angell et al. (2008) explored the service attributes that affect postgraduate students' quality evaluation in a UK university. The service factors for this study cover; 1)

academic factor, 2) leisure factor, 3) industry link, and 4) cost/value for money. The results of this study, based on important-performance analysis (IPA), suggest that the academic factor and industry links are placed in the high priority area. In contrast, leisure and cost/value for money are placed in the low priority area on IPA matrix.

Douglas et al. (2008) developed a conceptual model of student satisfaction within higher education in the UK. Both qualitative and quantitative techniques are used in this study. The results of this study indicate that responsiveness, communication and functionality are the important determinants for teaching, learning, and assessment aspects. Meanwhile, responsiveness, access, and socializing are found to be the important determinants in regard to ancillary services such as layout and decoration of library facilities, and catering facilities.

Hishamuddin and Azleen (2008) examined the relationship between service quality and satisfaction among the students in the higher education sector in Malaysia. The results of this study indicate that there are positive relationships between tangibility, reliability, responsiveness, assurance, and empathy with student satisfaction. In addition, the two dimensions of empathy and assurance are two critical factors that contribute most to student satisfaction.

Yeo (2008) conducted an in-depth interview with academics, students and graduates to seek the influence of service quality in higher education in Singapore. The interviewees consist of 18 academics, 10 students, 10 graduates, and 5 industry representatives. The content analysis technique is used. The results indicate that

different groups of interviewees have different points of view. In the opinion of students, 'customer focus' is seen as an important factor of service quality in higher education because it can change their way of thinking, by means of such as 'transaction', to the new mental mode. In regard to how does quality course design and delivery contribute to service quality in higher education, students explain that 'variety' is the key to their learning enjoyment. A variety in terms of multiple source of information would help them to have a more active engagement in their learning process. Concerning what support services are required to enhance service quality in higher education, students point out that the support services are not vital but the level of control over the various learning support services is mostly counted or considered.

Arambewela and Hall (2009) examined the level satisfaction in both educational and non-educational services with the international postgraduate students from Asian countries studying at five universities in Australia. This study describes the concept of customer satisfaction as the difference perceived by students between expectations and performance of the product or service. The results show that both educational and non-educational services (education, social orientation, economic orientations, safety, image and prestige, and technology) are impacted, and largely result in student satisfaction. Moreover, it is found that the factor 'education' (referring to feedback from lecturers, good access to lecturers, and quality of teaching) is the most important variable that influences student satisfaction.

According to Khan and Matlay (2009), the introduction of service excellence is imperative for higher education to ensure its customer satisfaction both internally and externally. This is due to the increasing expectations from both students and other stakeholders. Students anticipate their investment for the education should be able to pay them back with suitable return. Service excellence thus becomes the primary element for the higher education sector in attaining and maintaining its competitiveness.

De jagar and Gbadamosi (2010) measured the quality of service in South Africa higher education. The authors aim to seek whether the service quality in higher education is a multidimensional measure and to test significant relationship among the service quality measure, intention to leave the university, trust in management of the university, and overall satisfaction with the university. Total 13 factors are tested with 391 students in the management faculty in two universities. The factors in this study include: internationalization, marketing and support, access and approachableness of service, international student and staff, academic reputation, student focused, academic quality, variety and reach, location and logistics, accommodation and scholarship, sport reputation and facilities, safety and security, and parking. It is evident that over 60 percent of students are satisfied with their university. The thirteen factors are found to be a key dimension of service quality. The hypotheses testing results indicate that, 1) measuring service quality in higher education is a multidimensional measure, and 2) there is a significant intercorrelation among service quality measure, intention to leave the university, trust in management of the university, and overall satisfaction with the university.

Abili et al. (2011) investigated the quality gap (students' expectation and perceptions) of the university service at the University of Tehran in Iran with 300 students. Based on their study, the use of SERVQUAL model is utilized to measure the service quality in terms of students' perceptions and expectations. The results of this study reveal that there is still a gap between students' expectations and perceptions. The quality of service in tangibles, reliability, and empathy dimensions falls below the students' expectations while the other two dimensions (responsiveness and assurance) are at a satisfactory level.

Jain et al. (2011) proposed the conceptual framework for higher education institutions to improve the quality of services they provide. Based on this study, it is important to view service quality as a multidimensional and hierarchical construct in which this service quality can be comprised of various sub-dimensions which cover two primary dimensions: program quality and quality of life. For program quality, the author stated that the curriculum (referring to the program content), industry interaction (the practical and industry exposure students gained), input quality (the quality of students and faculty in the institution), and academic facilities (the library, computer facilities and laboratories) are the guidelines for the higher education institutions to gauge the program quality that they offer to their students. As for the quality of life, it is observed that factors such as non-academic processes (extra activities), support facilities (such as hostel and hospital on campus), campus (location and campus environment), and interaction quality (how students perceived service delivery) can be considered as the principles to measure the quality of life

that their students encounter. However, the suggested conceptual model from this study has not been tested empirically.

Shekarchizadeh et al. (2011) assessed the service quality of postgraduate students enrolled in Malaysian universities. The dimensions of the study cover professionalism, reliability, hospitality, tangibles, and commitment. It has found that postgraduate students dissatisfied with all the studied dimensions of service quality as indicated by significantly negative values between students expectation and perceptions toward the university services.

Karami and Olfati (2012) examined six dimensions of service quality based on the modified SERVPERF instrument toward student satisfaction in Iran. The students in high-ranking business schools were the targeted respondents in this study. The study result reveals that all six dimensions of service quality namely tangibles, reliability, empathy, employee, professor, and career guidance, are found to be both significant and insignificant with student satisfaction. Students are satisfied with reliability and professor dimensions. However, they are not satisfied with career guidance and employees dimensions offered by universities. Meanwhile, the rest of studied dimensions (empathy and tangibles) are found to be not crucial variables in the students' point of view in regard to their satisfaction.

Rasli et al. (2012) examined the service quality of top five public universities in Malaysia in the perspective of Iranian postgraduate students. The modified service quality (SERVQUAL) which based on “gap” between student expectation and

perception was used as the instrumentation for the study. The results of the study show that Iranian students are dissatisfied with service quality offered by public universities in Malaysia which similar to the host students. This failure in service quality is occurring in all sub-dimensions of service quality: empathy, reliability, responsiveness, assurance, and tangible. In addition, it is also addressed by this study that the changing of various things such as study environment, study protocol, culture, and psychological factors may lead to the dissatisfaction.

Farahmandian et al. (2013) proposed that student satisfaction can be affected by four dimensions of service quality (advising, curriculum, teaching quality, financial assistance and tuition costs, and facilities). With this postulation, the data were collected with the sample size of 225 postgraduate students at the international business school of Universiti Teknologi Malaysia. This study found that only one dimension of teaching quality does not impact student satisfaction, whereby the rest of studied dimension have impact on student satisfaction.

Referring to the study of Fernandes et al. (2013), the student satisfaction in the context of higher education in the United Arab Emirates (UAE) depends on several factors such as teaching quality, assessment and feedback, academic support, organization and management of programs, library services, and IT resources which were tested as the variables that could affect to student satisfaction, student loyalty, and recommendations. The findings of this study reveal the significant effect of teaching quality, academic support, and organization and management of program on

satisfaction. Meanwhile, library service, and assessment feedback are found to have an insignificant effect on satisfaction in this study.

Wilkins and Balakrishnan (2013) set out to determine student satisfaction within the United Arab Emirates higher education context. Forty-nine items covering six dimensions namely quality of lecturers, program quality, assessment and feedback, quality and availability of resources, effective use of technology, and facilities and social life were used. A total of 247 undergraduate and postgraduate students were the target respondents for this study. The result of this study pointed out that three dimensions (quality of lecturers, quality and availability of resources, and effective use of technology) affect student satisfaction. Besides this, the study also discovers that students in the different levels of study think differently. Postgraduate and undergraduates are different in terms of their satisfaction which is induced by their personality differences, their cultural differences, and their nationalities differences.

To this point, it is apparent that the relationship between service quality and satisfaction do exist and closely relate in the higher education context. Several empirical studies have been conducted to establish the link between service quality and student satisfaction (Abili et al., 2011; Abouchedid & Nasser, 2002; Aldridge & Rowley, 1998; Arambewela & Hall, 2009; Athiyaman, 1997; Angell et al., 2008; De Jagar & Gbadamosi, 2010; Douglas et al., 2006; Douglas et al., 2008; Fernandes et al., 2013; Hill, 1995; Hishamuddin & Azleen, 2008; Khan & Matlay, 2009; Kwan & Ng, 1999; Lagrosen et al., 2004; Navarro et al., 2005; Oldfield & Baron, 2000; O'Neill, 2003; O'Neill & Palmer, 2004; Owlia & Aspinwall, 1996; Petruzzellis et al.,

2006; Rasli et al.,2012; Yeo, 2008). In other words, an increase in service quality would result in the same increase of student satisfaction. Thus, universities should concentrate on reducing any dissatisfaction to enhance student satisfaction (Douglas et al., 2006). Student feedback is desirable as a form of surveys to monitor their satisfaction. The sustainability of service quality can be translated into competitive advantage that increases the uniqueness of institutions, which in turn would help an institution to offer the greater choice for students and enrich their learning pathways (Altbach & Knight, 2007). The appropriate studies of satisfaction relating to students allow the universities to meet their market needs better (Petruzzellis et al., 2006).

As suggested by the above literatures, the relationship between service quality and student satisfaction is widely observed in many countries. However, an important gap can be observed: the service quality and student satisfaction relationship has not been revealed enough in the context of Southeast Asia and especially in Thailand. Additionally, the results of these previous studies also point out that there are various measures and approaches to examine service quality and student satisfaction. For instance, (1) service quality can be measured by disconfirmation or performance-only approach, (2) service quality attributes for each institutions that are measured also differ from each others, and (3) some institutions view student satisfaction as a gap between students' expectation and perceptions while some institutions see service quality and student satisfaction as a separate construct and measured them differently. Apparently, the selection is based on the judgment of the researcher and the nature of the institutions. Table 2.1 shows the summary of research on the linkage between service quality and student satisfaction in higher education sectors.

Table 2.1

Summary of Research on the Linkage between Service Quality and Customer Satisfaction in higher education

No.	Author(s)	Context	Instrument
1	Hill (1995)	Accounting graduates in UK	-Both academic and non-academic factors -Discrepancies between expectations and perceived experienced.
2	Owlia and Aspinwall (1996)	-Proposed conceptual framework	-Both product's quality dimensions and software quality - 6 higher education service quality dimensions 1)tangibles 2)competence 3)attitude 4)content 5)delivery 6)reliability
3	Athiyaman (1997)	Medium sized university in Australia	- 8 quality attributes 1) emphasis on teaching students well 2) availability of staff for student consultation 3) library services 4) computing facilities 5) recreational facilities 6) class sizes 7) level and difficulty of subject content 8) student workload
4	Aldridge and Rowley (1998)	Proposed a suitable approach to the measurement of student satisfaction	- Suggested that the different institutions (and even different academic departments within the same institution) use different questions on student evaluation

Table 2.1 (continued)

No.	Author(s)	Context	Instrument
5	Kwan and Ng (1999)	Hong Kong and China	- 51 attributes covering 1) course content 2) concern for students 3) facilities 4) assessment 5) medium of instruction 6) social activities 7) people
6	Oldfield and Baron (2000)	Students in a business and management faculty in UK	- SERVPERF statements covering: 1) requisite factor 2) acceptable factor 3) functional factor
7	Abouchedid and Nasser (2002)	University in Lebanon	- 17 items from the Office of Tests, Measurement, and Evaluation (OTME)
8	O'Neill (2003)	University in Western Australia	- Modified SERVQUAL
9	O'Neill and Palmer (2004)	Students in Australia	-SERVQUAL -IPA
10	Lagrosen et al. (2004)	Business students from Swedish, Australian and the UK	- 11 quality dimensions 1) corporate collaboration 2) information and responsiveness 3) course offered 4) campus facilities 5) teaching practices 6) internal evaluations 7) external evaluations 8) computer facilities 9) collaboration and comparisons; 10) post-study factors 11) library resources

Table 2.1 (continued)

No.	Author(s)	Context	Instrument
11	Navarro et al. (2005)	University in Spain	- 3 dimensions 1) teaching staff 2) teaching methods 3) course administration
12	Douglas et al. (2006)	Students in the UK	- 6 dimensions 1) lecture 2) tutorial facilities 3) ancillary facilities 4) facilitating goods 5) explicit service 6) implicit service
13	Petruzzellis et al. (2006)	Students at the university of Bali, Italy	- Questions cover both teaching and non-teaching
14	Angell et al. (2008)	Students in the UK	- 20 attributes service factors covering: 1) academic factor 2) leisure factor 3) industry like factor 4) cost/ value for money
15	Douglas et al. (2008)	-Students in the UK	- Both qualitative and quantitative approach - CIT technique - Quality dimensions covering 1) teaching 2) learning 3) assessment 4) ancillary services
16	Hishamuddin and Azleen (2008)	- Students in private higher education in Malaysia	- 46 questions adapted from Parasuraman et al. (1990) and with some items extracted from LeBlance and Nguyen (1997) which covers five dimensions in service quality - 6 questions from Athiyaman (1997) to measure student satisfaction

Table 2.1 (continued)

No.	Author(s)	Context	Instrument
17	Yeo (2008)	- Singapore higher education	- In-depth interview
18	Arambewela and Hall (2009)	- Four group of students from China, India, Indonesia and Thailand undertaking study in Australia	-SERVQUAL
19	Khan and Matlay (2009)	- Higher education in the UK	- Qualitative approach
20	De Jagar and Gbadamosi (2010)	- Higher education in South Africa	- 13 specific factors for higher education sector
21	Narenji et al., (2011)	- University of Tehran (Iran)	-SERVQUAL
22	Jain et al. (2011)	Proposed conceptual framework for measuring service quality in the context higher education	- 8 sub-dimensions covering both program quality and quality of life
23	Shekarchizadeh et al. (2011)	International students in public universities in Malaysia	- 6 dimensions (professionalism, reliability, hospitality, tangibles, and commitment)
24	Karami and Olfati (2012)	Students in high-rank business schools in Iran	- modified SERVPERF including 6 dimensions (tangibles, reliability, empathy, employee, professor, and career guidance)
25	Rasli et al. (2012)	Iranian postgraduate students undertaking study in top five public universities in Malaysia	- the modified SERVQUAL

In measuring that service quality, there are two main measurement approaches. The next section presents two well-known approaches to measure service quality, called 'Disconfirmation' and 'Performance-only' measurement.

2.5 Approaches to Measure Service Quality in Higher Education

(Disconfirmation versus Performance-Only Measurement)

Service quality can be measured in many ways. There are about nineteen conceptual service quality models reported during 1984-2003 and each of them represents different points of view about services (Seth & Deshmukh, 2005). The two most classical popular measurement models are the disconfirmation or gap model (SERVQUAL) developed by Parasuraman et al. (1985), and the performance-only measurement (SERVPERF) developed by Cronin and Taylor (1992).

There are many suggestions from scholars that the selection of a measurement model of service quality must suit the nature of the service type and be based on the judgment of the researcher. However, the SERVQUAL instrument developed by Parasuraman et al. (1985) is still popular and many researchers utilize this instrument for their work.

Donnelly et al. (1995) claimed the SERVQUAL instrument as one of the most potential mechanisms for measuring service quality because it is widely used in both private and public organizations. Moreover, it is further emphasized that SERVQUAL instrument is suitable for investigating both customer expectations and their perceptions of service quality and the gap between them.

Bloemer and Dekker (2007) explained that customers' expectations are confirmed when their perceptions exactly meet their expectations. Disconfirmation will be the result of a discrepancy between their expectations and perception. The two types of disconfirmation can be identified as:

- Positive disconfirmation which occurs when perception exceeds expectation
- Negative disconfirmation which likely result in dissatisfaction

Angell et al. (2008) identified SERVQUAL as the American model which is based on the gap between expectation and perception of service quality. This gap is used to gauge the service quality. The evaluations of this gap will result in customer confirmation or disconfirmation.

Conversely, there were many arguments against the SERVQUAL model. Cronin and Taylor (1992) claim that it is 'inadequate' and they suggest that the 'expectation' measure is irrelevant and confusing. They proposed a second, alternative model called 'SERVPERF' which discards the disconfirmation principle and utilizes a 'performance only' in the measurement of service delivery. Aldridge and Rowley (1998) supported the SERVPERF model and believed that service quality should be defined simply in terms of perception.

2.6 The Superiority of Performance-Only Measurement over Disconfirmation

A consensus exists on the most suitable method. The individual researcher needs to judge and select the most appropriate framework for a given situation (Angell et al., 2008). According to several studies, the disconfirmation approach indicates a 'poor fit' in certain cases. According to Maddern, Maull and Smart (2007), the SERVQUAL model causes confusion among researchers, and an increasing number criticize SERVQUAL in several situations.

Cronin and Taylor (1992) indicated that SERVPERF measure (performance-only) is a better performer than any other measure of service quality. It has greater predictive power (the ability to provide an accurate service quality score) than SERVQUAL. They argued that it is the best indicator of service quality. Previous studies such as Dabholkar et al. (2000) and Wang, Lo and Hui (2003) supported the proposition of Cronin and Taylor (1992), and utilized SERVPERF to measure service quality on their work.

Cronin and Taylor (1992) and Oldfield and Baron (2000) provided reasons and evidence that SERVPERF is more efficient as it reduces by fifty percent the number of items that must be measured. In addition, Nejati and Nejati (2008) suggested that SERVPERF scale is easy to calculate and more concrete than SERVQUAL.

Buttle (1996) criticized on SERVQUAL instrument for its theory and operation. On the theoretical side, the main criticism is the process orientation of SERVQUAL. This mainly refers to the process of service delivery and not the outcome of the

service encounter. Little evidence exists in service quality assessment by customers in terms of the gap between customers' perception and expectation. On the operational side, since consumers use other standards than expectations to evaluate service quality, therefore SERVQUAL fails. It neglects to measure the absolute service quality expectation, and respondents may be bored or confused by the measure of perception and expectation (P-E).

Cuthbert (1996a,b) viewed SERVQUAL as the instrument that seems to attract most of the researchers. However, there are a number of criticisms take place. Cronin and Taylor (1994) indicated that SERVQUAL fails to exhibit construct validity. Lee et al. (2000) pointed out that the SERVPERF explains more variance in overall service quality than the SERVQUAL method. Moreover, Jain and Gupta (2004) examined the validity, reliability and methodological soundness of SERVQUAL and SERVPERF instrument, and indicated the SERVPERF scale to be superior to the SERVQUAL scale.

Within the field of higher education, Cuthbert (1996a,b) assumed that service quality can be evaluated by a specific instrument. Aldridge and Rowley (1998) also stated that different institutions use different questions on student evaluation forms. They suggested that researchers should take into account the diverse nature of the student body to design, evaluate, and elicit a high response rate. Utmost importance is the consideration of the specific instruments to represent and be applicable for the higher education setting.

2.7 Specific Instruments for Measuring Service Quality in Higher Education with Performance-only Approach

The performance-only measurement is suggested to be used in studies on higher education. However, many suggestions also exist regarding the specific instrument for measuring service quality in higher education. Rowley (1997) suggested researchers need to design a specific instrument for measuring quality in higher education. Cuthbert (1996a,b) also recommended that elements of service quality should be revised and a higher education specific instrument should be constructed.

Brochado (2007) examined the performance of five alternative measurements of service quality in higher education sector that consisting of; (1) SERVQUAL, (2) importance-weighted SERVQUAL, (3) service performance (SERVPERF), (4) importance-weighted SERVPERF, and (5) higher education performance (HEdPERF) developed by Firdaus (2005). The objective of this study is to compare the statistical proprieties of those alternative measurements model. The results of the review show that the two measurements model namely SERVPERF and HEdPERF can better represented the superior measurement properties than other models.

2.8 Academic quality

It is suggested by many scholars such as Cuthbert (1996ab); Rowley (1997) and Jamali (2007) that there should be the specific dimensions in measuring the quality in higher education. Measuring service quality in higher education with five quality dimensions developed by Parasuraman et al. (1985) appeared to be insufficient in explaining the quality perceived by students in higher education. The following table

presents the authors and their location, and highlights the different specific dimensions that have been used to measure education due to studies being conducted from different perspectives. There are various aspects and dimensions to measure quality perceived by students within the higher education. Those dimensions aim to directly explain the students' experiences towards the university's offering. In the Table 2.1, the summary of the specific quality dimensions apart from service quality dimensions apart from service quality dimensions found in the stream of literature is shown.

Table 2.2
*Quality Dimensions Measured in Higher Education Apart From
 Five Basic Quality Dimensions Developed By Parasuraman et al.,(1985)*

Author(s)	Location	Dimensions
Hill (1995)	UK	1. Teaching 1.1 course content 1.2 quality of teaching 1.3 teaching methods 1.4 personal contact with academic staff for discussion of questions and/or problems; feedback on academic performance and progress 2. Student involvement 3. Joint consultation 4. Work experience (placement) 5. Computing facilities 6. Library service 7. University bookshop 8. Careers service 9. Counseling/welfare 10. Financial service 11. Accommodation service 12. Students' union 13. Catering service 14. Psychical education 15. Travel agency
Owlia and Aspinwall (1996)	N/A	1. Tangibles 2. Competence 3. Attitude 4. Delivery 5. Reliability

Table 2.2 (*continued*)

Author(s)	Location	Dimensions
Athiyaman (1997)	Australia	<ol style="list-style-type: none"> 1. Emphasis on teaching student well 2. Class sizes 3. Level and difficulty of subject content 4. Student workload 5. Availability of staff for student consultation 6. Library services 7. Computing facilities 8. Recreational facilities
Kwan and Ng (1999)	Hong Kong and China	<ol style="list-style-type: none"> 1. Course content 2. Concern for student 3. Facilities 4. Assessment 5. Instruction medium 6. Social activities 7. People
Abouchedid and Nasser (2002)	Lebanon	<ol style="list-style-type: none"> 1. Student registration 2. Advising scale
Navarro et al. (2005)	Spain	<ol style="list-style-type: none"> 1. Teaching methods 2. Course administration 3. Teaching staff 4. Enrolment 5. Infrastructures
Petruzzellis et al. (2006)	Italy	<ol style="list-style-type: none"> 1. Quality of teaching 2. Non-teaching services

Table 2.2 (continued)

Author(s)	Location	Dimensions
Angell et al. (2008)	UK	<ol style="list-style-type: none"> 1. Academic factor 2. Leisure factor 3. Industry link factor 4. Cost/value for money factor
Arambewela and Hall (2009)	Australia	<ol style="list-style-type: none"> 1. Education 2. Social orientation 3. Economic consideration 4. Safety 5. Image and prestige 6. Technology 7. Accommodation
De Jager and Gbadamosi (2010)	South Africa	<ol style="list-style-type: none"> 1. Internationalization 2. Marketing and support 3. Access and approachableness of service 4. International student and staff 5. Academic reputation 6. Student focused 7. Academic quality 8. Variety and reach 9. Location and logistics 10. Accommodation and scholarship 11. Sport reputation and facilities 12. Safely and security 13. Parking
Farahmandian et al. (2013)	Malaysia	<ol style="list-style-type: none"> 1. Advising 2. Curriculum 3. Teaching quality 4. Financial assistance and tuition costs 5. Facilities

Table 2.2 (*continued*)

Author(s)	Location	Dimensions
Fernandes et al. (2013)	United Arab Emirates	<ol style="list-style-type: none">1. Teaching quality2. Assessment and feedback3. Academic support4. Organization and management of program5. Library services6. IT resources
Wilkins and Balakrishnan (2013)	United Arab Emirates	<ol style="list-style-type: none">1. Quality of lecturers2. Program quality3. Assessment and feedback4. Resources5. Technology6. Facilities and social life

Up to this point, the academic factor, course content, and teaching method are the specific aspects that have been suggested and also found to be the most vital quality factors to measure the academic quality. The empirical evidence which indicates that these three aspects of academic quality have a great impact to measure the quality of academic perceived by students has been concluded and proved by the previous studies of Angell et al. (2008), Athiyaman (1997), Farahmandian et al. (2013), Fernandes et al. (2013), Hill (1995), Kwan and Ng (1999), Navarro et al. (2005), and Petruzzellis et al. (2006).

Thus, the selected specific dimensions that are the indicator of academic quality for the current study include: academic factor, course content, and teaching method. This is because these three dimensions of academic quality are important indicators to gauge the improvement of quality of education in Thailand higher education (Kirtikara, 2001). They are also counted as the one of the academic standard criteria evaluated by the Office of National Education Standards and Quality Assessment. Moreover, as it is raised by two prominent social critiques, Dr. Pravet Vasi and Mr. Anand Panyarachun as cited in Komolmas (1999), stated that the quality assurance practice in all areas of teaching quality, quality of lecturers, and course quality are the points of concerns in Thailand higher education system which directly influence the quality of education.

2.9 Value as the moderator

Qualities as a predictor of satisfaction is seem to be insufficient (Rosen and Surprenant, 1988). It needs more variables in the explanation of satisfaction. This

brings to the suggestion made by Teas and Agarwal (2000) that the relationship between quality and satisfaction can be considered “customer value” as a supplement variable. This is because customer satisfaction requires the experience with both quality and value (Anderson, Fornell & Lehmann, 1994). The customer level of satisfaction depends on which quality attributes are most valued (Eccles and Durand, 1997; Walker, Johnston and Leonard, 2006). Thus, it is undoubted that the role of value is increasingly of concern to researchers and practitioners (Khalifa, 2004), and there have been a great number of publications concerning these matters. Previous research studies such as those by Chen and Chen (2010); Fournier and Mick (1999); Hutchinson, Lai and Wang (2009); Hume and Mort (2008); Kuo, Wu and Deng (2009); Ravald and Grönroos (1996); and Yang et al. (2004) have shown that value has a significant influence on satisfaction.

Baron and Kenny (1986), defined the moderator variable as “the function of third variables, which partitions a focal independent variable into subgroups that establish its domain of maximal effectiveness in regard to a given dependent variable”. Moreover they further explained that “In general terms, a moderator is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable. Specifically within a correlational analysis framework, a moderator is a third variable that affects the zero-order correlation between two other variables. In the more familiar analysis of variance (ANOVA) terms, a basic moderator effect can be represented as an interaction between a focal

independent variable and a factor that specifies the appropriate conditions for its operation.”

Cavana, Delahaye and Sekeran (2001) explained that “a moderating variable is a variable on which the relationship between two other variables is contingent – that is, if the moderating effect is present, the theorized relationship between the two variables will hold good, but not otherwise.”

According to Sekaran (2007), the moderator variable is explained as “the variable that has a strong *contingent effect* on the independent variable – dependent variable relationship. That is, the presence of the third variable (the moderating variable) modifies the original relationship between the independent and the dependent variables.”

Referring to Hair, Black, Babin, Anderson and Tatham (2006), the moderator variable is explained as “the effect in which a third independent variable causes the relationship between a dependent/independent variable pair to change, depending on the value of the moderator variable.”

2.9.1 Previous Studies on Value as the Moderator

According to the business dictionary (<http://www.businessdictionary.com>), the phrase ‘customer value’ is defined as “the differences between what a customer gets from a product, and what he or she has to give up in order to get it.”

According to Zeithaml (1988), “perceived value is the customer’s overall assessment of the utility of a product based on perceptions of what is received and what is given”. He identified four definitions of customer value:

- Value is low price.
- Value is whatever I want in a product.
- Value is the quality I get for the price I pay.
- Value is what I get for what I give.

Bolton and Drew (1991) explained that customer value is associated with the assessment of various aspects such as monetary and non-monetary costs, the utilization of the service, customer tastes and characteristics. They concluded that quality is the most important determinant of customer value and these two variables, quality and value, are not identical. Moreover, customers’ assessments of service value are positively related to their evaluations of service quality.

Referring to the article written by Dumond (2000), he mentioned that there are many meanings of customer value which have been explained by many scholars. However, those meaning are not different. So, therefore, customer value is measured by the customer after their usage of product or service and related to what he/she must give up (such as price, sacrifices) to receive them (such as quality, benefit, and worth). As a result, it is subjective as it is determined by the customer, rather than the seller.

Sweeney and Soutar (2001) developed a measurement instrument with a multiple item scale to measure customer value that could be easily applied in a variety of

purchase situations called 'PERVAL'. This measurement aims to examine how customer experience of the same type of products or services influence the customer perceived value for pre-and post-of consumption phases. The scale development process is settled and tested in Australia. A total of 273 students are the first groups of respondents who deal with the quantitative procedure for this study. Subsequently, a telephone survey with 875 shoppers is used to the second groups of respondents for this study. It is found that customer value can be measured using 19 items that covers four important dimensions (emotional value, social value, functional value due to price, and functional value due to performance and quality).

Although the PERVAL scale has initially been tested in a retail setting, it is also suggested by the developers of this instrument that it remains suitable in several contexts. With this in mind, the effective use of PERVAL scale in the service-related context has been proved by many scholars such as the service context in Australia (Brown & Mazzarol, 2009); the services of the tourism organization in Australia (Williams & Soutar, 2009); and firms dealing with retailing services in Taiwan (Pan, 2004).

Khalifa (2004) notes that in order to understand the meaning of customer value. The models can be divided into three groups:

- Value components models - This model deals with esteem value or 'want', exchange value or 'worth', and utility value or 'need'. According to Kaufman (1998) cited in Khalifa (2004), Esteem value or 'want'

involves the buyer's desire to own for the sake of ownership. Exchange value or 'worth' explains why the product interests the buyer, and how and when the buyer will use the product. Utility value or 'need' is the primary value element which describes the performance and physical characteristics of the products.

- Utilitarian or benefits/costs ratio models in which customer value involves with pricing as the difference between customers' perceptions of benefits received and sacrifices incurred.

- Means-end model which are based on the consumption that customers acquire and use products or services to accomplish favorable ends.

Ledden and Kalafatis (2010) described customer value in terms of get and give components. 'Get' is the benefits or utility received through the purchase of products and services, and this encompasses both its core intrinsic and extrinsic attributes. 'Give' represents sacrifices that consumers are prepared to make in order to obtain the products and services. This includes both monetary and non-monetary cost along with expended time and effort for procurement.

Boksberger and Melsen (2011) explained that value itself has many concepts and theories supported. It is closely linked with many variables such as service quality, price, benefits, sacrifices, and customer satisfaction. They also highlighted that it is

important for service organizations and managers to know the unique characteristics of value and to understand its relevance to the service industry.

Empirical studies of customer value as the moderator variable in regard to the relationship between service quality and customer satisfaction first appeared in 2000. This first paper was published by Caruana et al. (2000) in the UK, and the second paper in 2009 by Ismail et al. (2009) in Malaysia. Both are now to be discussed here.

Caruana et al. (2000) examined the relationship between service quality, satisfaction, and the moderating role of value. This study was undertaken with 80 customers of an audit firm in the UK. The aims of this study are to seek the interaction between service quality and value which explains more of the variance in satisfaction than the direct influence of either service quality or value on their own. This study consisted of 16 items for service quality, 3 items for satisfaction and 1 item for value. The findings imply that there are correlations between satisfaction, service quality, and value. There is a direct link between service quality and satisfaction, and this link is also moderated by value. However, it is shown that there is a negative result in the beta coefficient for the moderating effect. The researchers explained this phenomenon, whereby value can have a negative impact on satisfaction. In addition, they further stated that service quality alone does not suffice to explain satisfaction. The level of quality supplied by the provider indicates that whether or not value is being enhanced.

Ismail et al. (2009) investigated the relationships among service quality features, perceived value, and customer satisfaction in the context of Malaysia. Service quality features are referred to as responsiveness, assurance, and empathy. The hypotheses in this study are intended to test the positive relationship between service quality features (responsiveness, assurance and empathy) and customer satisfaction, and to test the moderation effect of service quality features to customer satisfaction. The modification of SERVQUAL instrument was used to measure service quality features. Responsiveness was measured using 4 items (teaching and learning facility, assistance by academic staff in operating teaching and learning facilities, the booking system for lecture halls and/or lecture theatres, and readiness to assist academic staff if needed). Assurance was measured using 3 items (confidence in the service provider, comfortable in dealing with the service provider, and efficiency in providing services). Empathy was measured using 3 items (understanding about academic staffs' needs, priority in monitoring central teaching buildings, and ability in fulfilling the requests of the academic staff). In terms of perceived value, 3 items of measurement, modified from many previous scholars' findings were used: teaching and learning facilities which are useful for teaching and learning, teaching and learning facilities which help to improve teaching and learning, and teaching and learning spaces are comfortable for teaching activities. A total of 4 items were utilized to measure customer satisfaction (the service provider's attitude and behavior, the service provider's treatment of academic staff, the ability of the service provider to communicate with academic staff, and the willingness of the service provider to maintain the teaching and learning conditions of the central teaching buildings). A total of 120 academic staff in a higher institution in East Malaysia were

requested to complete the questionnaire, and 102 were returned, representing an 84 percent response rate. The hypotheses testing results indicate that the service quality features (responsiveness, assurance, and empathy) are positively and significantly related to customer satisfaction. In terms of the moderating effect, value is found to be the positive moderator variable on the relationship between service quality features and customer satisfaction. This means that value plays an important role because it strengthens the relationship between empathy and satisfaction. In contrast, the relationship of responsiveness and assurance on customer satisfaction is not moderated by value. However, it is also pointed out by the researchers that the nature of the sample of this study may cause a decrease in the ability of generalize the results to other settings or environments since there exists a limitation in terms of the sample selection which solely comes from a single university and where the respondents are selected by using a convenient sampling technique.

Thus, from these two previous studies on the moderating effect of value conducted by Caruana et al. (2000) and Ismail et al. (2009), there are four more additional issues to be supplemented. Firstly, the measure of value as the moderator should be further tested as the multi-items measure to increase the statistic power (Zikmund et al., 2010; Hair et al., 2010; Tabachnick & Fidell, 2007; Diamantopoulos et al., 2012). Secondly, since the cultural differences between countries do exist (Wilkins & Balakrishnan, 2013; Kwan & Ng, 1999), further studies should be conducted in other areas or countries. Thirdly, the specific variable that represents specific location under study should be integrated into the model; this could benefit to the stream of literature and enhancing the ability of the model to explain the dependent variable.

Lastly, the results need to be generalized in order to be able to explain the population.

2.10 Chapter Summary

In this chapter, the concepts of student satisfaction, service quality, academic quality, and value are highlighted. A thorough analysis of literature and studies has also been carried out to assess the current research topic. It can be concluded that it is vital to pay attention to student satisfaction, service quality, academic quality, and value in higher education setting. Moreover, this area of study is rarely found in higher education in Thailand. Therefore, it is important to carry out a study to enable university administrators to understand the student demand, increase student happiness, and allow the policy makers to design the strategies for improving student satisfaction.

CHAPTER 3

RESEARCH FRAMEWORK AND METHODOLOGY

3.0 Introduction

One of the major goals of this study is to understand student satisfaction in the context of higher education in Thailand. The study was conducted to bridge the understanding of how both service quality (tangibles, reliability, assurance, responsiveness, and empathy) and academic quality (academic factor, course content, and teaching method) can affect student satisfaction. Furthermore, the study sought to determine how value is the moderator variable for the relationship between service quality and academic quality in relation to student satisfaction. In this chapter, the methodology of the study including research framework, underpinning theory, development of hypotheses, population and sampling procedures, instrumentations, data collection procedures and statistical technique is presented.

3.1 Research Framework

The diagram of the proposed study is depicted in the Figure 3.1. In essence, this study aims to explore the relationship between service quality, academic quality and value on student satisfaction. It is initially based on The Equity Theory, and aimed to explain to relationship among the studied variables. The independent variables in this study include service quality and academic quality. Value is the moderator variable and student satisfaction is the dependent variable. The theoretical framework for the current study is shown in Figure 3.1.

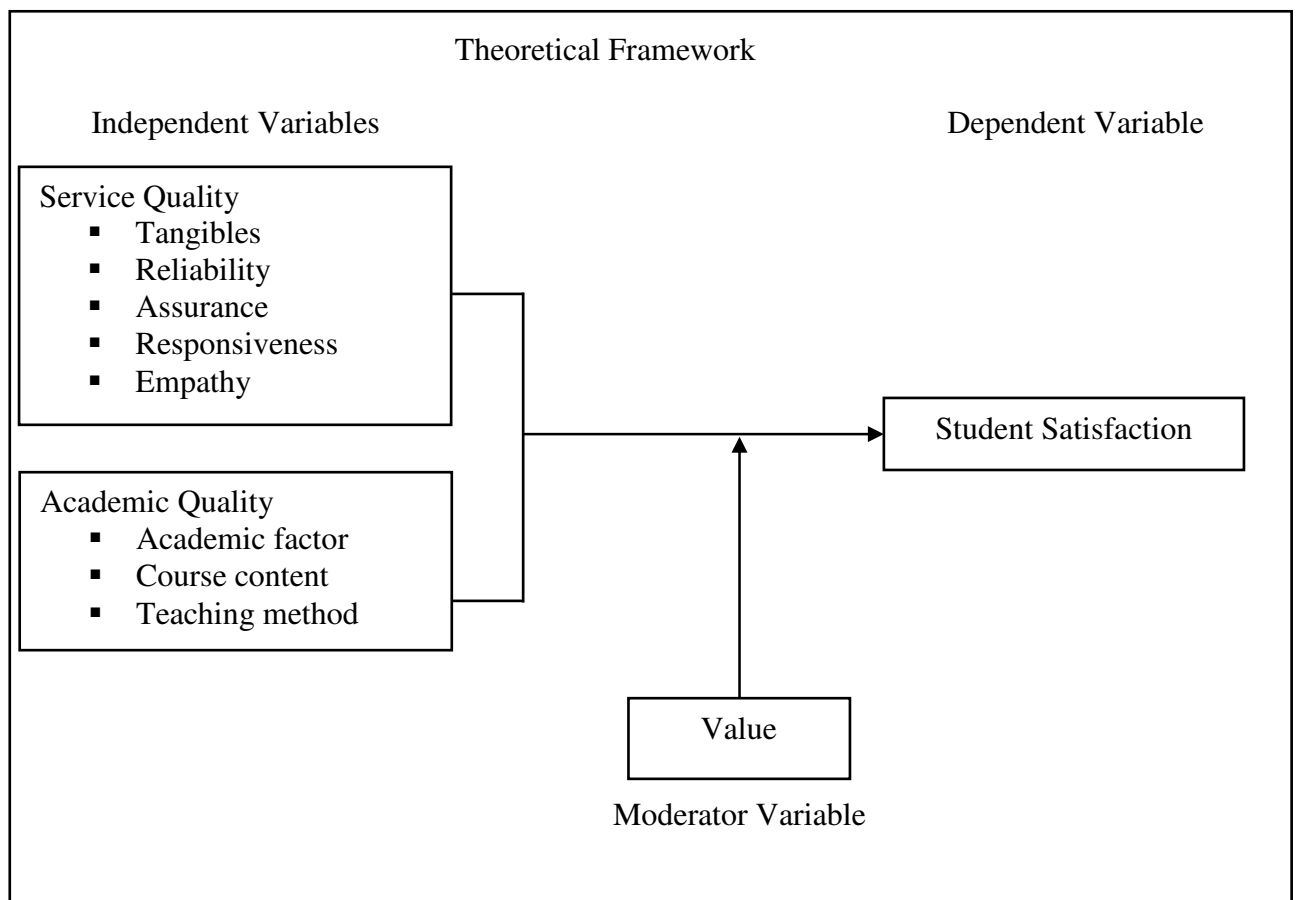


Figure 3.1
Research Framework

3.2 Underpinning theory

The development of the research model of the study was employed from The Equity Theory in order to explain the relationship, and how service quality, academic quality, and value influence student satisfaction. Basically, there are several theories contributing some understanding of the nature of the satisfaction phenomenon such as The Equity Theory (Adam, 1963), Kano Model (Kano, 1984), and Expectancy Disconfirmation Model (Woodruff & Gardial, 1996). Apparently, The Equity Theory has obtained a widespread acceptance presently in explaining customer behavior and customer satisfaction (Grigoroudis & Siskos, 2010). Additionally, Hoyer and

MacInnis (2008) further detailed out that this theory is applicable in the study of marketing because it helps in providing insights for understanding consumer satisfaction and dissatisfaction. This postulation has been strongly supported by a number of studies such as those made by Fisk and Young (1985), Maxham (2001), Yuan, Qian and Zhou (2010).

The Equity Theory is the basic in understanding customer satisfaction (Oliver & Desarbo, 1988). This theory was developed by John Stacey Adams in 1963. The objective of the theory is to explain relational satisfaction in terms of the perception of fair/unfair distributions of resources within interpersonal relationships. Satisfaction occurs when a given party feels that the ratio of the outcomes of a process is in some way balanced with such inputs as cost, time and effort (Oliver & Desarbo, 1988).

Referring to Oliver (1997), cited in Grigoroudis and Siskos (2010), in The Equity Theory, 'equity' is referred to as fairness, rightness, or deservingness to other entities, whether real or imaginary, individual or collective, or person or non-person. The Equity Theory aims to explain 'satisfaction' as the outcome of comparing rewards to investment, taking into account of three aspects: (1) the expectation (or prediction) of the customer, (2) the rewards and investment of the company or the seller, and (3) the rewards and investment of other customers.

Referring to the proposition made by Homans (1961), the 'rule of justice' is the main concept of The Equity Theory and explains that:

“ ... A person’s reward in exchange with another should be proportional to his/her investment...”

The reason why the theory be applied in this study are obvious. For the relationship between service quality and academic quality on student satisfaction, it can be explained that when students enroll in a university and have experiences with various kinds of services offered by the university - such as up-to-date equipment, prompt service from the supporting staff, and quality academic materials (including variety of books and journals in the library), their perception towards those offerings would result in either satisfaction or dissatisfaction. Satisfaction will occur when students perceive the performance of those offerings is at a desirable level. Meanwhile, dissatisfaction can occur when they perceive that the performance of the service offerings is bad and does not meet their requirements.

Regarding the role of value as the moderator variable that moderates on the relationship between service quality and academic quality on student satisfaction, student satisfaction will be stronger when the student feels that the ratio between their cost, time and effort compared with a university’s offering is balanced. Meanwhile, dissatisfaction will occur if students feel that they perceive inequity in what they paid and what is provided by the university. Based on the aforementioned research structure, the following hypotheses were then formulated.

3.3 Development of Hypotheses

According to the above theoretical framework and The Equity Theory, it is postulated that the dependent variable of student satisfaction is influenced by service

quality and academic quality. Both qualities are important indicators of student satisfaction. In addition, the relationship between service quality and academic quality on student satisfaction is moderated by value.

There are three characteristics to make this study distinctive from others. Firstly, although the relationship of service quality and academic quality to student satisfaction has already been examined by previous studies such as Abouchedid and Nasser, 2002; Abili et al., 2012; Aldridge & Rowley, 1998; Arambewela & Hall, 2009; Athiyaman, 1997; Angell et al., 2008; De Jagar & Gbadamosi, 2010; Navarro et al., 2005; Petruzzellis et al., 2006; Yeo, 2008), it cannot be taken for granted that the result will be the same because of the impact of cultural differences (Kwan & Ng, 1999; Abili et al., 2012). Moreover, those previous studies did not intend to combine these two independent variables, thus it is important to explain student satisfaction and to measure it as a cross-sectional.

Secondly, previous studies by Caruana et al. (2002) and Ismail et al. (2009) have already examined the moderating effect of value, but those previous studies refer to value as 'value for money' and it has been tested as a single-item measure. This current study aims to fulfill the gap whereby value is measured as a multi-items measurement based on the PERVAL scale developed by Sweeney and Soutar (2001). This multi-items measurement bases that are used in this study have contributed to better validity and more reliability results (Thorndike, 1967; Parasuraman et al., 2004). Moreover, the multi-item scales would be a representative of the precision of the single-item measure (McGrath, 2005; Nunally & Bernstein, 1994).

Thirdly, despite of the fact that moderating effect of value on service quality and satisfaction has been tested, the generalization of the previous results to others has not been fully performed. This is due to the fact that previous studies by Caruana et al. (2002) and Ismail et al. (2009) are faced with the problem of sample selection because they are conducted in just one organization. Hence, the current study aims to fulfill this gap by examining a wider range of respondents in various locations. Furthermore, the use of the sampling technique for this study may result in a better measure of accuracy because it is aimed to achieve the generalizability the findings and representativeness of the sample.

There are three aspects in systematically develop the hypotheses.

First, in order to obtain student satisfaction, universities need to know whether their services are satisfactory or not. Consequently, universities are expected to deliver high service quality as a way of increasing satisfaction. Students judge their experience based on the quality provided by the university (Yorke, 1999). Previous studies conducted by academics such as Caruana et al. (2000); Cronin and Taylor (1992); Spreng and Mackoy (1996) have found that service quality has a significant effect on satisfaction. An increase in quality leads to the same increase in satisfaction (Ruyter et al., 1997). Thus, in view of the above discussion, the hypotheses can be developed as follows:

H1: There is a positive relationship between service quality dimensions and student satisfaction.

- H_{1,1}: There is a positive relationship between tangibles and student satisfaction.
- H_{1,2}: There is a positive relationship between reliability and student satisfaction.
- H_{1,3}: There is a positive relationship between assurance and student satisfaction.
- H_{1,4}: There is a positive relationship between responsiveness and student satisfaction.
- H_{1,5}: There is a positive relationship between empathy and student satisfaction.

Secondly, a number of investigations suggest that there are more specific factors that are applicable to measuring quality in higher education (Cuthbert; 1996a,b; Rowley, 1997; and Jamali, 2007). Academic quality is found and recommended to be a supplementary variable that is appropriate for the higher education context, and it is evident (Angell et al., 2008; Athiyaman, 1997; De Jager and Gbadamosi, 2010; Hill, 1995; Kwan and Ng, 1999; and Petruzzellis et al., 2006) that academic factor, course content and teaching method are the most imperative determinants of student satisfaction. Accordingly, the following hypotheses are developed:

- H2:** There is a positive relationship between academic quality dimensions and student satisfaction.
 - H_{2,1}: There is a positive relationship between academic factor and student satisfaction.
 - H_{2,2}: There is a positive relationship between course content and student satisfaction.
 - H_{2,3}: There is a positive relationship between teaching method and student satisfaction.

Thirdly, previous studies by Caruana et al. (2000) and Ismail et al. (2009) report that value is the variable that moderates the quality and customer satisfaction relationship. However, limitation does exist in terms of a single item measurement. Thus, this study proposes that value has multi-items scales as suggested by Sweeney and Soutar (2001), and those values will moderate and strengthen the relationship between service quality and academic quality on student satisfaction. This study proposes the following hypotheses:

H3: There is the moderating effect of value on service quality dimensions and student satisfaction.

H4: There is the moderating effect of value on academic quality dimensions and student satisfaction.

3.4 Operational Definition

To serve the purposes of this research, variables are defined as follows:

Student Satisfaction is referred to the students' level of contentment concerning post evaluation of services offered by universities, and the students' experiences regarding university enrollment (Oliver, 1980; Athiyaman, 1997).

Service Quality is referred to students' perceptions towards university services. The five dimensions of service quality are based on the performance-only measurement (SERVPERF) developed by Cronin and Taylor (1992). The definitions for tangibles, reliability, responsiveness, assurance and empathy given by Cronin and Taylor (1992) have been modified here, with the term 'customers' being replaced with 'students'. Each dimension of service quality can then be further explained:

Tangibles refer to the appearance of the university's physical facilities, equipment and personnel. *Reliability* refers to the ability of the university to perform the promised service reliable and accurately. *Responsiveness* refers to the willingness of the university to provide help and prompt service to its students. *Assurance* refers to the knowledge and courtesy of staff and their ability to convey trust and confidence. *Empathy* refers to the level of care and individualized attention a university provides its students.

Academic Quality is referred to students' perceptions with specific quality dimensions which are related to academic aspects. The term 'academic quality' is defined here to cover all three dimensions: academic factors, course content and teaching methods.

Value is referred to the level of service quality and academic quality as perceived by students according to their experiences with the services offered by universities (Caruana et al., 2000; Boztepe, 2007). The student value can be derived from various criteria according to student feelings of affective states that those qualities generate. Service quality and academic quality have been found to be able to enhance student social self-concept as well as student judgments in terms of their costs or investment and utility of those offerings as perceived by the student.

3.5 Methodology

3.5.1 Research Design

Research design is the process of how data can be collected and analyzed (Sekaran & Bougie, 2010). There are two approaches that the researcher needs to use in order to

find an answer: quantitative and qualitative (Kumar, 2005). The quantitative approach involves the collecting of numerical data via questionnaires from targeted respondents. Meanwhile, the qualitative approach dealt with interviews or observations (Hair, Money, Samouel & Page, 2007). The approach used in this study is the quantitative approach due to the fact that the research aims to find the relationships among the variables. Specifically, the goals of this study are: (1) to examine the relationship between service quality and student satisfaction, (2) to examine the relationship between academic quality and student satisfaction, (3) to examine the moderating effect of value on the relationship between service quality and student satisfaction and (4) to examine the moderating effect of value on the relationship between academic quality and student satisfaction.

In addition, two options are available here regarding the time frame. The first option is a longitudinal study and the second one is a cross-sectional study. The longitudinal study is suitable when the researchers aim to seek how things vary over time, which requires data to be collected from the same sample units at multiple points in time. On the other hand, in cross-sectional study, the data is collected at a given point in time and summarized statistically.

In summary, the research design for this study is a quantitative approach and the data was collected by using a questionnaire. The data was collected once and the details of the research design are shown as follows:

3.5.1.1 Population and Sample

Population is the total number of people that the researcher wishes to investigate while a sample is the subset of them (Cavana et al., 2001). The population for this study are the students at a public university in the southern region of Thailand. There are altogether 10 universities with the main campus located in this region. Private university, Open universities and Colleges are not covered here. The total number of students recorded by the Office of the Higher Education Commission in February 2011 is 125,135 which specifies the population size for this study. The details of the population frame is depicted in the Table 3.1.

Table 3.1
Public Universities Located in Southern Thailand

Name	Number of Students
Nakhon Si Thammarat Rajabhat University	9,470
Prince of Songkla University	32,103
Princess of Naradhiwas University	1,181
Phuket Rajabhat University	11,665
Rajamangala University of Technology Srivijaya	14,222
Songkhla Rajabhat University	13,320
Suratthani Rajabhat University	17,691
Thaksin University	11,936
Walailak University	6,261
Yala Rajabhat University	7,286
Total	<i>N</i> = 125,135

In most cases, it is impossible to collect data from all populations (Hair et al., 2007). The current study is faced with the problem that it is not possible to reach all of the populations under investigation. Thus, the data will be collected from a sample.

3.5.1.2 Sampling Technique

Generally, the sampling method can be divided into two categories: probability sampling and nonprobability sampling. In this study, the mixed method of

probability sampling and non-probability sampling are selected, due to the fact that sampling for this study is divided into two phases.

In the first phase, the probability sampling techniques is utilized. The probability sampling technique is selected due to the fact that the findings based on this type of sampling technique can be generalized to the target population with a level of confidence and the representativeness of the sample is of importance in the interest of wider generalizability (Sekaran & Bugie, 2010). Due to the fact that the samples for the study are students who are enrolled in the public universities located across the southern region of Thailand, the stratified sampling technique is suitable for the given situation because the researcher can divided the subjects of the study into relatively homogeneous subgroups that are distinct and non-overlapping. It is the most efficient among all probability designs and all groups of population are evenly sampled. The sample size for this study is derived from the suggestion by Krejcie and Morgan (1970) cited in Sekaran (2007) which reads that if a population number is higher than 100,000 the sample size should be 384, which is applied here for this study. According to Hair et al. (2007), within a proportionately sampling basis, the sample size from each stratum is determined independently without considering the size of the stratum in relation to the overall sample size. The more important a particular stratum is considered, the higher the proportion of the sample elements from the stratum.

To determine the proportionate sample size for each university with the target sample size of 384, the number of elements for each university was multiplied by the target

sample size and then divided by total elements. For example, with 9,470 numbers of elements at Nakhon Si Thammarat Rajabhat University, The proportionate sample size can be obtained by multiplying 9,470 with 384 and divided by 125,135 which equal 29 for this university. The same calculation method was applied to all targeted universities. Table 3.2 below shows proportionate sample size for this study.

Table 3.2
Proportionate Stratified Sampling

University	Numbers of elements	Proportionate Sample Size
Nakhon Si Thammarat Rajabhat University	9,470	29
Prince of Songkla University	32,103	98
Princess of Naradhiwas University	1,181	4
Phuket Rajabhat University	11,665	36
Rajamangala University of Technology Srivijaya	14,222	44
Songkhla Rajabhat University	13,320	41
Suratthani Rajabhat University	17,691	54
Thaksin University	11,936	37
Walailak University	6,261	19
Yala Rajabhat University	7,286	22
Total	125,135	384

After the proportionate sample size is obtained. The second phase of the sampling technique is continued. This research makes use of sample size suggested by Roscoe (1975) of at least 30 and less than 500. The proportionate sample size is therefore multiplied by two to ensure each of subpopulation is well represented. The desired sample size for the study is illustrated in Table 3.3.

Table 3.3
Desired Sample Size of Each Subpopulation

University	Proportionate Sampling	Sample Size
Nakhon Si Thammarat Rajabhat University	29	58
Prince of Songkla University	98	196
Princess of Naradhiwas University	4	8
Phuket Rajabhat University	36	72
Rajamangala University of Technology Srivijaya	44	88
Songkhla Rajabhat University	41	82
Suratthani Rajabhat University	54	108
Thaksin University	37	74
Walailak University	19	38
Yala Rajabhat University	22	44
Total	384	768

3.5.1.3 Data Collection Procedures

The convenient sampling technique was used in the data collection process. After the sample size was derived from the Office of the Higher Education Commission (2011), the letters requesting permission to conduct research was sent to the targeted universities. This permission was to ensure their cooperation in this study. After the researcher obtained permission, a location survey started and students were asked for their collaboration in doing the survey. The data collection started in December 2011. The data collection process took place over 3 month period. The questionnaire was distributed to the targeted respondents in one of the two ways: directly by hand and through the networks of colleagues.

Directly by hand: The research went in person to four provinces namely: Songkhla, Nakhon Si Thammarat, Phuket, and Suratthani which contained the location of eight universities: four universities in Songkhla provinces (Prince of Songkla University, Thaksin University, Songkhla Rajabhat University, and Rajamangala University of

Technology Sirvijaya), two universities in Nakhon Si Thammarat province (Nakhon Si Thammarat Rajabhat University and Walailak University), Suratthani Rajabhat University in Suratthani province and Phuket Rajabhat University in Phuket province. These eight universities are the universities that were easily accessible in terms of the transportation and location. The pack of questionnaires was left at the lecture halls of each university in separate sealed envelopes. The students who agreed to participate submitted their information via this self-administered questionnaire and returned it at the same location.

Through networks of colleagues: for two universities in Naradhiwas and Yala provinces, the other method of data collection is used due to the limitation of transportation. The researcher sent the questionnaire to colleagues at these two universities. Similar to directly by hand method, each individual questionnaire was in a separate sealed envelope to ensure confidentiality. These colleagues distributed the questionnaires to the students to fill out the questionnaire and return their questionnaire to the colleagues. Then, those colleagues mailed the completed questionnaires to the researcher.

3.5.2 Research Instrument

A self-administered questionnaire will serve as a data-collecting instrument and it is divided into five sections:

- (1) Student satisfaction towards the service delivery of the university
- (2) Student's perception toward the university service quality dimensions, namely: tangibles, reliability, responsiveness, assurance, and empathy

- (3) Student's perception toward the university academic quality dimensions, namely: academic factor, course content, and teaching method.
- (4) Value perceived by the students toward the university service and academic quality.
- (5) Demographic data of the respondents, including: gender, age, year of study, etc.
- (6) Open ended questions to express the comments and suggestions to the university. This part encourages students to talk about whatever is important to them and allow the university to get a better understanding of their needs.

3.5.3 Instrumentation

Questions from certain previous studies are adapted and modified for this study.

- (1) Student satisfaction is measured by using 6 items adapted and modified from Athiyaman (1997). Cronbach's alpha for this instrument was previously recommended to be .92.

Table 3.4

Items to Measure for Student Satisfaction (Athiyaman, 1997)

-
- (1) I am satisfied with my decision to attend the university.
 - (2) If I had to do it all over again, I would not enroll at the university.
 - (3) My choice to enroll at the university was a wise one.
 - (4) I feel bad about my decision to enroll at the university.
 - (5) I think I did the right thing when I decided to enroll at the university.
 - (6) I am not happy that I enrolled at the university.
-

- (2) Service quality is measured by using SERVPERF instrument from Cronin and Taylor (1992) which contains 22 items and the measured Cronbach's alpha for this instrument was higher than .80 in all dimensions.

Table 3.5

Items to Measure for Service Quality (Cronin & Taylor, 1997)

Tangibles

- (1) The institution has up-to-date equipment.
- (2) The institution's physical facilities are visually appealing.
- (3) The institution's employees are well dressed and appear neat.
- (4) The appearance of the physical facilities of the institution is in line with the type of service provided.

Reliability

- (5) When the institution promises to do something by certain time, it does so.
- (6) When I have problems, the institution is sympathetic and reassuring.
- (7) The institution is dependable.
- (8) The institution provides its services at the time it promises to do so.
- (9) The institution keeps its records accurately.

Assurance

- (10) The institution does not tell its students exactly when services will be performed.
- (11) I do not receive prompt service from the institution's employees.
- (12) Employees of the institution are not always willing to help students.
- (13) Employees of the institution are too busy to respond to student requests promptly.

Responsiveness

- (14) I can trust employees of the institution.
- (15) I can feel safe in my transaction with the institution's employees.
- (16) Employees of the institution are polite.
- (17) Employees get adequate support from the institution to do their jobs well.

Empathy

- (18) The institution does not give me individual attention.
 - (19) Employees of the institution do not give me personal attention.
 - (20) Employees of the institution do not know what my needs are.
 - (21) The institution does not have my best interests at heart.
 - (22) The institution does not have operating hours convenient to all their customers.
-

- (3) Academic quality is measured using 18 items adopted and modified from Angell et al. (2008); Kwan and Ng (1999) and Navarro et al. (2005). The internal-item reliability or Cronbach's alpha for these three dimensions was higher than .60.

Table 3.6

Items to Measure for Academic Quality (Angell et al., 2008; Kwan & Ng, 1999; Navarro et al., 2005)

Academic factor

- (23) Engaging skilled lecturers
- (24) Practical skills taught
- (25) Regular access to teaching staff
- (26) Variety of library books and journals
- (27) Easily transferable skills
- (28) Reputable degree programme
- (29) Good computing and web facilities

Course content

- (30) The chance that my study fulfills my personal needs.
- (31) The appropriateness of requirements for my course.
- (32) The chance to develop my abilities and prepare for my career.
- (33) The quality of material emphasized in course.
- (34) The usefulness of the module components offered in my career development.
- (35) The usefulness of the module components in fulfilling my personal needs.

Teaching methods

- (36) The proportion between theory and practice was adequate.
 - (37) The bibliography, documentation provided were adequate.
 - (38) The teaching methods were appropriate.
 - (39) The level at which these subjects were discussed was appropriate
 - (40) The extent and distribution of the subjects were correct.
-

(4) Value is measured by using PERVAL scale developed by Sweeney and Soutar (2001) which consists of 19 items. The previous Cronbach's alpha ranges from .80-.94.

Table 3.7

Items to Measure for Value (Sweeney & Soutar, 2001)

-
- (41) Is one that I would enjoy.
 - (42) Would make me want to experience it.
 - (43) Is one that I would feel relaxed about experiencing.
 - (44) Would make me feel good.
 - (45) Would give me pleasure.
 - (46) Would help me to feel acceptable.
 - (47) Would improve the way I am perceived.
 - (48) Would make a good impression on other people.
 - (49) Would give me social approval.
 - (50) Is reasonably priced.
 - (51) Offers value for money.
 - (52) Is a good service for the price.
 - (53) Is economical.
 - (54) Has consistent quality.
-

Table 3.7 (continued)

(55) Is well made.
 (56) Has an acceptable standard of quality.
 (57) Has poor workmanship.
 (58) Would not last a long time.
 (59) Would perform consistently.

The five-points Likert scale is used for measuring all the observed variables (satisfaction, service quality, academic quality, and value). In addition, the questionnaire was translated into Thai by the researcher and reviewed by the expert in the field of English linguistics who is familiar with technical terms in specific areas. Details of the instrument are presented in Table 3.8.

Table 3.8
Contents of the Questionnaire

Part	Variables	Number of items	Question number
I	-Student satisfaction	6	1-6
	-Service quality	22	7-28
	-Academic quality	18	29-46
	-Student value	19	47-65
II	Comments and suggestions		
III	Demographic details		
Total		65	

3.5.4 Pilot Test

To ensure that the instrument is good, and that the selected instrumentations are well suited with the context of the study, the wording of the items asked are clear, and to make sure that the respondents really understood the questions. A pilot test was then performed in two steps.

In the first step, the convenience sampling technique was conducted with 30 students at Prince of Songkla University and it was carried out the by researcher to guarantee a 100 percent response rate. The second step was dealing with the analysis of the Cronbach's Alpha to validate the internal reliability consistency for each of the selected instrumentations (Zikmund, 2003). Based on Table 3.4, all showed an accepted internal reliability or Cronbach's Alpha ranging from .89 to .94 which is higher than the minimum point of the rule of thumb explained by Nunally and Berstein (1994), and Sekaran and Bougie (2010), that the Coefficient Cronbach' s Alpha value of .70 was used as the minimum point and this value decreased to .60 in the exploratory research (Hair et al., 2006). Table 3.9 exhibits the results of internal reliability consistency for each of the variables.

Table 3.9
Reliability of Constructs for Pilot Test (n=30)

NO.	Variables	Cronbach's Alpha
1.	Satisfaction	.89
2.	Service Quality	.82
3.	Academic Quality	.91
4.	Value	.94

3.6 Data Analysis

As mentioned earlier, the research design for this study is the quantitative approach. Accordingly, quantitative data that was obtained through the use of questionnaires was analyzed by using Statistical Package for Social Sciences (SPSS) version 11.5. The respondents to all parts of the questionnaire were analyzed using both descriptive and inferential analysis.

3.6.1 Descriptive Analysis

The objective of the descriptive analysis is to change the raw data into the form that is easy for the researcher to understand and interpret (Zikmund, 2003). The descriptive statistics can be divided into two types: frequency distributions, and measures of central tendencies and dispersion (Cavana et al., 2001). The frequency distributions are presented in the form of frequency and percentages for the nominal scale and ordinal scale of the respondents' profiles such as demographic data. Meanwhile, the measure of central tendencies and dispersion explains the nature of data in terms of minimum, maximum, means, standard deviations, and variance for the interval scale of the measured variables.

For this study, the researcher utilizes the frequency distributions to explain the respondents profile related to their age, gender, and year of study. Furthermore, the data are also explained in the form of chart pie charts and graphs as a visual display. The research also measures the central tendencies and dispersion for both independent and dependent variables. Service quality dimensions, academic quality dimensions, value dimensions and student satisfaction are used on a five-points Likert scale for this study under the following headings: minimum, maximum, standard deviation, and variance. The descriptive analysis is intended to answer the first research question: (1) What is the level of student satisfaction, service quality, and academic quality in the higher education sector in Thailand?

3.6.2 Testing of Reliability and Validity

Reliability: The Cronbach's alpha is used to test the internal-consistency reliability of respondents' answers to all of the items in a measure (Sekaran, 2007). According to Hair et al. (2006), Cronbach's alpha is being widely used and the generally accepted value upon lower limit for Cronbach's alpha is .70 although it may decrease to .60 in exploratory research. Thus, all dimensions for this study are based on the Cronbach's alpha value of .60 or more to indicate the satisfactory internal-consistency reliability.

Validity: Validity is the extent to which a scale or set of measures accurately represents the construct of interest. Factor analysis is used to assess the validity of instrumentation. The exploratory factor analysis (EFA) helps reduce a vast number of variables to a smaller set of summary variables and helps explore the underlining theoretical structure of the phenomena (Sekaran, 2007).

EFA is used to identify the structure of the relationship between the variable and the respondent. More frequently, it is used as an exploratory technique when the researcher would like to summarize the structure of the set of variables.

In order to examine if the items for a construct share a single underlying factor and to establish discriminant validity of the construct under investigation, an exploratory factor analysis (EFA) using varimax rotation method was performed.

Hair et al. (2006) indicated that factor loading of $\pm.30$ to $\pm.40$ is minimally acceptable while values greater than $\pm.50$ are generally considered necessary for practical significance. Accordingly, this study uses $\pm.50$ as the cut off score for factor loadings.

3.6.3 Inferential Analysis - Correlation Analysis

Pearson correlation analysis (r) is used to measure the linear association between variables (Hair et al., 2007). The Pearson correlation coefficient is best used for interval-scaled and ratio-scaled variables (Sekaran, 2007). In this current study, the Pearson correlation analysis (r) is used to explore the pattern of the relationship between independent variables (service quality and academic quality), the moderating variable (value), and the dependent variable (student satisfaction) as preliminary test prior to performing multiple regression analysis.

In addition, it is indicated that the correlation coefficient can be ranged from -1.00 to +1.00 with zero (0) representing absolutely no association between the two metric variables. Meanwhile, -1.00 or +1.00 is possible and represents a perfect association between independent and dependent variables. The larger the correlation coefficient is, the stronger the linkage or level of association. However, as a general rule of thumb, multicollinearity may be a problem if a correlation coefficient between two independent variables is greater than .80 in the correlation matrix (Hair et al., 2007).

3.6.4 Multiple Regression Analysis

In order to examine the significant predictors of student satisfaction from service quality dimensions (tangibles, reliability, assurance, responsiveness, and empathy) and academic quality dimensions (academic factor, course content, and teaching method), a multiple regression analysis was conducted in this study. According to Sekaran and Bougie (2010) multiple regression analysis is able to reveal how much variance in the dependent variable is explained by independent variables. Moreover, this technique also allows an understanding of the relationship between the measured variables which is the best predictor (Aczel & Sounderpandian, 2006). Thus, this technique aims to answer the second and third research questions: (2) What is the relationship between service quality and student satisfaction in the higher education sector in Thailand, and (3) What is the relationship between academic quality and student satisfaction in the higher education sector in Thailand? Moreover, it is intended to gauge the amount by which service quality and academic quality can explain student satisfaction in the context of this study.

3.6.5 Hierarchical Regression Analysis

According to Baron and Kenny (1986), it is often hypothesized that a relationship between two variables will depend on a third variable which is referred to as a moderator.

The interaction effects are sometimes called moderator effects because the interacting third variable which changes the relationship between two original

variables is a moderating variable that moderates the original relationship (Cohen & Cohen, 1983).

A hierarchical multiple regression technique is used to determine whether the value moderates the form of relationship between both service quality and academic quality in regard to student satisfaction. To determine the order of entry of the variables, F-test is used to assess the significance of each added variable to the explanation reflected in R-square. This hierarchical regression procedure is an alternative in comparing betas for considering the importance of the variables. Hierarchical multiple regression may then involve a series of regressions for the moderating effect on the relationship between independent and dependent variables.

A Statistical Package for Social Sciences (SPSS) programs will allow researcher to specify the moderating effect of variables and do all the computation automatically. The increases in R square result in the significance of the interaction term (Cohen & Cohen, 1983).

The use of hierarchical regression analysis aims to answer the fourth and fifth research questions: (4) Does value moderate the relationship between service quality and student satisfaction in the higher education sector in Thailand? (5) Does value moderate the relationship between academic quality and student satisfaction in the higher education sector in Thailand?

3.7 Hypotheses Testing Summary

The summary of hypotheses testing is shown in Table 3.10.

Table 3.10
Summary of Hypotheses Testing

	Hypotheses	Technique of Analysis
H1	There is a positive relationship between service quality dimensions and student satisfaction.	Regression
H2	There is a positive relationship between academic quality dimensions and student satisfaction.	Regression
H3	Value dimensions moderate the relationship between service quality dimensions and student satisfaction.	Hierarchical Regression
H4	Value dimensions moderate the relationship between academic quality dimensions and student satisfaction.	Hierarchical Regression

3.8 Chapter Summary

This chapter explains the research methodology for this study. It comprises the research framework, development of hypotheses, methodology and data analysis. A self-administered questionnaire served as a data-collecting instrument. The questionnaire was targeted to students from ten government universities located in the southern region of Thailand. The questionnaire was used as the instrumentation. The data collection process was directly done by hand and through the networks of colleagues. The statistical analysis of the data was analyzed using SPSS program for descriptive (minimum, maximum, means, and standard deviation) and inferential statistics (Pearson correlation coefficients, and hierarchical regression analysis).

CHAPTER 4

RESEARCH FINDINGS

4.0 Introduction

This chapter presents the results of data analysis output based on research objectives mentioned in Chapter 1. All sections in this chapter aim to fulfill the two major goals.

Firstly, in order to understand the nature of the respondents, descriptive statistics are used to report the respondent profiles and the characteristics of the variables (student satisfaction, service quality, academic quality, and value). In addition, information related to the profile of the respondents is presented in tabular forms and charts.

Secondly, this chapter aims to report the inferential statistics pertaining to the hypotheses stated in Chapter 3. Four main hypotheses were therefore tested and the Statistical Package for Social Sciences (SPSS) version 11.5 was used to analyze the data obtained from the questionnaire.

Within this chapter, there are five main sections: the exploration for the goodness of data, the reports of the respondent profiles, and the assessment of the factor structure and reliability of the scales explained in section 4.1. The restatement of hypotheses is drawn in section 4.2, and is followed by a descriptive analysis in section 4.3. Testing of the hypotheses using Pearson correlation, multiple regression and hierarchical

regression analysis is covered under section 4.4. Finally, a chapter summary is presented in section 4.5.

4.1 Goodness of Data

As mentioned in Chapter 3, the primary data of this study was collected through an instrument in the form of a questionnaire. It targeted 768 students studying in higher education institutions located in the southern region of Thailand (see Table 3.2 and 3.3). The data collection was conducted over a period of one month, from December 15, 2011 to January 30, 2012. Prior to performing the data analysis, the negatively-worded items were re-coded into a positive form. From a total of 768 questionnaires distributed, only 346 questionnaires were usable.

4.1.1 Respondent Profiles

By using the descriptive analysis, this section presents the profile of the respondents. The data collected in this part concerns the respondents' gender, age and year of study. The details of demographic profiles of the respondents are summarized in Table 4.1 and are also illustrated in the form of charts.

Table 4.1
Profile of the Respondents (N=346)

Respondent's Demographic		Frequency	Percent
Gender	Male	62	17.9
	Female	284	82.1
Age	18 years	12	3.47
	19 years	59	17.05
	20 years	104	30.06
	21 years	76	21.97
	22 years	70	20.23
	23 yrs and above	25	7.23
Year of Study	Freshman	64	18.5
	Sophomore	112	32.4
	Junior	84	24.3
	Senior	86	24.9

It can be seen in Table 4.1 that the total of 346 respondents comprised mainly of female students with 284 female (82.1%) and 62 male (17.9%) students taking part in the study.

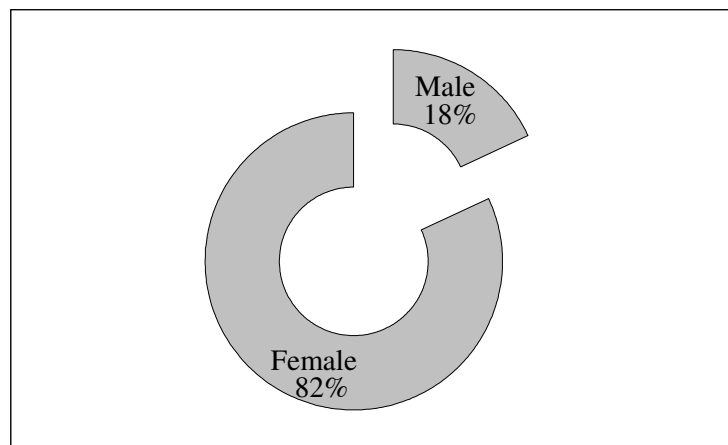


Figure 4.1
The Respondents' Gender

The respondents' ages are classified by years, starting from 188, the last group is 23 years and above. 104 respondents, were 20 years old (30.06%), 76 respondents were 21 years old (21.97%), 70 respondents were 22 years old (20.23%), and 71

respondents, or about 20 percent, were between the ages of 18 to 19. Meanwhile, the lowest number is respondents with an age of 23 years and above, only 25 students or 7.23 percent.

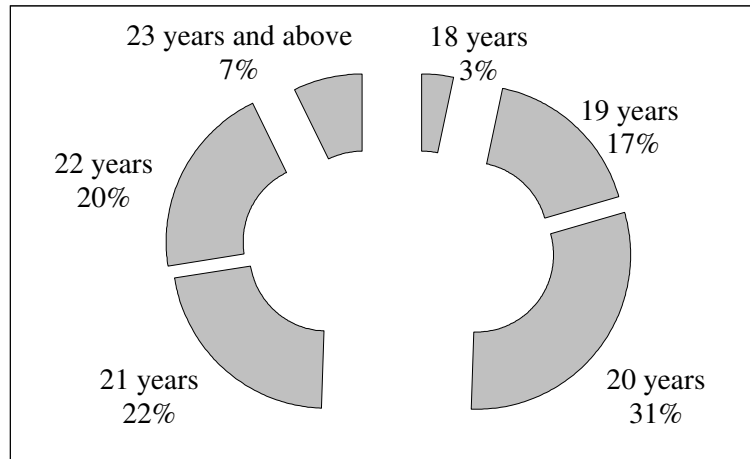


Figure 4.2
The Respondents' Age

In terms of the respondents' year of study, the majority of them were sophomore 112 (32.4%), 86 participants or 24.9 percent were senior, 84 (24.3%) junior and 64 (18.5%) freshman.

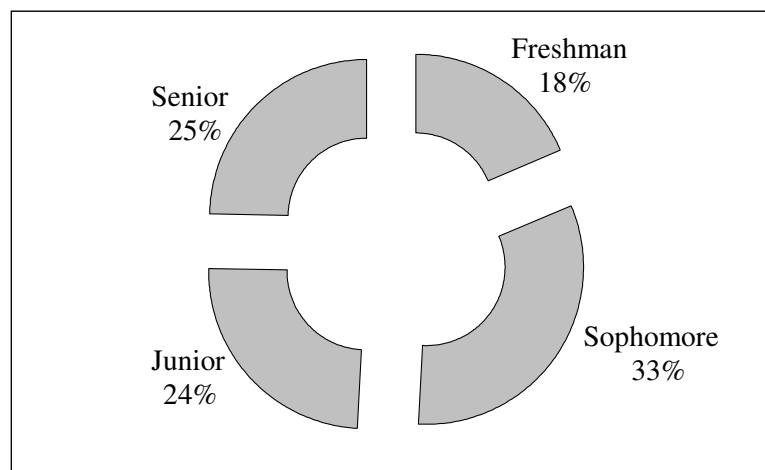


Figure 4.3
The Respondents' Year of Study

4.1.2 Validity and Reliability

Prior to performing further tests which covered both descriptive and inferential analyses, validity and reliability were tested for all variables.

Essentially, the main purpose of validity and reliability testing is “to identify small number of themes, dimensions, components or factors underlying a relatively large set of variables” (Meyer, Gamst & Guarino, 2006). Thus, all scales used in this study, namely, the independent variables (service quality and academic quality), moderator variable (value), and dependent variable (student satisfaction) underwent the following steps to determine their validity and reliability.

Validity is the extent to which a construct measurement accurately represents a specific concept of interest (Hair et al., 2007). It also explains how well an instrument that is developed by the researcher is able to measure the observed variables (Sekaran & Bougie, 2010). Thus, an exploratory factor analysis was used to validate whether the items measured corresponded to the concept of measurement. Additionally, factor analysis was also used as a data reduction method to develop a reliability of the scale.

Prior to performing the factor analysis, it was important to examine the data matrix for sufficient correlations to justify the application of factor analysis. Two basic guidelines to help check the correlations are the Kaiser-Meyer-Olkin (KMO) and the Bartlett test of sphericity. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy needs to be as large as possible. Its values can range from 0 to 1, where 1

indicates that each variables is perfectly predicted without error by the other variables (Hair et al., 2006). KMO designated levels are as follows: .08 or above, meritorious; .70 or above, middling; .60 or above, mediocre; .50 or above, miserable; and below .50, unacceptable. The measure of sampling adequacy values must exceed .50 before proceeding with the factor analysis. The Barlett test of sphericity is the measure that indicates whether sufficient correlations exist among the variables to proceed (Hair et al., 2006). A significant Bartlett's test of sphericity (sig. <.05) is required to perform factor analysis.

This study utilized the factor analysis using principal component extraction with varimax rotation method, and the number for each factor in this study was as follows: (1) the value of eigenvalue needed to be greater than 1.0, (2) the communalities value of the items should generally have been greater than .50 to be retained in the analysis, (3) the items with cross loading were considered deleted, and (4) the cut off score for factor loadings at $\pm.50$ was acceptable.

After an acceptable factor solution had been obtained in which all variables had a significant loading on factor, it was crucial to label the factors. Hair et al. (2007) explained that the researcher assigned certain meaning of factor loadings pattern. Variables with higher loading are regarded more significant and have greater influence on the name of the label selected to represent a factor. Thus, the researcher examined all the significant variables for a particular factor, placed greater emphasis on those variables with higher loadings, and assigned a name of label to a factor that accurately reflected the variable's loading on that factor. This label was not derived

or assigned by a factor analysis method but developed by the researcher based on its appropriateness for representing the underlying dimensions of a particular factor. This procedure was followed for each extracted factor. The final result was a name or label that represents each of the derived factors as accurately as possible.

Reliability is an assessment of the degree of consistency between multiple measurements of a variable (Hair et al., 2006). The Cronbach's alpha was therefore used to measure the reliability. Normally the coefficient alpha can be ranged from 0 to 1. The rule of thumb is generally considered an alpha of 0.7 as a minimum. However, this value may decrease to 0.6 in exploratory research (Hair et al., 2006). Due to exploratory nature of this study, a Cronbach's alpha value of 0.6 or more indicated a satisfactory result for the scale reliability criteria.

The next section provides a detailed overview of validity and reliability tests of the observed variables. The section begins with the consideration of the student satisfaction as the dependent variable, service quality and academic quality as the independent variables, and value as the moderating variable.

4.1.2.1 Dependent Variable: Student Satisfaction

Student satisfaction was measured using six (6) statement items. In order to determine the scale items for this study, a principal component factor analysis was performed.

It was observed that only one component extracted as hypothesized which explained 63.62% of the variance. All six statement items had communalities greater than .50 which achieved the basic criteria for the utilization of factor analysis, and the KMO score was .875 (meritorious) which indicated that the factor analysis was appropriate. The Bartlett's test of sphericity was significant at a level of .000. All items have factor loadings greater than .50. The result of reliability analysis revealed a Cronbach's alpha value of .881, indicating an acceptable level of reliability (see Table 4.2).

Table 4.2
Factor Analysis and Reliability Test Result on Student Satisfaction

Student satisfaction	Factor Loadings
	Factor 1
I am satisfied with my decision to attend the university.	.773
If I had to do it all over again, I would not enroll at the university.*	.835
My choice to enroll at the university was a wise one.	.816
I feel bad about my decision to enroll at the university.*	.783
I think I did the right thing when I decided to enroll at the university.	.846
I am not happy that I enrolled at the university.*	.726
Cronbach's Alpha	.881
Eigenvalues	3.817
Variances Explained (%)	63.615
Cumulative (%)	63.615
The Kaiser-Meyer-Olkin measure of Sampling adequacy.	.875
The Barlett's test of Sphericity	
Approx. Chi-Square	
1063.131	
df	15
Sig.	.000

Note *Reverse coded
Only factor loadings > .50 are shown.
Only those items that loaded on the factors with eigenvalues greater than 1 are shown.

4.2.1.2 Independent Variable: Service Quality

Service quality dimensions were measured using twenty-two (22) statement items based on SERVPERF scale (Cronin & Taylor, 1992). The process to gauge the validity and reliability was performed as mentioned in section 4.1.2.

By using a principal component factor analysis to determine the scale items for this variable, four items of service quality with communalities lower than .50 were deleted (SQ3, SQ8, SQ9, and SQ22) in the first and the second run of this analysis, after which, it was rerun again. The Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett's test of sphericity were examined to decide the appropriateness of the factor analysis. The KMO score was .880 (meritorious), which indicated that the factor analysis was appropriate. The Bartlett's test of sphericity was significant at a level of .000. All items have factor loadings above .50 and the results of the reliability analysis revealed a Cronbach's alpha for each factor that achieved the satisfactory level required, ranging from .664 to .869, and thus, the scale was reliable.

The principal component factor analysis extracted four factors which explained 62.58% of the variance. The first factor comprised five items and was labeled 'responsiveness'. The second factor comprised six items and was a combination of two original dimensions (tangibles and reliability). So, this factor was labeled 'the combination of tangibles and reliability'. The third factor comprised four items and was labeled 'empathy', and the fourth factor comprised three items and was labeled 'assurance' (see Table 4.3 and 4.4).

Table 4.3
Factor Analysis and Reliability Test Result on Service Quality

Service Quality	Factor Loadings			
	Factor 1	Factor 2	Factor 3	Factor 4
I can feel safe in my transaction with the institution's employees.	.815			
Employees of the institution are polite.*	.797			
Employees of the institution are too busy to respond to student requests promptly.	.772			
I can trust employees of the institution.	.717			
Employees get adequate support from the institution to do their jobs well.	.609			
The institution's physical facilities are visually appealing.		.801		
The institution has up-to-date equipment.		.785		
The appearance of the physical facilities of the institution is in line with the type of service provided.		.761		
When the institution promises to do something by certain time, it does so.		.652		
When I have problems, the institution is sympathetic and reassuring.		.624		
The institution is dependable.		.586		
Employees of the institution do not give me personal attention.*			.821	
The institution does not give me individual attention.*			.806	
Employees of the institution do not know what my needs are.*			.685	
The institution does not have my best interests at heart.*			.525	
The institution does not tell its students exactly when services will be performed.*				.772
I do not receive prompt service from the institution's employees.*				.733
Employees of the institution are not always willing to help students.*				.590
Cronbach's Alpha	.869	.853	.788	.664
Eigenvalues	7.743	1.984	1.420	1.299
Variances Explained (%)	37.462	11.022	7.889	7.215
Cumulative (%)	19.482	38.468	53.801	63.588
The Kaiser-Meyer-Olkin measure of Sampling adequacy.	.880			
The Barlett's test of Sphericity	Approx. Chi-Square			
	2903.388			
	df	153		
	Sig.	.000		

Note *Reverse coded
 Only factor loadings > .50 are shown.
 Only those items that loaded on the factors with eigenvalues greater than 1 are shown.

Table 4.4
Dimensions of Service Quality

Factor	Items	Dimension
1	SQ15, SQ16, SQ13, SQ14, SQ17	Responsiveness
2	SQ2, SQ1, SQ4, SQ5, SQ6, SQ7	The combination of tangibles and reliability
3	SQ19, SQ18, SQ20, SQ21	Empathy
4	SQ10, SQ11, SQ12	Assurance

4.1.2.3 Independent Variable: Academic Quality

Academic quality dimensions were measured using eighteen (18) statement items. In order to determine the scale items for this study, a principal component factor analysis was performed.

For the first run of factor analysis, two items of academic quality (AQ3 and AQ6) were deleted since it was found that both of them encountered a communalities values of .466 and .422 which was lower than .50 required. Then, the factor analysis was processed again. The KMO score was .925 (meritorious), which indicated that the factor analysis technique was appropriate. The Bartlett's test of sphericity was significant at a level of .000. All items had factor loadings above .50 which achieved the rule of thumb that the communalities value of the items to be retained in the factor analysis should be greater than .50. The Cronbach's alpha for each factor reached to the satisfactory level, ranging from .886 to .831, and therefore indicated that the scale was reliable.

Three factors were extracted which explained 63.42% of the variance. The first factor comprised seven items and was renamed as 'course quality'. The second factor

comprised four items and was renamed as ‘academic facilities’, and the third factor comprised four items and was labeled ‘teaching quality’. (see Table 4.5 and 4.6).

Table 4.5
Factor Analysis and Reliability Test Result on Academic Quality

Academic Quality	Factor Loadings		
	Factor 1	Factor2	Factor3
The usefulness of the module components in fulfilling my personal needs.	.758		
The extent and distribution of the subjects were correct.	.743		
The usefulness of the module components offered in my career development.	.726		
The proportion between theory and practice was adequate.	.700		
The appropriateness of requirements for my course.	.641		
The chance to develop my abilities and prepare for my career.	.617		
The level at which these subjects were discussed was appropriate	.572		
The quality of material emphasized in course.		.752	
Good computing and web facilities		.692	
Variety of library books and journals		.663	
The bibliography, documentation and etc. provided were adequate.		.517	
The chance that my study fulfills my personal needs.		.513	
Engaging skilled lecturers			.772
Practical skills taught			.739
Easily transferable skills			.661
The teaching methods were appropriate.			.616
Cronbach's Alpha	.886	.821	.831
Eigenvalues	7.756	1.221	1.171
Variances Explained (%)	48.473	7.630	7.322
Cumulative (%)	48.473	56.103	63.425
The Kaiser-Meyer-Olkin measure of Sampling adequacy.	.925		
The Barlett's test of Sphericity	Approx. Chi-Square		
	3074.319		
	df	120	
	Sig.	.000	

Note: Only factor loadings > .50 are shown.

Only those items that loaded on the factors with eigenvalues greater than 1 are shown.

Table 4.6
Dimensions of Academic Quality

Factor	Items	Dimension
1	AQ13, AQ18, AQ12, AQ14, AQ9, AQ10, AQ17	Course quality
2	AQ11, AQ7, AQ4, AQ15, AQ8	Academic facilities
3	AQ1, AQ2, AQ5, AQ16	Teaching quality

4.1.2.4 Moderator Variable: Value

Value dimensions were measured using nineteen (19) statement items based on PERVAL scale (Sweeney & Soutar, 2001). In order to determine the scale items for this study, a principal component factor analysis was performed.

There were issues of low communalities for four items (V13, V17, V18, and V19) which were considered for deletion. The factor analysis was then rerun again. The KMO score was .943 (meritorious), which indicated that the factor analysis technique was appropriate. The Bartlett's test of sphericity was significant at a level of .000. All items had factor loadings above .50 and the results of the Cronbach's alpha was .951, which achieved the satisfactory level needed. The explained variance was 60.29%. (see Table 4.7).

Table 4.7
Factor Analysis and Reliability Test Result on Value

Value	Factor Loadings
	Factor 1
Is one that I would enjoy	.732
Would make me want to experience it	.738
Is one that I would feel relaxed about experiencing	.788
Would make me feel good	.805
Would give me pleasure	.801
Would help me to feel acceptable	.781
Would improve the way I am perceived	.834
Would make a good impression on other people	.793
Would give me social approval	.763
Is reasonably priced	.732
Offers value for money	.761
Is a good service for the price	.767
Has consistent quality	.756
Is well made	.800
Has an acceptable standard of quality	.788
Cronbach's Alpha	.951
Eigenvalues	9.405
Variances Explained (%)	60.29
Cumulative (%)	60.29
The Kaiser-Meyer-Olkin measure of Sampling adequacy.	.943
The Barlett's test of Sphericity	
Approx. Chi-Square	
4384.925	
df	105
Sig.	.000

Note Only factor loadings > .50 are shown.
 Only those items that loaded on the factors with eigenvalues greater than 1 are shown.

The results of reliability and validity tests for all variables are shown in Table 4.8. The results of factor analysis reduced some of the dimensions and required other dimensions to be renamed as suggested by Hair et al. (2007). Thus, the hypotheses that concern the latter dimensions needed to be restated.

Table 4.8
The Dimensions Discovered Before and After Factor Analysis

Before factor analysis	After factor analysis
Student satisfaction	Student satisfaction
Service quality	Service quality
- Tangibles	- Responsiveness
- Reliability	- Combination of tangibles and reliability
- Assurance	- Empathy
- Responsiveness	- Assurance
- Empathy	
Academic quality	Academic quality
- Academic factor	- Course quality
- Course content	- Academic facilities
- Teaching method	- Teaching quality
Value	Value

4.2 Restatement of the Study Hypotheses

Following the previous results from the factor analysis, the hypotheses are restated as follows.

H1: There is a positive relationship between service quality dimensions and student satisfaction.

H_{1,1}: There is a positive relationship between responsiveness and student satisfaction.

H_{1,2}: There is a positive relationship between combination of tangibles and reliability and student satisfaction.

H_{1,3}: There is a positive relationship between empathy and student satisfaction.

H_{1,4}: There is a positive relationship between assurance and student satisfaction.

H2: There is a positive relationship between academic quality dimensions and student satisfaction.

- H_{2,1}: There is a positive relationship between course quality and student satisfaction.
- H_{2,2}: There is a positive relationship between academic facilities and student satisfaction.
- H_{2,3}: There is a positive relationship between teaching quality and student satisfaction.

H3: There is the moderating effect of value on service quality dimensions and student satisfaction

- H_{3,1}: There is the moderating effect of value on responsiveness and student satisfaction
- H_{3,2}: There is the moderating effect of value on the combination of tangibles and reliability and student satisfaction
- H_{3,3}: There is the moderating effect of value on empathy and student satisfaction
- H_{3,4}: There is the moderating effect of value on assurance and student satisfaction

H4: There is the moderating effect of value on academic quality dimensions and student satisfaction

- H_{4,1}: There is the moderating effect of value on course quality and student satisfaction
- H_{4,2}: There is the moderating effect of value on academic facilities and student satisfaction
- H_{4,3}: There is the moderating effect of value on teaching quality and student satisfaction

4.3 Descriptive Statistics

Descriptive statistics for this study included minimum, maximum, mean, and standard deviations. As mentioned in the previous section, all the variables (student satisfaction, service quality, academic quality, and value) were measured using a five- points Likert scale. The summary of the descriptive statistics of the variables is shown in Table 4.9.

Table 4.9
Descriptive Statistics of the Variables

N = 346				
Variables	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable				
Student Satisfaction	1.67	5.00	3.8868	.67682
Independent Variables				
Service Quality				
- Responsiveness	1.00	5.00	3.2884	.60981
- Combination of tangibles and reliability	1.17	5.00	3.4961	.59397
- Empathy	1.25	5.00	3.0311	.65961
- Assurance	1.00	5.00	3.1599	.65358
Academic Quality				
- Course quality	2.14	5.00	3.9509	.50938
- Academic facilities	1.60	5.00	3.6821	.64026
- Teaching quality	2.50	5.00	4.0665	.47882
Moderator variable				
Value	1.21	5.00	3.6042	.56081

The mean values of all variables are between 3.03 to 4.06, with the average standard deviation ranging from .47 to .67, which is lower than 1.0 as suggested for the data variability (Sekaran & Bougie, 2010), meaning that the respondents were very consistent in their opinions (Hair et al., 2006).

Based on the mean score of all variables, student satisfaction is considered moderate with the mean value at 3.88. For service quality, the mean scores vary from 3.03 to

3.49 which falls between low to moderate bands. Another interesting observation is on the empathy dimension which is found to have the lowest mean score; meanwhile, a combination of tangibles and reliability is found to have the highest mean of 3.49. Academic quality is rated moderate to high by the respondents, ranging from 3.68 to 4.06, which is higher than the results for service quality. For the value, it is considered moderate with the mean value at 3.60. However, overall mean scores of all variables are considered moderate.

4.4 Test of Hypotheses

In order to test the hypotheses, regression analysis and hierarchical regression analysis were utilized. In this study, the multiple regression was used to test hypotheses H1 and H2. In addition, this analysis was used to gauge the prediction power of service quality and academic quality on student satisfaction. Besides, the hierarchical regression analysis was used to test the moderating effect of value on service quality and academic quality toward student satisfaction, or H3 and H4.

Prior to testing the hypotheses as mentioned earlier, the data were examined to confirm that the assumptions for testing hypotheses were met. The major assumptions examined were: normality, linearity, homoscedasticity, and multicollinearity (Hair et al., 2006). The evaluation on these assumptions revealed no significant violation. The outliers were deleted. The skewness was between -0.436 to 0.027, not larger than +1 or smaller than -1, and the kurtosis was between -0.139 to 0.871, not exceeding +3 and below -3 (see Table 4.10). The histogram and the normality probability plot (P-P plots) of the regression standardized residual also

indicated that the normality was verified (see Figure 4.4 and 4.5). The tolerance value and variance inflation factor (VIF) were checked to identify the problem of multicollinearity and it was found that the tolerance value of all variables was not less than .20 and the VIF value less than 10 which indicated that there was not a problem of multicollinearity (see Table 4.11). The linearity, homoscedasticity and the independence of the error terms were examined by investigating the scatter plot of the residuals, and it was found that there was no clear relationship between the residual and the predicted value which confirmed the linearity, homoscedasticity and the independence of residuals (see Figure 4.6).

Table 4.10
The Skewness and Kurtosis Result for Each Variable

Variables	Range	
	Skewness	Kurtosis
Student satisfaction	-.339	-.139
Responsiveness	-.357	.645
Combination of tangibles and reliability	-.351	.388
Empathy	-.074	-.042
Assurance	-.090	.509
Course quality	-.366	.696
Academic facilities	-.436	.484
Teaching quality	.027	.366
Value	-.292	.871

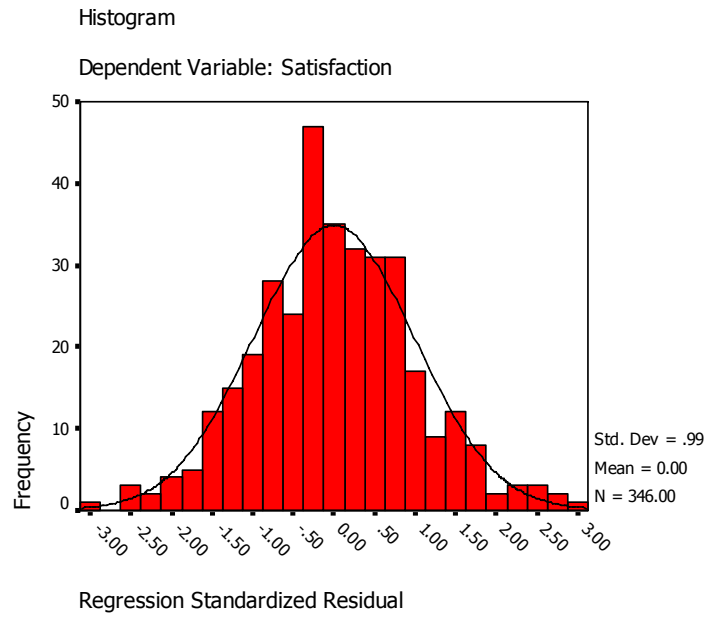


Figure 4.4
Histogram of the Regression Residuals

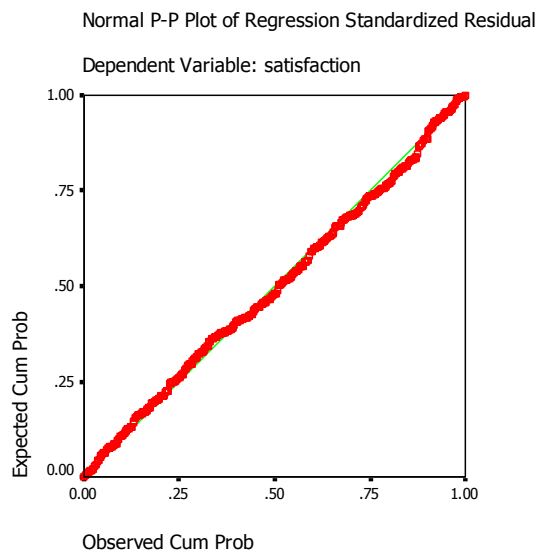


Figure 4.5
Normality Testing Using Normal Probability Plot

Table 4.11
Multicollinearity Test

Variables	Tolerance value	VIF
Responsiveness	.548	1.826
Combination of tangibles and reliability	.439	2.277
Empathy	.620	1.613
Assurance	.745	1.343
Course quality	.423	2.362
Academic facilities	.333	3.002
Teaching quality	.447	2.238
Value	.403	2.481

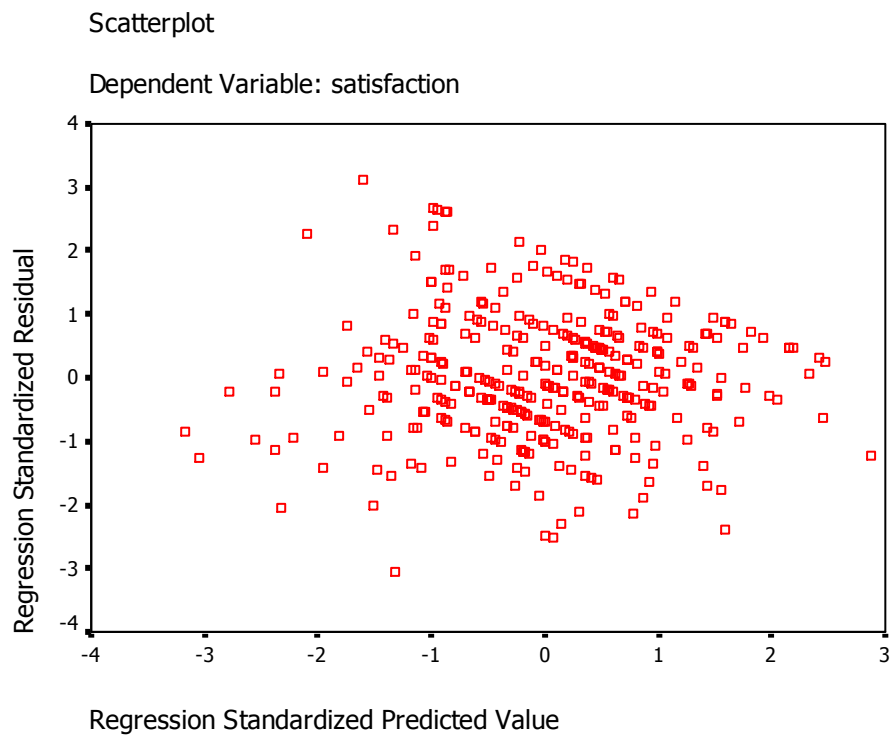


Figure 4.6
Scatterplot of the Residuals

4.4.1 Correlation Analysis

Pearson correlation was employed to explore the relationship among all the independent variables (service quality and academic quality), moderating variable (value), and dependent variables (student satisfaction). There were two important issues that had to be determined in this test: (1) whether the correlation coefficient is statistically significant which was considered by the p-value, and (2) that the strength of the relationship was acceptable which was considered by the *r*-value. In order to determine the level of the relationship between variables, Hair et al., (2007) suggested the rule of thumb as shown in Table 4.12.

Table 4.12
Rule of Thumb about Correlation Coefficient Size

Coefficient Range	Strength of Association
$\pm.91 - \pm 1.00$	Very strong
$\pm.71 - \pm.90$	High
$\pm.41 - \pm.70$	Moderate
$\pm.21 - \pm.40$	Small but definite relationship
$\pm.00 - \pm.20$	Slight, almost negligible

Based on the above table, the size of the correlation coefficient is used to quantitatively describe the strength of the association. The negative value indicates negative correlation and positive value reveals otherwise. Meanwhile, a suggested rule of thumb is that a strong correlation coefficient (*r*) value of .8 or greater is problematic (Cooper & Schindler, 2003).

The results of the relationship between the studied variables are shown in Table 4.13.

Table 4.13
Result Summary of the Pearson Correlation

	SA	SQ1	SQ2	SQ3	SQ4	AQ1	AQ2	AQ3	V
SA	1								
SQ1	.311**	1							
SQ2	.422**	.567**	1						
SQ3	.352**	.492**	.428**	1					
SQ4	.302**	.402**	.269**	.450**	1				
AQ1	.309**	.369**	.467**	.347**	.138**	1			
AQ2	.358**	.417**	.647**	.348**	.185**	.681**	1		
AQ3	.366**	.351**	.480**	.334**	.201**	.664**	.690**	1	
V	.534**	.548**	.639**	.478**	.280**	.613**	.649**	.539**	1

** Correlation is significant at the 0.01 level (2-tailed).

- SA = Student satisfaction
- SQ1 = Responsiveness
- SQ2 = Combination of tangibles and reliability
- SQ3 = Empathy
- SQ4 = Assurance
- AQ1 = Course quality
- AQ2 = Academic facilities
- AQ3 = Teaching quality
- V = Value

Based on Table 4.13, the Pearson correlation results indicated that at a confidence level of 99% all the studied variables were found to have a positive relationship and that their correlations exist. Service quality dimensions (responsiveness, combination of tangibles and reliability, empathy, and assurance) were found to have a positive relationship on student satisfaction. There is a moderate positive correlation between a combination of tangibles and reliability with student satisfaction ($r = .422, p < .01$), and a small positive correlation between responsive ($r = .311, p < .01$), empathy ($r = .352, p < .01$), and assurance ($r = .302, p < .01$) on student satisfaction. Academic quality dimensions were also found to have the positive relationship on student satisfaction as well. There is a small to moderate correlation between those three dimensions of academic quality namely: course quality ($r = .309, p < .01$), academic facilities ($r = .358, p < .01$), and teaching quality ($r = .366, p < .01$). Further

investigation revealed value has a small and moderate relationship on service quality dimensions, academic quality dimensions and student satisfaction (r between .280 to .649, $p < .01$).

Overall, the above results identify the relationship between each of the variables. Referring to the above results, these correlations indicate that the independent and dependent variables show a significant relationship in the multiple regressions. The possibility that value will act as a moderator as well as a predictor is indicated by the significant correlations between it and both the independent and dependent variables. In addition, even though the use of Pearson correlation aims to explain the correlation among the studied variables, it is unable to predict how much service quality and academic quality contributed toward student satisfaction. Consequently, multiple regression analysis was carried out and is discussed in the following section.

4.4.2 Hierarchical Regression Analysis

Multiple regression analysis describes to what extent the variance of the criterion (dependent) variable is linked to the predictor (independent) variables (Zikmund et al., 2010). For this study, this analysis was performed to understand the relationship between service quality and academic quality on student satisfaction. Moreover, it is also intended to determine the predictive power of independent variables (referring to service quality and academic quality) toward the dependent variable (referring to student satisfaction). Besides this, in order to test the effect of moderator (value), the hierarchical regression analysis was tested to investigate how far the value moderates

the relationship between service quality dimensions and academic quality dimensions on student satisfaction.

As shown in Table 4.14, the first step, with a significant F value of 16.613 ($p < .001$, R^2 of .256), indicates there is a linear relationship between the dependent and independent variables, and thus, the model is considered good. The R-square value .256 implies that 25.6% of the variance in student satisfaction can be explained by service quality and academic quality ($R^2 = .256$, adjusted $R^2 = .241$). Meanwhile, the remainder, at 74.4%, is determined by other factors to be untouched by the study.

In step one, the hypotheses ($H_{1.1}$, $H_{1.2}$, $H_{1.3}$, $H_{1.4}$, $H_{2.1}$, $H_{2.2}$, and $H_{2.3}$) were examined with multiple regression analysis by regressing service quality dimensions (responsiveness, combination of tangibles and reliability, empathy, and assurance), academic quality dimensions (course quality, academic facilities, and teaching quality), and the dependent variable (student satisfaction). Based on the results, out of the seven dimensions of service and academic qualities, four hypotheses ($H_{1.2}$, $H_{1.3}$, $H_{1.3}$, $H_{1.4}$, and $H_{2.3}$) namely, combination of tangibles and reliability ($\beta = .244$, $p < .001$), empathy ($\beta = .123$, $p < .05$), assurance ($\beta = .150$, $p < .01$), and teaching quality ($\beta = .161$, $p < .05$) have a significant effect on student satisfaction.

The moderator is added in step two, where the model is significant with an F value of 21.231 ($p < .001$, R^2 of .335). Both the independent and moderating variable contributed 33.5% of variance in student satisfaction. In the third step, the multiplicative interaction of each independent variable with moderator was entered.

It was found that the model is also significant with F value of 12.206 ($p < .001$, R^2 of .357) with the increase of R^2 from step 2 to step 3 of 2.2%. Out of seven multiplicative interactions, two multiplicative interactions are significant at a 0.05 confidence level. Those interactions are: (1) Interaction between academic facilities and value ($\beta = 1.773$, $p < .05$), and (2) interaction between teaching quality and value ($\beta = -2.007$, $p < .05$). Thus, the hierarchical regression analysis supports the moderating effect of value for hypotheses H_{4.3} and H_{4.4}.

Table 4.14
Hierarchical Regression Using Value as a Moderator in the Relationship between Service Quality, Academic Quality, and Student Satisfaction

Variables/DV	Student satisfaction		
	Std Beta		
	Step1	Step2	Step3
<u>IV</u>			
- Responsiveness	-.017	-.091	.036
- Combination of tangibles and reliability	.244***	.142*	.563
- Empathy	.123*	.066	-.329
- Assurance	.150**	.142**	.104
- Course quality	.026	-.083	.335
- Academic facilities	.009	-.081	-1.099*
- Teaching quality	.161*	.152*	1.130**
<u>Moderator</u>			
- Value		.443***	1.567***
<u>Interaction terms</u>			
- Responsiveness x Value			-.219
- Combination of tangibles and reliability x Value			-.772
- Empathy x Value			.621
- Assurance x Value			.036
- Course quality x Value			-.862
- Academic facilities x Value			1.773*
- Teaching quality x Value			-2.007*
F	16.613***	21.231***	12.206***
R ²	.256	.335	.357
Adjusted R ²	.241	.319	.328
R ² change	.256	.079	.022
F change	16.613***	40.107***	1.592

Note *** $p < .001$; ** $p < .01$; * $p < .05$

To more fully understand the meaning of these interactions, post hoc graphs were designed for the significant interactions. Once the post hoc graphs were drawn, it was important to identify the type of moderators (pure or quasi). The step proposed by Sharma, Durand and Gur-Arie (1981) were utilized for the study to identify the types of moderator variables.

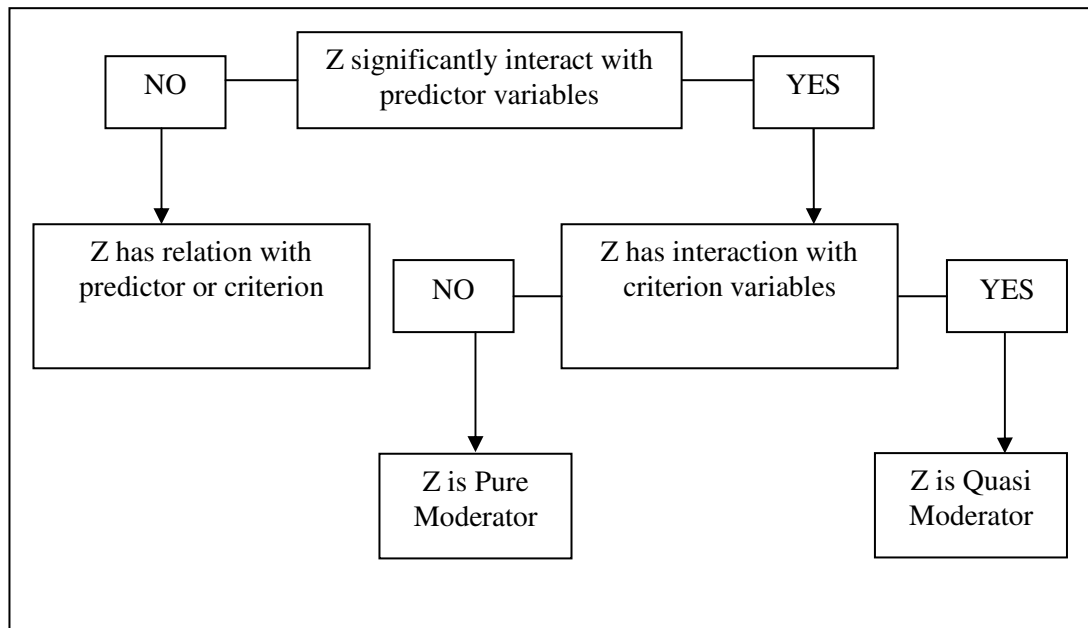


Figure 4.7
 Framework for Identifying Moderator Variable (Adapted from Sharma, Durand & Gur-Arie, 1981)

As perceived in Figure 4.8, with the greater level of value, academic facilities is more imperative as an influence for student satisfaction. In other words, the relationship between academic quality and student satisfaction is moderated by value. In this particular case, value can be regarded as the quasi moderator for the relationship because the independent effect of the moderator variables is found to be statistically significant ($r = .534, p < .01$) (see Table 4.13). Thus, the graph provides substantial support for the judgment of the criteria.

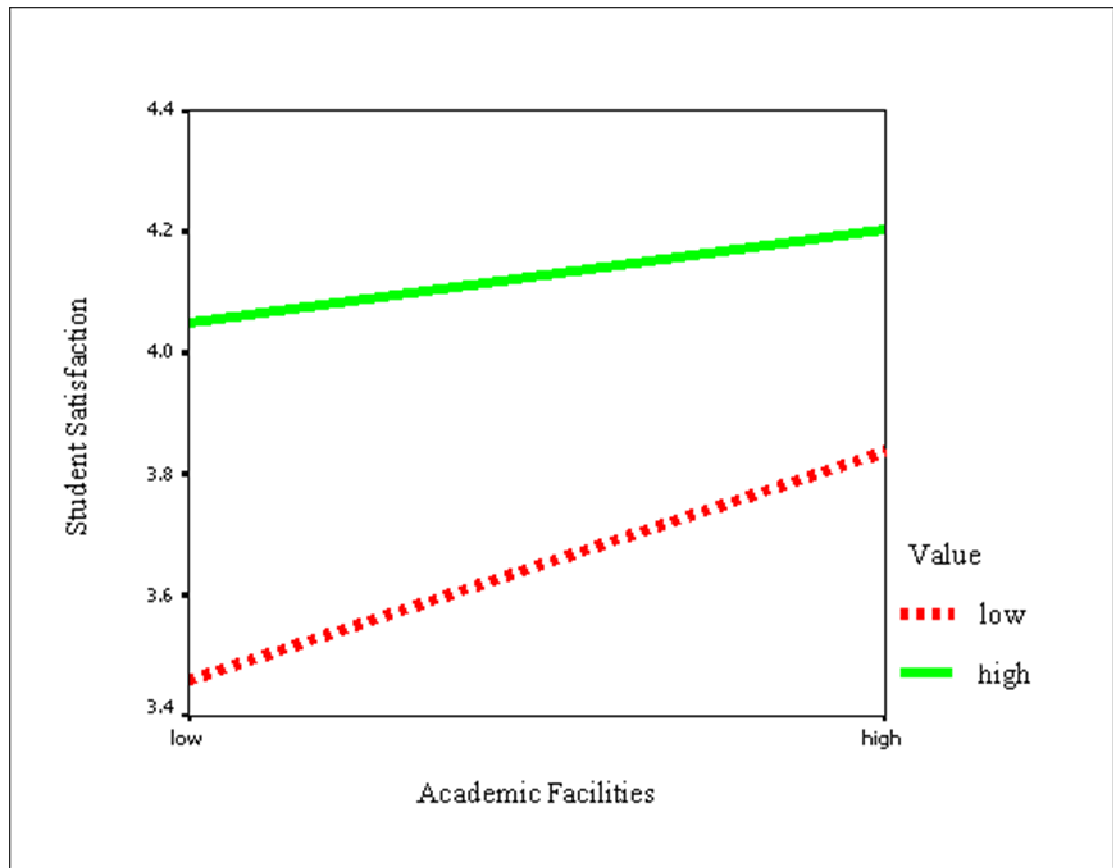


Figure 4.8
The Relationship between Academic Facilities and Student Satisfaction with Value as the Moderator

In Figure 4.9, it was demonstrated that when value is high, teaching quality is a more important influence upon student satisfaction compared to when value is low. In other words, student satisfaction becomes higher when students perceive that the teaching quality offered by a university is worth. Meanwhile, student satisfaction does not increase much when students perceive that this offering is not worth as acceptable by students. The graph shows that the stated relationship between teaching quality and student satisfaction is stronger when value is high. In this particular case, value can be regarded as the quasi moderator for the relationship

because the independent effect of the moderator variable is found to be statistically significant ($r = .534, p < .01$) (see Table 4.13).

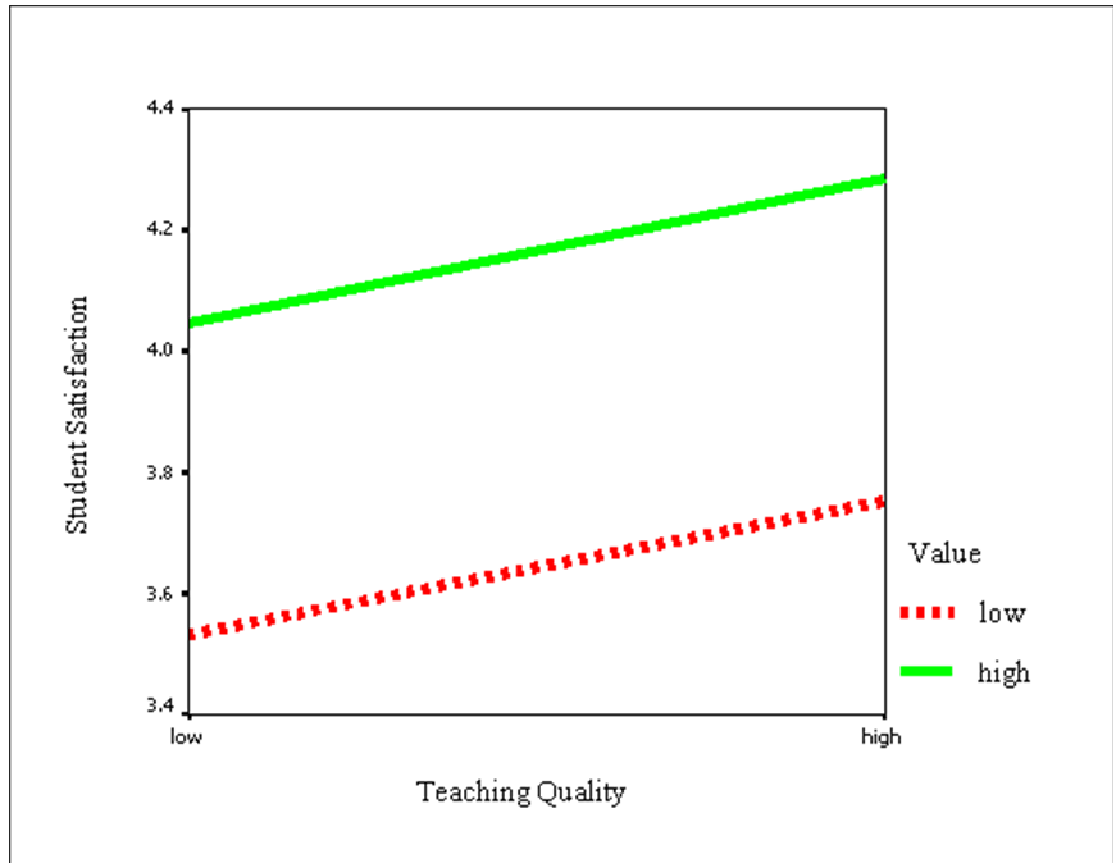


Figure 4.9
The Relationship between Teaching Quality and Student Satisfaction with Value as the Moderator

Based upon the data analyses with a total of fourteen formulated hypotheses, six are supported. The summary of hypotheses testing is presented in Table 4.15.

Table 4.15

Summary of Hypotheses Testing

Numbers	Hypothesis	Results
H _{1,1}	There is a positive relationship between responsiveness and student satisfaction.	Not supported
H_{1,2}	There is a positive relationship between combination of tangibles and reliability and student satisfaction.	Supported
H_{1,3}	There is a positive relationship between empathy and student satisfaction.	Supported
H_{1,4}	There is a positive relationship between assurance and student satisfaction.	Supported
H _{2,1}	There is a positive relationship between course quality and student satisfaction.	Not supported
H _{2,2}	There is a positive relationship between academic facilities and student satisfaction.	Not supported
H_{2,3}	There is a positive relationship between teaching quality and student satisfaction.	Supported
H _{3,1}	There is the moderating effect of value on responsiveness and student satisfaction	Not supported
H _{3,2}	There is the moderating effect of value on the combination of tangibles and reliability and student satisfaction	Not supported
H _{3,3}	There is the moderating effect of value on empathy and student satisfaction	Not supported
H _{3,4}	There is the moderating effect of value on assurance and student satisfaction	Not supported
H _{4,1}	There is the moderating effect of value on course quality and student satisfaction	Not supported
H_{4,2}	There is the moderating effect of value on academic facilities and student satisfaction	Supported
H_{4,3}	There is the moderating effect of value on teaching quality and student satisfaction	Supported

4.5 Chapter Summary

This chapter presents the results based on the statistical analysis, and several points are achieved. Firstly, the goodness of data was measured, and after that, the respondent profiles were reported. The measurements of validity and reliability then were tested by the utilization of the Cronbach's alpha and the exploratory factor analysis. The restatement of research hypotheses was made, and both descriptive and inferential statistics reported. Finally, the hypotheses testing were analyzed.

The descriptive statistics (mean) shows that the students ranked the extent of service quality aspects that they perceived, from the highest to the lowest performance in the following orders: combination of tangibles and reliability, responsiveness, assurance, and empathy. The academic quality dimensions perceived by the students can be ranked in this order: 1) teaching quality, 2) course quality, and 3) academic facilities.

The inferential statistics using Pearson correlation test shows that both service quality and academic quality were found to have a positive relationship upon student satisfaction. The multiple regression was used to gauge and explain variance for both service quality and academic quality that had an effect on student satisfaction. From seven hypotheses which aim to measure the service quality dimensions and academic quality dimensions that affect student satisfaction, only four hypotheses were supported and the regression results indicated that about 25.6% of the variance in student satisfaction can be explained by both service quality and academic quality aspects.

With regard to the moderating effect, two interaction effects are found: (1) there is a moderating effect of value on academic facilities and student satisfaction, and (2) there is a moderating effect of value on teaching quality and student satisfaction. Accordingly, in the next chapter (Chapter Five), discussions, managerial and theoretical implications, suggestions for future research, and conclusion of the study are given.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.0 Introduction

This chapter concludes the research. As stated in Chapter 1, the purpose of this study was to (1) examine the relationship between service quality and academic quality on student satisfaction, and (2) test the moderating effect of value as the moderator variable on the relationship among service quality, academic quality, and student satisfaction in the government universities in southern region of Thailand. Based on the statistical testing results, it was found that six hypotheses out of fourteen hypotheses developed were supported whilst the remaining hypotheses were not supported. Consequently, this concluding chapter presents the details discussion of the main findings and the hypotheses results obtained from the current study. Practical and theoretical implications, recommendations, research limitations, and suggestions regarding further research are also provided.

5.1 Recapitulation of the study

Generally, this study sought to understand the relationship between service quality, academic quality, value, and student satisfaction in the context of the higher education institutions located in the southern region of Thailand. In order to investigate the research problem cited in the Chapter 1, service quality was selected as the first independent variable with the five dimensions of tangibles, reliability, responsiveness, assurance, and empathy as based on SERVPERF instrument developed by Cronin and Taylor (1992). Academic quality, which affected the

dependent variable or student satisfaction, was selected as the second independent variable for this study using the three dimensions of academic factor (Angell et al., 2008), course content (Kwan & Ng, 1999), and teaching methods (Navarro et al., 2005). At the same time, as based on the PERVAL instrument developed by Sweeney and Soutar (2001), value was selected as the supplement variable, the moderator variable for the relationship between the aforementioned variables.

The population size of this study is 125,135 students at ten public universities in southern Thailand: Nakhon Si Thammarat Rajabhat University, Prince of Songkla University, Princess of Naradhiwas University, Phuket Rajabhat University, Rajamangala University of Technology Srivijaya, Songkhla Rajabhat University, Suratthani Rajabhat University, Thaksin University, Walailak University, and Yala Rajabhat University. The self-administrated survey questionnaires were distributed to the total 768 samples as mentioned in the section 3.5.1. A total 346 questionnaires were usable for data analysis.

Eventually, the findings of the study will attempt to answer a number of research questions as follows:

- (1) What is the level of student satisfaction, service quality, and academic quality in higher education sector in Thailand?
- (2) What is the relationship between service quality and student satisfaction in the higher education sector in Thailand?

- (3) What is the relationship between academic quality and student satisfaction in the higher education sector in Thailand?
- (4) Does value moderate the relationship between service quality and student satisfaction in the higher education sector in Thailand?
- (5) Does value moderate the relationship between academic quality and student satisfaction in the higher education sector in Thailand?

In this study, the four main hypotheses (H1, H2, H3, and H4) were postulated to investigate the relationship between service quality, academic quality, and value on student satisfaction. There are four set of hypotheses postulated for this study. The first set of hypotheses, the hypothesis one (H1), aimed to investigate the positive relationship between service quality dimensions and student satisfaction. There were altogether five- sub hypotheses (H_{1.1}, H_{1.2}, H_{1.3}, H_{1.4}, and H_{1.5}) within the construct of H1. The second set of hypotheses, the hypothesis two (H2), aimed to explore the positive relationship between academic quality dimensions and student satisfaction. A total of three-sub hypotheses (H_{2.1}, H_{2.2}, and H_{2.3}) were developed for this purpose. The next set of hypotheses (H3 and H4) aimed to gauge the moderating effect of value on the relationship between both service quality and academic quality on student satisfaction.

The results received from the data analysis in Chapter 4 indicated that with the current study, the postulated theoretical framework needed to be reestablished due to the fact that the results of the exploratory factor analysis indicated that only four dimensions were extracted from the service quality dimensions. Academic quality

dimensions, after regrouping, were comprised of three dimensions. However, both value and student satisfaction proved to be of single dimension as hypothesized.

To summarize, in order to achieve the goodness of measure for both its reliability and validity as mentioned in Chapter 3, the studied variables needed to be renamed and the hypotheses needed to be restatement as mentioned in Chapter 4. There were four sub-hypotheses to measure the positive relationship between service quality dimensions (responsiveness, the combination of tangibles and reliability, empathy, and assurance) and student satisfaction ($H_{1.1}$ to $H_{1.4}$), and three sub-hypotheses to measure the positive relationship between academic quality dimensions (course quality, academic facilities, and teaching quality) and student satisfaction ($H_{2.1}$ to $H_{2.3}$). Six sub-hypotheses gauged the value that moderated the relationship between service quality dimensions and student satisfaction ($H_{3.1}$ to $H_{3.4}$), and three sub-hypotheses were used to comprehend the value that moderated the relationship between academic quality dimensions and student satisfaction ($H_{4.1}$ to $H_{4.3}$).

The present study demonstrated that there were positive relationship between the four dimensions of service quality (responsiveness, the combination of tangibles and reliability, empathy, and assurance) and student satisfaction as indicated by the Pearson correlation test. In response to their strengths of association, the four dimensions of service quality fell between small (but definite relationships) to moderate strength of association which was ranked from the highest strength of association to the lowest strength of association in this order: (1) the combination of tangibles and reliability, (2) empathy, (3) responsiveness, and (4) assurance.

Furthermore, referring to the descriptive statistics, there are two additional interesting points. Firstly, the students perceived that the combination of tangibles and reliability were the service quality dimension that the university was able to perform best in comparison to other service quality dimensions. Secondly, the students regarded empathy, which refers to the level of caring and individualized attentions of the university provided to their students, as the lowest service quality dimension.

The variable 'academic quality' is defined as the academic aspects which consist of three dimensions: academic factor (Angell et al., 2008), course content (Kwan & Ng, 1999), and teaching method (Navarro et al., 2005). The present study explored why the selected academic quality dimensions found in various literature needed to be relabeled to suit the result of factor analysis and the context of the study. The new labels of the three dimensions of academic aspects are course quality, academic facilities, and teaching quality. The Pearson correlation proved that there are positive relationships between these three dimensions of academic quality and student satisfaction. The strength of association between academic quality dimensions and student satisfaction are small but definitely form a relationship. In response to the descriptive statistics, it was pointed out that the students ranked the university academic quality dimensions at the highest level. Teaching quality was placed in the highest level of mean score, followed by course quality, and academic facilities dimensions.

Although the results from the Pearson correlation indicated that all seven sub-hypotheses of service quality and academic quality dimensions ($H_{1.1}$, $H_{1.2}$, $H_{1.3}$, $H_{1.4}$, $H_{2.1}$, $H_{2.2}$, and $H_{2.3}$) have a positive relationship with student satisfaction, it is not possible to predict or explain how much service quality and academic quality are able to explain student satisfaction. Consequently, multiple regression analysis was used to test the positive relationship between the developed hypotheses. The results of multiple regression analysis showed that four hypotheses were supported ($H_{1.2}$, $H_{1.3}$, $H_{1.4}$, and $H_{2.3}$). Those were (1) the positive relationship between combination of tangibles and reliability and student satisfaction, (2) the positive relationship between empathy and student satisfaction, (3) the positive relationship between assurance and student satisfaction, and (4) the positive relationship between teaching quality and student satisfaction. Furthermore, the multiple regression result shows that 25.6% of the variance in student satisfaction is explained by service quality and academic quality (refer to Table 4.13 and 4.14).

The variable 'value' for this study represents 'get and give component'. It is the assessment of both service quality and academic quality dimensions according to students experience with the consumption and usage of both service and academic qualities. Value for this study was based on PERVAL scale developed by Sweeney and Soutar (2001) which is the multi - items measure. The hierarchical regression analysis was used to gauge the moderating effect of value on the relationship between service quality dimensions ($H_{3.1}$ to $H_{3.4}$), and academic quality dimension ($H_{4.1}$ to $H_{4.3}$) in regard to student satisfaction. The findings from this hierarchical regression analysis found that only two hypotheses ($H_{4.2}$ and $H_{4.3}$) out of seven

hypotheses were supported, namely (1) the relationship between academic facilities and student satisfaction, and (2) the relationship between teaching quality and student satisfaction, both moderated by value.

Pertaining to the findings from the open-ended section in the questionnaire, further understanding regarding the students' opinions and suggestions towards their satisfaction with university service quality, academic quality, and the value they perceived were given. For service quality improvement, there were comments from students seeking improvement of their university's physical facilities, such as more coverage of internet WIFI throughout the campus, the improvement of parking facilities for motorbikes and cars, the cleanliness of canteen and toilets, and the sports equipment in the sport complex which should be improved. The impoliteness and unwillingness of supporting staff to help students were also noticeable complaints. In relation to academic quality, the suggestions obtained from the students were mostly related to the academic facilities and course quality. In regard to academic facilities, there was a call for classroom to be better finished with modern equipment such as computers and projectors for lectures, and that the computer provided in a computer lab should be ready to use. Meanwhile, suggestions from students regarding the course quality (aside from lectures in the classroom) were related to supplementary academic field trips which they felt would fulfill their learning experiences.

5.2 Discussions of the Findings

Although an empirical investigation on the relationship between service quality dimensions and academic quality dimensions upon student satisfaction and the role of value as the moderator variable have been presented in the previous section, there are several findings found in this current study that need to be addressed.

Accordingly, this section is intended to discuss in further detail the relationship of service quality, academic quality on student satisfaction, and the role of value as a moderator to the hypothetical relationships of the study. Therefore, this section is organized based on the five research questions posted in Section 5.1.

5.2.1 The Level of Student Satisfaction, Service Quality, and Academic Quality

In relation to the first research question posted, an examination of the student satisfaction, service quality, and academic quality was conducted and presented in Table 4.9 in the previous chapter. The level of student satisfaction, service quality, and academic quality in Thailand higher education institutions for this study seems to be not very high which indicates that further close monitoring is required. This highlights how the continuous improvement of the universities regarding their service quality and academic quality is imperative. This was supported by the expressions of several prominent scholars in Thailand who asserted and raised their concerns that the quality, regarding aspects of student satisfaction, is the most vital factor which many higher education institutions need to gauge prior to understanding how their offerings to students would need to be met in order for students' demands

to be satisfied (Sawasdiwat, 2010; Graham, 2010; Panich, 2005; Sangnapaboworn, 2003; Kirtikara, 2001; Komolmas, 1999; Panyarachun, 1999).

The mean scores of all variables for this study, which ranged from 3.03 to 4.06, using a five-points Likert scale, imply that the students still perceived that both service and academic aspects were not fully performed to the level of quality that they expected. The student's level of satisfaction was rated at 3.88 (see Table 4.9). Whilst this could be considered a moderate to high score, there is still a lot of room for improvement when the top possible score of five is taken into account; indeed, a lot more work needs to be done in order to attain a more desirable level of student satisfaction, and the universities should concentrate their focus more to this extent. Besides this, it was found that students rated the service quality and academic quality that the universities offered them, ranging from 3.03 to 4.06, as high but not as found in student satisfaction. Service quality and academic quality that the universities offer should be urgently implemented to suit the needs of their students which can be put in order from the highest to lowest importance as: 1) empathy, 2) assurance, 3) responsiveness, 4) combination of tangibles and reliability, 5) academic facilities, 6) course quality, and 7) teaching quality.

5.2.2 The Relationship between Service Quality and Student Satisfaction

In order to answer this research question, this study has demonstrated that service quality is an important indicator of student satisfaction. The increase of service quality led to the same increase in student satisfaction. As revealed earlier, out of four sub-hypotheses (responsiveness, the combination of tangibles and reliability,

empathy, and assurance), only three sub-hypotheses (the combination of tangibles and reliability, empathy, and assurance) were supported and showed positive and significant relationships with student satisfaction. Implicatively, students in the context higher education institutions seem to treat these service quality dimensions (the combination of tangibles and reliability, empathy, and assurance) as the key to determine the successful of the university's offerings. University management has to carefully ascertain the degree of service performance that is offered to their students, who can also be referred to as 'customers'.

In the context of Thailand, a number of previous works have reported that there is a strongly linkage between service quality and satisfaction in various sectors as mentioned earlier in Chapter 1. This current study discovered the new aspect to the existing knowledge of a positive relationship between service quality and student satisfaction in the context of higher education which has not been developed.

Previous studies mentioned that (a) the examination of the relationship between service quality and student satisfaction in the higher education setting is imperative (Athiyaman, 1997), and (b) student satisfaction can be increased with the offering of an excellent service by a university (Khan & Matlay, 2009). Student satisfaction may increase when students perceive that service quality delivered by a university suits or matches their needs (De Jager & Gbadamosi, 2010). Even though there are several alternatives for researchers to select the service quality instruments or tools to measure their quality of service offerings, the selection of the service instruments may depend on the judgment of the researcher. As was pointed out earlier in Chapter

2, although there are differences in terms of questions or items that are used to measure the service quality, the intention of researchers should be to explain and increase understanding and knowledge regarding the quality of service.

For this study, it is apparent that the use of 'SERVPERF' as the instrumentation for collecting the student feedback regarding the university's service performance was applicable and suitable. The results of this study indicated that there was a positive relationship between service quality dimensions and student satisfaction which is apparently in line with the previous assertions by several scholars (Aldridge & Rowley, 1998; Angell et al., 2008, Athiyaman, 1997; Petruzzellis et al., 2006). In addition, this study also proved that it is befitting to use the SERVERF instrument in measuring the service quality in this context as it was evident that in all dimensions that have been measured are consistent with other studies conducted in the context of higher education (Abouchedid & Nasser, 2002; Aldridge & Rowley, 1998; Arambewela & Hall, 2009; Athiyaman, 1997; Angell et al., 2008; Douglas et al., 2006; Hill, 1995; Hishamuddin & Azleen, 2008; Lagrosen et al., 2004; Navarro et al., 2005; Oldfield & Baron, 2000; O'Neill, 2003; O'Neill & Palmer, 2004; Owlia & Aspinwall, 1996).

Regarding the service quality dimensions, a factor analysis was conducted on 22 items of SERVPERF statements, and it was found that the factor analysis with satisfactory loading produced the different dimensions which were dissimilar to the original version of this instrument. Only four dimensions were discovered by this study, with tangibles and reliability being grouped into single dimension (see Table

4.3 and Table 4.4 in Chapter 4). A possible explanation for this occurrence is that there may be differences in terms of the cultural aspects. In the study by Kwan and Ng (1999), mentioned earlier in Chapter 2, service quality in higher education was examined with Asian samples. From their study, it was perceived that cultural differences can have an impact on evaluation and perception. Studies conducted in the Western and non-Western context may produce differences in terms of the findings (Wilkins & Balakrishnan, 2013). In addition, it is also suggested by Lagrosen et al. (2004) that when there are differences in terms of the national cultures, it is crucial to find an explanation related to cultural theory. Accordingly, it is important to highlight the remarks made by Hofstede (1993), where he stated that *“Culture to me is the collective programming of the mind which distinguishes one group or category of people from another. In the part of my work I am referring to now, the category of people is the nation.”*

Other plausible reasons also enlighten why the SERVPERF instrument measured in this study was found to be different in terms of its dimensionality. This is perhaps because of the effect of time that is related to the SERVPERF instrument itself and the fact that the perceptions of the respondents change over time. The SERVPERF instrument, developed in 1992, has been tested broadly in various contexts and locations. Therefore, over the 20 years of this instrument’s usage, the effect of time may have induced the targeted respondents to look or gauge the dimensions of the SERVPERF instrument to be different from their point of view. This rationale has been supported by Hill (1995) and O’Neill (2003) who found and reported that in the context of higher education, freshman students and senior students evaluate the

importance of service factors from their own perspective in a dissimilar way and that and students may also become more demanding overtime regarding the service offerings of a university. Thus, the way that service quality dimensions found dissimilarities in terms of dimensionality for this study can be said to be new findings that contribute to our existing knowledge.

The phenomenon whereby the service quality dimensions were grouped into one dimension is also evident. In reference to the study by Witkowski and Wolfinbarger in (2001), which explored the formality dimension of service quality in bank and restaurant customers compared between Thailand and Japan, it was found that the samples in this study perceived assurance and responsiveness to be an indistinguishable dimension. Thus, it is not surprising to see that there is an inconsistent in terms of service quality dimensions found in this study. Further clarification on each of the detailed relationship of four sub-hypotheses is discussed as follows:

a) Responsiveness

Responsiveness was measured using five items (Table 4.3 in Chapter 4) with the value of Cronbach's alpha at .869 which achieved the satisfactory level and consistency suggested as a rule of thumb by Hair et al. (2006), in line with the previous study done by the original developer of this instrument (Cronin & Taylor (1992). It was indicated by the Pearson correlation test that the responsiveness has a positive relationship with student satisfaction (see Table 4.13 in Chapter 4) ($r = .311$, $p < .01$), which appears to be in line with previous assertions such as that by

Lagrosen et al. (2004). However, for this current study, the multiple regression test reported that there was no effect of responsiveness and student satisfaction which is in good agreement with the previous researches done in Malaysian context (Al-Alak & Alnaser, 2012; Rasli et al., 2012) as well as Swedish context (Agbor, 2011). Based on these three previous studies, 'responsiveness' was not significantly related to satisfaction.

In order to elucidate the reason why there is no relationship between responsiveness and student satisfaction, it is essential to refer back to the meaning of 'responsiveness'. Initially, responsiveness refers to 'the willingness of the university to provide help and prompt service to its students'. With this in mind, students may see that the willingness of the university to provide help and prompt service was not the most important reason in attaining their satisfaction. Responsiveness was not the important issue in the students' minds when they were familiar with the university's service. Helping and promptly serving students was not a compulsory factor in determining or gauging student satisfaction. Therefore, 'responsiveness' possibly was not the valid factor or essential attribute for satisfaction according to the students' perceptions. Nonetheless, it is still important to measure this dimensions for the study due to the fact that it can reflect the students' perception of what they think regarding the willingness of the university to provide help and prompt service to them.

In regards to the mean score for the items that were used to measure responsiveness, ranging from 3.00 to 3.49, it implies the level of the responsiveness can be rated as

moderate to high performance. The five items can be ranked from the highest performance to lowest performance in this order: *Employees get adequate support from the institution to do their jobs well (3.49), employees of the institution are polite (3.40), I can trust employees of the institution (3.36), I can feel safe in my transaction with the institution's employees (3.18), and employees of the institution are too busy to respond to student requests promptly (3.00).* Judging from these mean scores, it is pointed out that university staff are frequently the cause of dissatisfaction. Their lack of promptness in taking action towards students' problems often leads to discontentment. There are a number of reasons why this response by students regarding their requirement occurred. First, the number of students per member of staff in Thailand is disproportionately high. For example, the registrar office of the Prince of Songkla University presently has 37 staff to serve 32,103 students. The proportion of student to staff is equal 867 students per number of staff, obviously to a very high ratio. Second, the higher education institutions in this study are government universities which, in the view of the staff, is regarded as places for permanent employment for the duration of one's working life, so they felt that there is no need to respond to students' requirement or need to perform best level of service or attend to students' problem promptly. Due to this reason, responsiveness was not found to have an effect on student satisfaction in this study.

b) The Combination of Tangibles and Reliability

The measurement of the combination of tangibles and reliability for this study was determined by six items (Table 4.3 in Chapter 4) with the value of Cronbach's alpha at .853, which achieved a satisfactory level and consistency (Hair et al. (2006) and

which was in line with the previous study by Cronin and Taylor (1992). In relation to the inferential statistic test using the multiple regression, it was revealed that a positive relationship between the combination of tangibles and reliability with student satisfaction existed ($\beta = .244, p < .001$) which appears to be in line with previous assertions made by researchers such as O'Neill and Palmer (2004), Douglas et al. (2006), Abili et al. (2011), and Karami and Olfati (2012).

One plausible reason to explain this relationship is that since students began attending university, students may have directed their experiences to what they find visually appealing which is related directly to the extent of the university's physical facilities and equipment such as learning building, car parking facilities, and furnishings where those facilities are ready to be used with reliability. If those qualities are matched or meet their requirements, students are satisfied. This finding suggests that if university administrative departments are able to improve or closely monitor their physical facilities and equipment and promise those tangible facets with reliability and accuracy, it greatly contributes towards and enhance their student satisfaction. This finding lends support to the previous study done by Owlia and Aspinwall (1996) who proposed the conceptual framework for the quality dimensions in the context of higher education where tangibles and reliability aspects are the non-academic factors that are recommended to be tested empirically.

Referring to the mean score for the items that were used to measure this dimension (the combinations of tangibles and reliability) which ranges between 3.33 to 3.63. The level of the combination of tangibles and reliability can be rated as *high*

performance. Those seven items were ranked from highest performance to lowest performance in this order: *The institution is dependable (3.63)*, *the institution has up-to-date equipment (3.61)*, *the institution's physical facilities are visually appealing (3.58)*, *the appearance of the physical facilities of the institution is in line with the type of service provided (3.43)*, *when I have problems, the institution is sympathetic and reassuring (3.40)*, and *when the institution promises to do something by certain time, it does so (3.33)*.

Judging from the mean scores, the findings evidently revealed a high mean value among students' perceptions towards the combination of tangibles and reliability that universities are able to offer, and this was found to have a positive relationship upon their satisfaction. However, there is more necessity of improvement especially on the ability of the staff to respond to students' problems with sympathy and reassuring within a specific timeline as promised to students. Implicatively, tangible facilities are not the cause of problem that could reduce student satisfaction. Instead, it is the capability of staff that provides those services when dealing directly with students.

c) Empathy

The measurement of empathy made use of four items (Table 4.3 in Chapter 4). The Cronbach's alpha for this dimension was .778, which achieved the suggested rule given by Hair et al. (2006) but lower than the previous study by Cronin and Taylor (1992). The inferential statistics by multiple regression indicated that the empathy has a positive relationship with student satisfaction ($\beta = .123, p < .05$), which is also in good agreement with previous studies by O'Neill and Palmer (2004),

Hishamuddin and Azleen (2008), Ismail et al. (2009), Abili et al. (2011), and Karami and Olfati (2012).

As mentioned above, several studies support the relationship between empathy and student satisfaction. However, it was discovered by O'Neill and Palmer (2004) that the empathy dimension in their study achieved the lowest performance among the service quality dimensions. This seems to be consistent with the current study since the findings reported that the level of empathy offered was rated as *low performance*. The mean scores for the four items used to measure empathy within this study ranged from 2.83 to 3.08. The highest performance to lowest performance are rated in the following: *The institution does not have my best interests at heart (3.17)*, *employees of the institution do not give me personal attention (3.08)*, *the institution does not give me individual attention (3.04)*, and *employees of the institution do not know what my needs are (2.83)*.

In evaluating the mean scores, all items seem to highlight troubling student perceptions about the attitude of university staff toward the services they provide. One reason to explain why this dimension of service quality appears at the level of *low performance* is because the variables of student satisfaction towards the service offerings from staff are not consistent with the quality standard that has been set by the Office of National Education Standards and Quality Assessment (ONESQA). There are 9 areas of KPIs performance assessment for higher education institutions to report performance to the ONESQA: KPI 1: Philosophy, Commitments, Objectives, and Operation Plans, KPI 2: Teaching and Learning, KPI 3: Student

Development Activities, KPI 4: Research, KPI 5: Academic Service, KPI 6: Promotion of Thai Arts and Culture, KPI 7: Administrative Management, KPI 8: Finance and Budgeting, and KPI 9: System and Mechanism in Quality Assurance. Based on the above mentioned criteria, it seems to be evident that student satisfaction towards the university service quality offered by higher education institutions in Thailand is being ignored and is not ranked as a high concern by this institution. Thus, to this point, university administrative departments should pay closer attention to the level of service that they provide and recognize that service quality as well as students are the key to their survival and should never be overlooked. It is imperative for these departments to communicate to their staff that their service failure could result in student dissatisfaction, a fall in student numbers and a deterioration of the university's reputation. It is essential to train staff to understand that service encounters with customers are an integral and extremely important aspect of their working routing. Phusavat and Kanchana (2008) acknowledged that the setting of competitive priorities for organizations is the major criterion that could help to judge, maintain and improve competitiveness, and which also contributes towards an organizational development.

d) Assurance

Assurance was measured by three items as indicated in Table 4.3. It was shown that the Cronbach's alpha value at .664 lower than that by Cronin and Taylor (1992); however, this value still fell within in a range not lower than .60 and, as suggested by Hair et al. (2006), this value may decrease to .60 in exploratory research. Thus, this

Cronbach's alpha of internal consistency reliability for this dimension was still within the accepted value.

The multiple regression indicated that assurance has a positive relationship with student satisfaction ($\beta = .150, p < .01$), in line with previous studies by Douglas et al. (2008) and Ismail et al. (2009). All three items used to measure assurance range between the values of 3.01 to 3.28, implying that the level of assurance rated as *low performance*, which was the same as that of the empathy dimension. The three items can be ranked from the highest performance to lowest performance in the following order: *The institution does not tell its students exactly when services will be performed (3.28), employees of the institution are not always willing to help students (3.19), and I do not receive prompt service from the institution's employees (3.01).*

Judging these mean scores, it is clear that university staff were unable to administer service quality with the level of excellence required by students. A delay of services occurred which resulted in the reduction of students trust and confidence. Perhaps, a plausible reason to explain the low performance in this dimension is that there is not necessity for staff to take care of their students' requests and problems since this is not directly reflected in their performance evaluation, or is not in the criteria used to gauge the staff's working performance. This seems to be a normal phenomenon in government universities in Thailand that provide a lifelong employment policy for their staff, consequently leading to ignorance by employees on the importance of service offerings and in recognizing how service quality plays an important role in an organizations' survival. This lack of awareness and consideration is quite different to

the Western context of higher education whereby the quality of service is considered as a critical determinant of student satisfaction (Cronin & Taylor, 1992; Spreng & Mackoy, 1996; Athiyaman, 1997; Aldridge & Rowley, 1998; Petruzzellis et al. (2006); Angell et al. 2008). Therefore, it is important for the university administrative to develop a campaign to enhance the motives of the university staff in delivering of their services to students such as the competition among involving unit to award the best practice or the best voting service score from students. An interesting point to be raised as another example is the implementation of university staff perception that students must be treated as the customers. Without customers, university cannot survive.

5.2.3 The Relationship between Academic Quality and Student Satisfaction

In order to measure the academic quality offered to students, it is imperative to realize that there are a numbers of features, attributes or factors that are used by students to determine how they perceive academic quality (Yorke, 1999). Academic quality is one of the main factors in respect of student satisfaction (Hill, 1995; Athiyaman, 1997; Kwan and Ng, 1999; Navarro et al., 2005; Petruzzellis et al., 2006; Angell et al., 2008; De Jager and Gbadamosi, 2010).

The findings of the present study prove that there is a meaningfully significant relationship between academic quality and student satisfaction and that academic quality plays an important role upon student satisfaction. In this study, academic quality refers to student perceptions towards the specific quality dimensions related to academic aspects. It is hypothesized that ‘academic quality’ covers by three

dimensions: academic factor, course content, and teaching method. The measurement items were adopted those by Angell et al. (2008) for the measure of academic factor, Kwan and Ng (1999) for the measure of course content, and Navarro et al. (2005) for the measure of teaching method. However, a result of factor analysis reveals that academic quality dimensions were required to be regrouped and renamed. Those three dimensions were thus relabeled as course quality, teaching quality, and academic facilities.

The results of the multiple regression test found that these three dimensions of academic quality (course quality, teaching quality, and academic facilities), only one dimension (teaching quality) has a positive relationship with student satisfaction. Meanwhile, course quality and academic facilities did not appear to affect student satisfaction. Thus, for additional clarification, the following is a detailed discussion on each of the relationships between the three sub-hypotheses mentioned in research question number three:

a) Course quality

For this dimension, course quality was measured using seven items (Table 4.5 in Chapter 4) to obtain the satisfactory level of its internal consistency reliability value at .886. The inferential statistics using the multiple regression analysis reported that there was no effect on student satisfaction in terms of course quality. The quality of course may not be an important factor in determining student satisfaction even though it was indicated by Pearson correlation that course quality has a positive relationship with student satisfaction ($r = .309, p < .01$).

One plausible reason to clarify this phenomenon is that students may be satisfied with the course quality that is provided by a university before they experience and enter the university. They are quite possibly satisfied with the course quality from what their friends who are already enrolled, have studied, or graduated at a university have told them. This may be in regards to the reputation and quality of courses at the university. This ‘word-of-mouth’ reputation then results in a student’s chosen selection and enrollment at a university.

A further plausible reason to explain why course quality was not the important attribute for gauging the student satisfaction is that the course quality is already controlled and monitored closely by ONESQA as a quality indicator at KPI2: teaching and learning aspect. Thus, an aim for a government university in the southern region of Thailand is able to perform its core functions should be not only to meet the ONESQA criteria but also to ensure that the university is able to perform course quality to a high level in order to meet its students requirements, resulting in students’ trust in the quality of course.

Referring to the descriptive statistics test of course quality dimensions, it was not surprised to see the situation that students were satisfied most by the quality of courses offered by their university was also in line with the study made by Gamage, Suwanabroma, Ueyama, Hada and Sekikawa (2008), who explained that in the specific context of higher education in Thailand both academic and non-academic aspects influence student satisfaction. In addition, they also asserted that the quality

of programs is one of the main academic aspects. This claim explains why the universities in this study keep course quality to higher level than that of service quality.

Regarding the descriptive statistics test, the mean score of the seven items that represent the course quality for this study can be rated as *high performance*. The scores ranged from 3.83 to 4.18, and can be ranked from the highest performance to lowest performance in the following order: *The level at which these subjects were discussed was appropriate (4.18)*, *the extent and distribution of the subjects were correct (4.01)*, *the usefulness of the module components offered in my career development (4.00)*, *the chance to develop my abilities and prepare for my career (3.93)*, *the usefulness of the module components in fulfilling my personal needs (3.87)*, *the appropriateness of requirements for my course (3.83)*, and *the proportion between theory and practice was adequate (3.83)*.

b) Academic Facilities

For this dimension, the Cronbach's alpha, consisting of five items (see table 4.5), was found to be .821. The Pearson correlation test indicated the relationship between academic facilities and student satisfaction at a small strength of association ($r = .358$, $p < .01$). However, the multiple regression analysis proved that student satisfaction was not affected by academic facilities, and thus, academic facilities can be considered as the least important indicator in student satisfaction in the context of this study. This correspond with the study of Fernandes et al. (2013) which reported academic facilities such as library services and IT resources are not considered as the

crucial factors in measuring student satisfaction. The education institutions' support facilities are less important in comparison with teaching quality (Douglas et al., 2006).

The descriptive statistics reported that the mean score ranges from 3.31 to 3.71 which can be rated as *moderate to high performance*. It was not rated highly or importantly in comparison with course quality and teaching quality from the students' perspectives. Thai students seem to generally gauge academic facility facets as less important priority. It can be ranked from highest to lowest in the following order: *Variety of library books and journals (3.71), the bibliography, documentation and etc. provided were adequate (3.71), the quality of material emphasized in course (3.70), the chance that my study fulfills my personal needs (3.68), and good computing and web facilities (3.31).*

c) Teaching Quality

Teaching quality was measured by four items. Based on Table 4.5, the Cronbach's alpha for this dimension is .831, which is considered acceptable. The relationship between teaching quality and student satisfaction is evident as it was reported by the inferential statistics using the multiple regression ($\beta = .161, p < .05$). The descriptive statistics test reported that the mean score of these four items rated as *high performance* and ranged from 4.01 to 4.16. The ranking of these items are listed from the highest performance to lowest performance in the following: *Engaging skilled lecturers (4.16), practical skills taught (4.08), the teaching methods were appropriate (4.02), and easily transferable skills (4.01).*

Judging from the mean score, the findings evidently revealed a high mean value of teaching quality at government universities in southern Thailand. It means that these universities have been able to offer their teaching quality at a high level and are accomplished in delivering teaching quality. This result is consistent with previous studies that demonstrated a significant relationship between teaching quality and student satisfaction (Hill,1995; Athiyaman,1997; Aldridge and Rowley, 1998; Lagrosen et al., 2004; Navarro et al., 2005; Petruzzellis et al., 2006; Douglas et al., 2006; Douglas et al., 2008; Arambewela & Hall, 2009; Fernandes et al., 2013; Wilkins and Balakrishnan, 2013).

Teaching quality impacts largely on student satisfaction due to the fact that a high standard of teaching with quality lecturers has a consequential influence upon student satisfaction (Arambewela & Hall, 2009). Perhaps, a high level performance in terms of teaching quality can be explained by not only the monitoring system that is guided by ONESQA but also the application of Thailand manpower planning as mentioned in the National Economic and Social Development Planning of the higher education sector in Thailand. Referring to this plan, it is indicated that “the successful execution of social and economic development projects depends greatly upon the availability of efficient and capable personnel”. This policy has been practiced in the higher education sector in Thailand where a lot of processes are required for the employment of each academic member of staff in a university. This therefore brings a higher potential of recruiting better academic staff to a university.

Overall, the descriptive statistics of this study show that the means scores of both service quality and academic quality dimensions are rated as *moderate to high performance*. However, the three dimensions of academic quality (course quality, academic facilities, and teaching quality) have a higher means score when compared to the four dimensions of service quality (responsiveness, the combinations of tangibles and reliability, empathy, and assurance). To summarize, these mean scores can be ranked from the highest performance to lowest performance in this order: *Teaching quality (4.06)*, *course quality (3.95)*, *academic facilities (3.68)*, *the combination of tangibles and reliability (3.49)*, *responsiveness (3.28)*, *assurance (3.15)*, and *empathy (3.03)*.

Additionally, the multiple regression technique was further tested to find how much the effects of service quality and academic quality are able to explain student satisfaction. It is shown that 25.6% of the variance in student satisfaction is elucidated by service quality and academic quality (see Table 4.14). This means that there are more factors that need to be subjected to investigation. Further suggestions regarding this will be discussed later in the recommendations and suggestions section.

5.2.4 The Moderating Effect of Value on Service Quality, Academic Quality, and Student satisfaction

The measurement of value as the moderator variable that moderates the relationship between service quality and academic quality on student satisfaction in this current study is the multi-items measure scales, the PERVAL scale developed by Sweeney

and Soutar (2001). The Cronbach's Alpha of .951 and the 60.29% explained variance indicated that the multiple item scales measurement used in this study shows better performance regarding the validity and reliability as mentioned earlier by Parasuraman et al. (2004).

As mentioned earlier in Chapter Two, the moderating role of value on service quality and satisfaction were previous studies by Caruana et al. (2000) in the UK and Ismail et al. (2009) in Malaysia. These two studies mentioned that value played a moderating role on the relationship between service quality and customer satisfaction as it was found that the step of enter of value can explain more variance in satisfaction. However, those two studies show a deficiency in a number of items. Firstly, the measurement of value was single-item scale. Secondly, these two studies explained the role of service quality to satisfaction. Thirdly, the sample size for the two studies was limited. Thus, in this study, the moderating effect of value was proposed as the multi-items scales measurement, and that is not only the relationship between service quality and satisfaction which is moderated by value but that value also moderates the relationship between academic quality and satisfaction in the context of higher education. Finally, this study introduced a greater sample size whereby it was able to generalize the findings to a greater degree which led to stronger statistical power (Zikmund et al., 2010; Hair et al., 2010; Tabachnick & Fidell, 2007).

This study was designed to examine the predictive relationship between service quality, academic quality, and student satisfaction when it is moderated by value.

Therefore, along with the hypotheses H3 and H4, the previous chapter has hypothesized that; (1) there is the moderating effect of value on service quality dimensions and student satisfaction, and (2) there is the moderating effect of value on academic quality dimensions and student satisfaction.

Based on the Table 4.14 in the Chapter Four, the increase on R^2 with the value of .335 in the second step whereby the moderator variable was entered indicated that value is the moderator variable that moderates the relationship between service quality, academic quality, and student satisfaction. This is because value can increase the explanation power of the model from 25.6% to 33.5%. This means that value is the further supplement variables that have an impact on the main relationship of service quality, academic quality, and student satisfaction. Thus, this can be considered as a contribution of the present study and an answer to the study research objective number four and five.

In relation to the hypotheses testing of the moderating effect of value on sub-dimensions of service quality and academic quality, the statistical results presented in Table 4.14 previously also demonstrated that from seven multiplicative interactions, some of results were as expected. Two multiplicative interactions were supported: the moderating effect of value on academic facilities and student satisfaction ($H_{4.2}$), and the moderating effect of value on teaching quality and student satisfaction ($H_{4.3}$). The details underlying the supported hypotheses are discussed as follows.

The first supported interaction effect was the moderating effect of value on academic facilities and student satisfaction ($\beta = 1.773, p < .05$). This result suggests that value plays a significant role in the increment the level of academic facilities perceived by students on student satisfaction. This reflects that the relationship between academic facilities and student satisfaction is high when value is high. It leads to the suggestion for the university to understand that the investment on academic facilities such as good computing facilities, variety of books and journals in the library, and plenty of other learning materials would result in higher level of student satisfaction. This is supported by the previous study by Mowery and Sampat (2005) who explained that the university academic facilities become an important aspect for students because these facilities can be considered as the source of fundamental knowledge that most of students can access outside their lecture hall. Thus, it is advised that the improving of these study-related would also contribute to be the good quality indicator for the university due to the fact that student considered these offering as their source of satisfaction.

The second supported interaction effect was the effect of value on teaching quality and student satisfaction ($\beta = -2.007, p < .05$). The relationship between teaching quality is stronger when the value is higher. Teaching quality and student satisfaction is dependent upon value. As it is generally accepted that the university mission is to provide the knowledge to their students, it seem to be not surprising to find that value is the supplementary variable on the relationship between teaching quality and student satisfaction. Consequently, it is imperative for administrative department within universities to notice that students are sensitive to teaching quality.

At this juncture, it may be stated that the relationship between academic facilities and teaching quality is high when value is high. If the value increased, the academic facilities, and teaching quality also increased, resulting in higher level of student satisfaction. For the purpose of understanding these two interaction effects easily, post hoc graphs were drawn to depict the relation among them (see Figure 4.8 and 4.9). The graphs visually demonstrate that greater levels of value and better levels of qualities (academic facilities and teaching quality) have a consequential influence on student satisfaction.

Based on these findings, it can be suggested that student satisfaction deals with the feeling or affective states of students. This assertion is parallel with the suggestion made by Oliver (1980) and Yi (1991) that satisfaction occurs after the post consumption of products or services, and that this fulfillment could happen as part of either outcome or process based approach. Student satisfaction as an outcome approach resulted from the students' experiences regarding that consumption of services while student satisfaction as a process approach occurred as likes and dislikes. The level of service offerings or the transaction that a university is able to generate to its students is linked to student satisfaction (Cronin & Talyor, 1992). Regarding this, these two interaction effects prove that value has a significant influence upon student satisfaction, in line with several assertions made by Chen and Chen (2010); Fournier and Mick (1999); Hutchinson et al. (2009); Kuo et al. (2009); Ravald and Grönroos (1996); and Yang et al. (2004). Thus, value is the most important supplementary variable in the context of this study.

Meanwhile, contradictory results were found where five interactions were not supported. The influence of value failed to show the moderating effect of the studied sub- dimensions of; (1) responsiveness, (2) the combination of tangibles and reliability, (3) empathy, (4) assurance, and (5) course quality on student satisfaction. Hence, value does not contribute and have any significant role in these studied sub- dimensions in the relationship with student satisfaction.

Perhaps, the plausible reason may rely on the unique characteristics of the government universities in Thailand itself. This characteristic has an effect to value when it was measured as the “give and get” components. As mentioned by Kirtikara (2001), the civil servants in Thailand have their own characteristics which differ from the other types of organizations. They have secure employment for their entire working life, whereby they are able to work until their retirement, and fully supported by the government in terms of their salary. This results in student perception that staffs in government universities work under less constraint than those in private universities (Schiller & Liefner, 2006).

In addition, regardless of how much students engaged, contacted or even their money paid with the university’s offering, a lower or higher level of their satisfaction do not materialize. The student loan scheme maybe the other plausible reasons that can perhaps be able to explain this occurrence. In the higher education system in Thailand, especially in the government universities, every student is able to access this student loan scheme (Talasophon, 2011). This scheme not only offered student a loan but also gives a wide range of repayment periods including a loan repayable

over more than fifteen years (Ziderman, 2003). This policy comes to the answer in explaining no matter how much they paid for their education fees. They would never realize or value it because those amount of loan can be repaid in the future after they complete the study.

Perhaps, this occurrence maybe due to the way how Thai people think. In Thailand, Thai people generally believe that what they pay and what they get in terms of their educational costs, is not something that can be compared when taking into account their satisfaction or dissatisfaction. They maybe never realized on the value of those that are important factors in their life. This occurrence reinforces the reason formally explained by Mackay (1999), cited in Sweeney and Soutar (2001) that in respect of the consumption of products and services by customers, very few consumers are entirely induced by emotion. Therefore, the occurrence of these findings can possibly explain why students may sometimes not show their true feelings or awareness that 'value' is truly important in their life.

5.2.5 The Current Main Issues Related to Student Satisfaction, Service Quality, Academic Quality and Value (if any) Discovered from the Study

In the open-ended section obtained from the questionnaires, out of a total of 346 completed questionnaires, only 102 or 29 percent of the respondents provided their opinions. It was difficult to obtain some respondents' full opinion since there were multiple check lists needed to be answered, resulting in avoidance or hesitation by the participants to give their views in the final part of the questionnaire. According to Jain and Gupta (2004), lengthy questionnaires may sometimes cause problems for

respondents, leading to hesitation, incomplete section and sometimes even rejection of a survey. It was not surprising to obtain some low opinions from the students in this study.

Based on the open-end questions, there were 102 opinions given; 72 of these were comments on service quality, and 30 were in reference to academic quality. The following selected quotes are some of the most important opinions obtained from students.

For service quality

“It would be great if the university provided us with more coverage of internet Wi-Fi on campus”

“I want a 24 hours convenient store”

“I want more security guards on the campus”

“It would be great if there is a shuttle bus service around the campus”

“Plenty of car parking on the campus is needed”

“I want more available seats, a higher level of cleanliness and better hygiene in the canteen”

“Cleaner toilet should be provided for us”

“Supporting staff should always show their willingness to help the students”

“I think that supporting staff are sometimes impolite”

“The university should listen to the students’ voices”

“I want new equipment at the sport complex”

For academic quality

“The university should prepared class room facilities such as computer, projectors, lecture tables and air conditioning to be ready to use”

“I would like to be updated about news or announcements that are related to academic affairs”

“I want greater variety of books in the library”

“I want more modern academic facilities”

“Please provide plenty of computers that are able to serve students’ needs”

“More available computers should be provided in the lab”

“Comfortable lecture tables are needed”

“I want to go on more academic field trips”

It can be concluded here that the current main issues for service quality from the comments made by students are related to the readiness of physical facilities and equipment, the willingness of supporting staff to provide help and prompt service with politeness, and towards students’ safety and sanitation.

Whilst the students’ opinions regarding the academic quality are related to the readiness of academic facilities such as the variety of books, and the level of comfort of lecture tables provided to students, the students also suggested that providing academic field trip would improve their learning experience and enhance their knowledge.

5.3 Implication of the study

The findings from this study have several imperative implications regarding practice and theory. This section aims to explain what the results of this study imply and how those results contribute to the theory. The first section addresses the theoretical implications while the second section details out the practical implications.

5.3.1 Theoretical implications

The findings of the current study provide evidence and explanation on how service quality, academic quality and value may affect student satisfaction in the context of southern Thailand higher education institutions.

The findings also enable interested parties, i.e. scholars, university management, and the Office of Higher Education Commission, to further understand how the Equity Theory of John Stacey Adams's (1963) which is basic to the understanding of customer satisfaction, is able to be applied on the theoretical framework to determine the actual relationship between service quality and academic quality on student satisfaction. Moreover, the findings intend to explain the role of value as a multidimensional measure, and how the supplementary variable plays a role as the moderating variable in strengthening the relationship between the aforesaid variables.

Furthermore, there are some contributions to the understanding of the measurement scale used to measure all the variables in this study. The scale used was rigorously examined and validated. Subsequently, the measurement for the first independent

variable, service quality dimensions, was performed by the SERVPERF instrument developed by Cronin and Taylor (1992). The original instrument consists of 22 items with five dimensions, whereas the finding from this context of the study revealed only four dimensions of service quality consisting of 19 items. The second independent variable is the academic quality dimensions consisting of three dimensions with 18 items blended from various scholars (Angell et al., 2008; Kwan & Ng, 1999; and Navarro et al., 2005). It was found that there were three dimensions discovered by this study with 14 items extracted from the factor analysis. The moderator variable was the value dimensions used by this study based on the PERVAL scale developed by Sweeney and Soutar (2001). The measurement of student satisfaction, the dependent variable, was adopted from Athiyaman (1997), covering 6 items. The statistical testing indicated that it was also the suitable instrument for this study.

The items discovered regarding dimensionality and the goodness of data process were finally accepted and passed through to undergo further tests. The analyses of the descriptive and inferential statistics were then empirically tested. The present scale blends together all the variables to examine student satisfaction in the context of this study. This contributes to our knowledge that the multidimensionality of independent variables (service quality and academic quality) and the multi-items scale measurement of the moderator variables (value) proposed in this study are well fitted and contributed in explaining student satisfaction.

5.3.2 Practical implications

The findings of the present study have important implications for the practitioners. These implications are described as follows.

The practical implication concerns the universities administrative staff, who can use the service and academic quality dimensions as a precise measurement of how each is perceived by students. The given aspects are suitable indicators that guide the understanding of which quality aspects are performed well or how best to respond to students' demands. Meanwhile, these dimensions also enable university administration to closely monitor areas that are underscored and need to be improved. This can benefit university management and help to formulate appropriate strategies to focus on the efficiency of their service deliverance.

The study on the value also implies that it is necessary for the Office of the Higher Education Commission in Thailand and the university senate to consider the appropriate tuition fees, since it is found that the students gauge that the quality aspects provided by universities should justify good value in terms of the money that they pay. In regard to this situation, a proper pricing policy should be conducted.

5.4 Limitations of the Research

There are a few inherent limitations within the study that needed to be addressed:

Firstly, the generalization of these results might be limited to the population of Thai students enrolled in the government universities located in the southern region

Thailand. The results cannot be generalized to other higher education institutions in different areas or to separate industries.

Secondly, there are more variables apart from service quality, academic quality, and value that have not been investigated by this study and are possible to affect student satisfaction. The findings reveal that the two independent variables (service quality and academic quality) were able to explain about 25.6% of the variance of student satisfaction. Meanwhile, the representative of the moderating variable (value) as the third variable on the model used to explain student satisfaction was able to account for approximately 33.5% of the variance of student satisfaction. Thus further investigation needs to be conducted.

Thirdly, there is the limitation concerning the approach of research. This study is mainly quantitative in nature, aiming to find out the ‘cause and effect’ of the relationship among variables, but little is known about ‘why’ and ‘how’ such a relationship exist. Therefore, qualitative approach is suggested to be applied for a better understanding of how and why students make their decision on satisfaction or dissatisfaction toward the university’s offerings.

5.5 Recommendations for Future Research

Additional studies should be carried out to further examine the following areas:

As mentioned in the limitations section, future studies may be conducted in other higher education institutions located in other regions of Thailand. Moreover, it is

important to understand that each of higher education institutions has their unique characteristics. Thus, it would also applicable to carry out further research in specific higher education institutions to gain more in-depth understanding and to completely ensure the coverage and generalizability of the study.

Moreover, nearly 67% of the variance has yet to be able to explain student satisfaction. Thus, it should be attempted to look at other factors and the extent of various aspects that could have an effect on student satisfaction as well. In addition, the mixed method examination, covering both quantitative and qualitative should be conducted in order to gain an insight into understanding the relationship between variables in terms of 'cause and effect' as well as in terms of 'how' and 'why'.

As can be seen, the entry of 'value' in the model of this study was able to increase the high value of the R^2 . In other words, value is a supplement variable that also has the power to enhance or reduce the relationship of service quality and academic quality on student satisfaction. Thus, future research needs to investigate on the role of value with other variables such as student loyalty and student trust. This research also could be useful for many organizations, leading to a greater understanding about how 'value' can be considered as a competitive weapon by them in creating differentiate advantage in business as well as in ensuring the organizational survival in the market place.

Finally, as mentioned earlier by Cuthbert (1996a,b), the experiences of students are of great variety and continuously change over time. Therefore, survey of student

satisfaction regarding various service encounters and academic quality of universities should be done as a scheduled activity. It would be beneficial for universities to see the causes of satisfaction and dissatisfaction based on in the students' perception. Areas that are perceived as functioning at a level of high performance (i.e. teaching quality, course quality, and academic facilities) should then be maintained, whereas low performance sectors (i.e. assurance, empathy, and responsiveness) should be improved and closely monitored.

5.6 Conclusion

The study has aimed to contribute to the understanding of student satisfaction within the context of southern Thailand higher education institutions. It also aims to fill the void mentioned by prominent scholars, who placed their concern on the lack of works within this area, by attempting to empirically investigate the relationship amongst service quality, academic quality, and value on student satisfaction.

Although service quality, academic quality, and value have received much interest in many contexts and locations, there has been a dearth of information and little effort to integrate the entire variable into a single theoretical model and place those variables as multidimensional scale measures. Therefore, this study was conducted to develop and validate a theoretical framework to further explain the relationship between the aforementioned variables. This study has emphasized the role of service quality and academic quality as the two independent variables that have a relationship on the dependent variable which is student satisfaction. The study has also sought to discern the moderating effect of value, which has an effect on the main

relationship of the independent variables and dependent variables.

The results of this study indicated that from seven dimensions of service quality and academic quality (combination of tangibles and reliability, responsiveness, empathy, assurance, course quality, teaching quality, and academic facilities), four dimensions are significant and are found to have a positive relationship with student satisfaction: (1) combination of tangibles and reliability, (2) empathy, (3) assurance, and (4) teaching quality. In addition, the report of the increasing of R^2 in the hierarchical multiple regression indicated the moderating effect of value upon the relationship between service quality, academic quality on student satisfaction. Out of seven interaction effects of service quality dimensions and academic quality dimensions on value, two interaction effects are significant: (1) the moderating effect of value on academic facilities and student satisfaction, and (2) the moderating effect of value on teaching quality and student satisfaction.

These findings provide evidence which may be of benefit for both academics and practitioners who are pursuing their interest in this area of study. This study also has some encouraging implications for the university administration and gives some direction for future research. In addition, the entire findings produce further points of understanding taken from the same constructs measured in the various samples and locations. These cannot be referred to in this study since there are differences in the respondents' characteristics in terms of their perceptions and cultural aspects.

Thus, several suggestions were proposed for future studies such as the mixed method approach, a wider range of samples and locations, and the need to find further variables that could explain the causes of student satisfaction within the context of Thailand higher education. The desire for student satisfaction is a never ending journey, and there are always more items to be added to the existing body of literature in order to benefit both academics and practitioners. It is an extremely important area of research and crucial for the continuing stability and success of higher education institutions.

Since the higher education sector in Thailand has shown an enormous contribution to the country's development of human capital, further studies should be carried out in relation to this sector to search for better ways of improving the delivery of service which will yield positive outcomes to the higher education sector, encourage national competitiveness, and better financial contribution to the country.

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APPENDICES

APPENDIX A

Research Questionnaire (English version)

This study investigates your satisfaction with the services provided by the university. By taking about 15 minutes to fill out this questionnaire, you will help the university to evaluate what has been provided to you over the past year. The results from this study will help the university to know how to satisfy you.

Ethical concerns

All data collected in this questionnaire is confidential and only to be used for the purpose of data analysis and will not be made to third parties.

Thank you for your cooperation.

There are three parts in this survey.

- Part I: student satisfaction, service quality, academic quality and value
- Part II: your comments and suggestions
- Part III: your personal data

Part I: Satisfaction, Service Quality, Academic quality and Value

Please tick (✓) what you think of each statement below

Score	Meaning
<input type="checkbox"/> 1	Strongly disagree / Extremely poor
<input type="checkbox"/> 2	Disagree / Below average
<input type="checkbox"/> 3	Neutral / Average
<input type="checkbox"/> 4	Agree / Above average
<input type="checkbox"/> 5	Strongly agree / Excellent

Satisfaction

No.	Items	Perceptions				
		1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree
1	I am satisfied with my decision to attend the university.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	If I had to do it all over again, I would not enroll at the university.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	My choice to enroll at the university was a wise one.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I feel bad about my decision to enroll at the university.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I think I did the right thing when I decided to enroll at the university.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I am not happy that I enrolled at the university	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Service Quality

No.	Items	Perceptions				
		1 Extremely poor	2 Below average	3 Average	4 Above average	5 Excellent
7	The institution has up-to-date equipment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	The institution's physical facilities are visually appealing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	The institution's employees are well dressed and appear neat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	The appearance of the physical facilities of the institution is in line with the type of service provided.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	When the institution promises to do something by certain time, it does so.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	When I have problems, the institution is sympathetic and reassuring.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	The institution is dependable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	The institution provides its services at the time it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Items	Perceptions				
		1 Extremely poor	2 Below average	3 Average	4 Above average	5 Excellent
	promises to do so.					
15	The institution keeps its records accurately.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	The institution does not tell its students exactly when services will be performed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	I do not receive prompt service from the institution's employees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Employees of the institution are not always willing to help students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Employees of the institution are too busy to respond to student requests promptly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	I can trust employees of the institution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	I can feel safe in my transaction with the institution's employees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Employees of the institution are polite.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Employees get adequate support from the	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Items	Perceptions				
		1 Extremely poor	2 Below average	3 Average	4 Above average	5 Excellent
	institution to do their jobs well.					
24	The institution does not give me individual attention.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Employees of the institution do not give me personal attention.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Employees of the institution do not know what my needs are.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	The institution does not have my best interests at heart.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	The institution does not have operating hours convenient to all their students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Academic quality

No.	Items	Perceptions				
		1 Extremely poor	2 Below average	3 Average	4 Above average	5 Excellent
29	Engaging skilled lecturers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	Practical skills taught	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	Regular access to teaching staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	Variety of library books and journals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Easily transferable skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	Reputable degree programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	Good computing and web facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	The chance that my study fulfills my personal needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37	The appropriateness of requirements for my course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38	The chance to develop my abilities and prepare for my career.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Items	Perceptions				
		1 Extremely poor	2 Below average	3 Average	4 Above average	5 Excellent
39	The quality of material emphasized in course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40	The usefulness of the module components offered in my career development.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41	The usefulness of the module components in fulfilling my personal needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42	The proportion between theory and practice was adequate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	The bibliography, documentation and etc. provided were adequate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44	The teaching methods were appropriate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45	The level at which these subjects were discussed was appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46	The extent and distribution of the subjects were correct.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Student value

No.	Items	Perceptions				
		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<i>Services and Academic qualities from the university</i>						
47	Is one that I would enjoy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48	Would make me want to experience it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49	Is one that I would feel relaxed about experiencing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50	Would make me feel good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51	Would give me pleasure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52	Would help me to feel acceptable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53	Would improve the way I am perceived	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54	Would make a good impression on other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55	Would give me social approval	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56	Is reasonably priced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

No.	Items	Perceptions				
		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
57	Offers value for money	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58	Is a good service for the price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59	Is economical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60	Has consistent quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61	Is well made	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62	Has an acceptable standard of quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63	Has poor workmanship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64	Would not last a long time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65	Would perform consistently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part II: Comments and suggestions

If you have other inquiries/comments/suggestion for the betterment of your institution, please indicate below:

Part III: Your personal data

Gender Male Female

Age _____ years

Year of study Freshman Sophomore Junior Senior

University _____

Thank you for your valuable time

Research Questionnaire (Thai version)

แบบสอบถาม: ความพึงพอใจของนักศึกษาในภาคใต้ต่อคุณภาพที่มหาวิทยาลัยมอบให้

แบบสอบถามนี้เพื่อประโยชน์ในการพัฒนามหาวิทยาลัยในภาคใต้ของประเทศไทย

เพื่อช่วยให้มหาวิทยาลัยเข้าใจความต้องการของนักศึกษามากขึ้น กรุณาใช้เวลาประมาณ 10 นาทีในการตอบแบบสอบถามนี้ ผลจากการศึกษาจะช่วยให้มหาวิทยาลัยสามารถส่งมอบการบริการที่ดีขึ้นให้
ได้ตรงกับความต้องการของนักศึกษา แบบสอบถามนี้ไม่สามารถระบุตัวตนของนักศึกษาได้

ขอบคุณสำหรับความร่วมมือ

โปรดแสดงความคิดเห็นโดยการทำเครื่องหมาย ที่ตรงกับความคิดเห็นของนักศึกษา

หัวข้อ: ความพึงพอใจของนักศึกษา	ระดับความคิดเห็น				
	5 เห็นด้วยอย่างยิ่ง	4 เห็นด้วย	3 เฉย ๆ	2 ไม่เห็นด้วย	1 ไม่เห็นด้วยอย่างยิ่ง
1. ฉันพึงพอใจที่ตัดสินใจเข้าเรียนที่มหาวิทยาลัยนี้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. หากต้องตัดสินใจใหม่อีกครั้ง ฉันคงไม่สมัครเข้าลงทะเบียน เรียนที่มหาวิทยาลัยนี้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. การเลือกสมัครเข้าเรียนที่มหาวิทยาลัยนี้ เป็นการตัดสินใจที่ ฉลาดและถูกต้อง	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. ฉันรู้สึกแย่ที่ตัดสินใจสมัครเข้าเรียนที่มหาวิทยาลัยนี้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

หัวข้อ: ความพึงพอใจของนักศึกษา	ระดับความคิดเห็น				
	5 เห็นด้วยอย่างยิ่ง	4 เห็นด้วย	3 เฉยๆ	2 ไม่เห็นด้วย	1 ไม่เห็นด้วยอย่างยิ่ง
5. ฉันคิดว่าฉันทำถูกต้องที่เลือกสมัครเข้าศึกษาที่มหาวิทยาลัยนี้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. ฉันไม่มีความสุขที่เรียนที่มหาวิทยาลัยนี้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

หัวข้อ: คุณภาพการบริการของมหาวิทยาลัย	ระดับความคิดเห็น				
	5 เห็นด้วยอย่างยิ่ง	4 เห็นด้วย	3 เฉยๆ	2 ไม่เห็นด้วย	1 ไม่เห็นด้วยอย่างยิ่ง
7. มหาวิทยาลัยมีอุปกรณ์เครื่องมืออำนวยความสะดวกที่ทันสมัย	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. สิ่งอำนวยความสะดวกที่มหาวิทยาลัยจัดให้มีความเหมาะสมและเห็นได้ชัดเจน	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. เจ้าหน้าที่ของมหาวิทยาลัยแต่งกายเหมาะสม และสุภาพ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. อุปกรณ์และสิ่งอำนวยความสะดวกที่มหาวิทยาลัยจัดให้อยู่ในสภาพที่พร้อมใช้งาน	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

หัวข้อ: คุณภาพการบริการของมหาวิทยาลัย	ระดับความคิดเห็น				
	5 เห็นด้วยอย่างยิ่ง	4 เห็นด้วย	3 เฉยๆ	2 ไม่เห็นด้วย	1 ไม่เห็นด้วยอย่างยิ่ง
11. เมื่อนักศึกษามีปัญหา มหาวิทยาลัยสามารถแก้ไขปัญหา ของนักศึกษาได้ตามเวลาที่สัญญาไว้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. เมื่อนักศึกษามีปัญหา มหาวิทยาลัยให้ความจริงจังและเห็น อกเห็นใจต่อปัญหานั้น	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. มหาวิทยาลัยเป็นที่พึ่งพาของนักศึกษา	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. การให้บริการของมหาวิทยาลัย เป็นไปตามเวลาที่กำหนด หรือชี้แจงไว้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. มหาวิทยาลัยมีการจัดเก็บข้อมูลต่างๆ ของนักศึกษา อย่างเป็นระบบและถูกต้อง	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. มหาวิทยาลัยไม่มีการกำหนดเวลาเสร็จของงานแต่ละงาน ที่ให้บริการ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

หัวข้อ: คุณภาพการบริการของมหาวิทยาลัย	ระดับความคิดเห็น				
	5 เห็นด้วยอย่างยิ่ง	4 เห็นด้วย	3 เฉยๆ	2 ไม่เห็นด้วย	1 ไม่เห็นด้วยอย่างยิ่ง
17. นักศึกษาไม่ได้รับการบริการอย่างรวดเร็ว ทันใจจาก เจ้าหน้าที่ของมหาวิทยาลัย	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. เจ้าหน้าที่ของมหาวิทยาลัยไม่มีความเต็มใจให้บริการแก่ นักศึกษา	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. ถึงงานจะยุ่งแค่ไหน เจ้าหน้าที่ที่ให้บริการ ก็พร้อมที่จะ ให้บริการกับนักศึกษาอย่างรวดเร็ว	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. นักศึกษามีความเชื่อมั่นในตัวเจ้าหน้าที่ของมหาวิทยาลัย	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. นักศึกษามีความรู้สึกสบายใจ เมื่อต้องติดต่อกับเจ้าหน้าที่ ของมหาวิทยาลัย	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. เจ้าหน้าที่ของมหาวิทยาลัยมีความสุภาพ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. การให้บริการของเจ้าหน้าที่ ได้รับการสนับสนุนที่เพียงพอ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

หัวข้อ: คุณภาพการบริการของมหาวิทยาลัย	ระดับความคิดเห็น				
	5 เห็นด้วยอย่างยิ่ง	4 เห็นด้วย	3 เฉยๆ	2 ไม่เห็นด้วย	1 ไม่เห็นด้วยอย่างยิ่ง
จากมหาวิทยาลัย					
24. มหาวิทยาลัยไม่ใส่ใจต่อนักศึกษาเป็นรายบุคคล	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. เจ้าหน้าที่ของมหาวิทยาลัยไม่ใส่ใจต่อนักศึกษาเป็นรายบุคคล	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. เจ้าหน้าที่ของมหาวิทยาลัยไม่รู้ว่าคุณต้องการของนักศึกษา คืออะไร	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. มหาวิทยาลัยไม่คิดว่าผลประโยชน์ของนักศึกษาเป็นสิ่งสำคัญ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. เวลาการให้บริการของมหาวิทยาลัยไม่มีความเหมาะสม กับนักศึกษา	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

หัวข้อ: คุณภาพการสอนและคุณภาพวิชาการ	ระดับความคิดเห็น				
	5 เห็นด้วยอย่างยิ่ง	4 เห็นด้วย	3 เฉยๆ	2 ไม่เห็นด้วย	1 ไม่เห็นด้วยอย่างยิ่ง
29. คณาจารย์มีทักษะและความเชี่ยวชาญ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. คณาจารย์มีทักษะในการสอน	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. คณาจารย์เปิดโอกาสให้เข้าถึงได้อย่างสม่ำเสมอ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. หนังสือและวารสารต่างๆ ในห้องสมุดมีความหลากหลาย	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. คณาจารย์มีความสามารถในการถ่ายทอดความรู้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. หลักสูตรที่ศึกษาอยู่มีชื่อเสียง	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. มีคอมพิวเตอร์และอุปกรณ์เชื่อมต่ออินเทอร์เน็ตที่ดี	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. การศึกษาที่นี้เติมเต็มความต้องการของนักศึกษาได้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. เนื้อหาวิชามีความเหมาะสม	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. การศึกษาที่สามารถพัฒนาและเตรียมความพร้อมของ นักศึกษาเพื่อการทำงานต่อไปในอนาคตได้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

หัวข้อ: คุณภาพการสอนและคุณภาพวิชาการ	ระดับความคิดเห็น				
	5 เห็นด้วยอย่างยิ่ง	4 เห็นด้วย	3 เฉยๆ	2 ไม่เห็นด้วย	1 ไม่เห็นด้วยอย่างยิ่ง
39. สื่อต่างๆที่ใช้ในการเรียนการสอนมีคุณภาพดี	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. เนื้อหาวิชามีประโยชน์ต่อการทำงานในอนาคต	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. เนื้อหาหลักสูตรเติมเต็มความต้องการของนักศึกษา	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. สัดส่วนของเนื้อหาวิชาที่เป็นทฤษฎีกับการปฏิบัติมีความเหมาะสม	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. เอกสารและสื่อที่ใช้เพื่อการเรียนการสอนมีความเพียงพอ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. คุณภาพการสอนของคณาจารย์มีความเหมาะสม	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. คณาจารย์เปิดโอกาสให้ซักถามในชั้นเรียน	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. กรอบเนื้อหาวิชาเป็นไปอย่างถูกต้อง	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

หัวข้อ: คุณค่าที่ได้รับ	ระดับความเห็น				
	5 เห็นด้วย อย่างยิ่ง	4 เห็นด้วย	3 เฉยๆ	2 ไม่เห็นด้วย	1 ไม่เห็นด้วย อย่างยิ่ง
คุณภาพการบริการและคุณภาพวิชาการที่มหาวิทยาลัยจัดให้.....					
47. ทำให้อันรู้สึกมีความสุข	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. ทำให้อันอยากใช้บริการทุกๆ อย่างที่มีในมหาวิทยาลัย	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. ทำให้อันรู้สึกสบายใจ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. ทำให้อันรู้สึกดี	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. ทำให้อันพึงพอใจ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. เป็นที่ยอมรับได้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. ทำให้อันรู้สึกว่า เป็นคุณภาพที่ดี	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. เป็นคุณภาพที่ทำให้คนภายนอกรู้สึกประทับใจได้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. เป็นที่ยอมรับจากสังคม	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

หัวข้อ: คุณค่าที่ได้รับ	ระดับความเห็น				
	5 เห็นด้วย อย่างยิ่ง	4 เห็นด้วย	3 เฉยๆ	2 ไม่เห็นด้วย	1 ไม่เห็นด้วย อย่างยิ่ง
56. อยู่ในมูลค่าหรือราคาที่เหมาะสม	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. คู่มีค่ากับค่าใช้จ่ายที่เสียไป	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. เหมาะสมกับค่าใช้จ่ายที่เสียไป	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. มีราคาประหยัด	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60. เป็นคุณภาพที่คงที่	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61. เป็นคุณภาพที่จัดสรรมาอย่างดี	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62. อยู่ระดับของคุณภาพที่ยอมรับได้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63. ไม่เป็นมืออาชีพร	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64. ไม่แน่นไม่นอน	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65. เป็นคุณภาพที่คงเส้นคงวา	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

นักศึกษาอยากเสนอแนะหรือร้องเรียนให้มหาวิทยาลัยทำอะไรเพื่อให้นักศึกษาพึงพอใจมากยิ่งขึ้น กรุณาระบุ

ขอความกรุณาเสนอแนะ

หรือแสดงความคิดเห็น

ข้อมูลส่วนตัว

เพศ

ชาย

หญิง

อายุ

_____ ปี

ชั้นปีที่ศึกษาอยู่

ปีที่ 1

ปีที่ 2

ปีที่ 3

ปีที่ 4

มหาวิทยาลัย

ม.สงขลานครินทร์

ม.ทักษิณ

ม.วลัยลักษณ์

ม.นราธิวาสราชนครินทร์

ม.ราชภัฏนครศรีธรรมราช

ม.ราชภัฏสุราษฎร์ธานี

ม.ราชภัฏภูเก็ต

ม.ราชภัฏยะลา

ม.ราชภัฏสงขลา

ม.เทคโนโลยีราชมงคลศรีวิชัย

ขอบคุณสำหรับเวลาอันมีค่า

APPENDIX B

STATISTICAL ANALYSIS

Appendix B.1: Pilot test

Reliability Analysis of Satisfaction

Reliability

Notes

Output Created		28-SEP-2013 22:19:41
Comments		
Input	Data	C:\Documents and Settings arueban.y\Desktop\Dissertation Data Analysis\pilot test\pilot.sav
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	30
Syntax		RELIABILITY /VARIABLES=sa1 sa2 sa3 sa4 sa5 sa6 /FORMAT=NOLABELS /SCALE(ALPHA)=ALL/MODEL=ALPH A.
Resources	Elapsed Time	0:00:00.00

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients

N of Cases = 30.0

N of Items = 6

Alpha = .8949

***** Method 1 (space saver) will be used for this analysis *****

Reliability Analysis of Service Quality

Reliability

Notes

Output Created		28-SEP-2013 22:19:52
Comments		
Input	Data	C:\Documents and Settings arueban.y\Desktop\Dissertation Data Analysis\pilot test\pilot.sav
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	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	30
Syntax		RELIABILITY /VARIABLES=sq1 sq2 sq3 sq4 sq5 sq6 sq7 sq8 sq9 sq10 sq11 sq12 sq13 sq14 sq15 sq16 sq17 sq18 sq19 sq20 sq21 sq22 /FORMAT=NOLABELS /SCALE(ALPHA)=ALL/MODEL=ALPH A.
Resources	Elapsed Time	0:00:00.00

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients

N of Cases = 30.0

N of Items = 22

Alpha = .8292

***** Method 1 (space saver) will be used for this analysis *****

Reliability Analysis of Academic Quality

Reliability

Notes

Output Created	28-SEP-2013 22:20:04	
Comments		
Input	Data	C:\Documents and Settings arueban.y\Desktop\Dissertation Data Analysis\pilot test\pilot.sav
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	30
Syntax	RELIABILITY /VARIABLES=aq1 aq2 aq3 aq4 aq5 aq6 aq7 aq8 aq9 aq10 aq11 aq12 aq13 aq14 aq15 aq16 aq17 aq18 /FORMAT=NOLABELS /SCALE(ALPHA)=ALL/MODEL=ALPH A.	
Resources	Elapsed Time	0:00:00.00

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients

N of Cases = 30.0

N of Items = 18

Alpha = .9156

***** Method 1 (space saver) will be used for this analysis *****

Reliability Analysis of Value

Reliability

Notes

Output Created		28-SEP-2013 22:20:16
Comments		
Input	Data	C:\Documents and Settings arueban.y\Desktop\Dissertation Data Analysis\pilot test\pilot.sav
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	30
Syntax		RELIABILITY /VARIABLES=v1 v2 v3 v4 v5 v6 v7 v8 v9 v10 v11 v12 v13 v14 v15 v16 v17 v18 v19 /FORMAT=NOLABELS /SCALE(ALPHA)=ALL/MODEL=ALPH A.
Resources	Elapsed Time	0:00:00.00

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients

N of Cases = 30.0

N of Items = 19

Alpha = .9438

***** Method 1 (space saver) will be used for this analysis *****

Appendix B.2 Factor Analysis Results of the Variables

Result of the Factor Analysis on Student Satisfaction

Factor Analysis

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.875
Bartlett's Test of Sphericity	Approx. Chi-Square	1063.131
	df	15
	Sig.	.000

Communalities

	Initial	Extraction
SA1	1.000	.597
SA2	1.000	.697
SA3	1.000	.667
SA4	1.000	.614
SA5	1.000	.715
SA6	1.000	.527

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.817	63.615	63.615	3.817	63.615	63.615
2	.744	12.402	76.017			
3	.431	7.179	83.196			
4	.404	6.735	89.931			
5	.330	5.496	95.427			
6	.274	4.573	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component
	1
SA5	.846
SA2	.835
SA3	.816
SA4	.783
SA1	.773
SA6	.726

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Result of the Factor Analysis on Service Quality

Factor Analysis

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.880
Bartlett's Test of Sphericity	Approx. Chi-Square	2903.388
	df	153
	Sig.	.000

Communalities

	Initial	Extraction
SQ1	1.000	.654
SQ2	1.000	.677
SQ4	1.000	.649
SQ5	1.000	.588
SQ6	1.000	.621
SQ7	1.000	.532
SQ10	1.000	.613
SQ11	1.000	.660
SQ12	1.000	.683
SQ13	1.000	.691
SQ14	1.000	.657
SQ15	1.000	.724
SQ16	1.000	.701
SQ17	1.000	.510
SQ18	1.000	.699
SQ19	1.000	.711
SQ20	1.000	.565
SQ21	1.000	.511

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	6.743	37.462	37.462
2	1.984	11.022	48.484
3	1.420	7.889	56.373
4	1.299	7.215	63.588
5	.880	4.890	68.478
6	.732	4.067	72.546
7	.664	3.692	76.237
8	.634	3.520	79.757
9	.537	2.983	82.740
10	.494	2.743	85.483
11	.433	2.407	87.890
12	.425	2.361	90.251
13	.371	2.059	92.311
14	.327	1.819	94.129
15	.303	1.683	95.812
16	.284	1.578	97.390
17	.256	1.420	98.810
18	.214	1.190	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.743	37.462	37.462	3.507	19.482	19.482
2	1.984	11.022	48.484	3.417	18.986	38.468
3	1.420	7.889	56.373	2.760	15.333	53.801
4	1.299	7.215	63.588	1.762	9.787	63.588
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component			
	1	2	3	4
SQ14	.729	-.042	-.332	.115
SQ13	.722	.019	-.410	.043
SQ6	.718	-.258	.084	-.179
SQ15	.701	.075	-.472	.069
SQ16	.697	.065	-.453	.072
SQ5	.667	-.305	.145	-.172
SQ17	.654	.074	-.262	-.088
SQ7	.617	-.247	.163	-.254
SQ4	.610	-.487	.148	.138
SQ21	.597	.224	.323	.013
SQ20	.585	.317	.261	-.232
SQ12	.571	.493	-.029	.335
SQ1	.566	-.525	.207	.127
SQ18	.564	.435	.214	-.383
SQ2	.560	-.537	.236	.137
SQ19	.544	.452	.234	-.395
SQ11	.508	.335	.200	.499
SQ10	.204	.213	.395	.608

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Rotated Component Matrix^a

	Component			
	1	2	3	4
SQ15	.815	.175	.150	.085
SQ16	.797	.187	.149	.090
SQ13	.772	.249	.169	.072
SQ14	.717	.328	.130	.138
SQ17	.609	.220	.300	.024
SQ2	.122	.801	-.004	.141
SQ1	.148	.785	-6.006E-05	.128
SQ4	.226	.761	.011	.140
SQ5	.253	.652	.313	-.030
SQ6	.337	.624	.343	-.027
SQ7	.206	.586	.374	-.080
SQ19	.173	.043	.821	.074
SQ18	.199	.061	.806	.075
SQ20	.179	.179	.685	.176
SQ21	.153	.279	.525	.367
SQ10	-.087	.098	.016	.772
SQ11	.255	.108	.213	.733
SQ12	.471	-.056	.331	.590

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Component Transformation Matrix

Component	1	2	3	4
1	.625	.562	.479	.254
2	.115	-.751	.532	.373
3	-.765	.347	.393	.374
4	.104	.010	-.577	.810

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

Result of the Factor Analysis on Academic Quality

Factor Analysis

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.925
Bartlett's Test of Sphericity	Approx. Chi-Square	3074.319
	df	120
	Sig.	.000

Communalities

	Initial	Extraction
AQ1	1.000	.679
AQ2	1.000	.705
AQ4	1.000	.517
AQ5	1.000	.654
AQ7	1.000	.586
AQ8	1.000	.594
AQ9	1.000	.601
AQ10	1.000	.616
AQ11	1.000	.682
AQ12	1.000	.652
AQ13	1.000	.686
AQ14	1.000	.652
AQ15	1.000	.551
AQ16	1.000	.631
AQ17	1.000	.632
AQ18	1.000	.711

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	7.756	48.473	48.473
2	1.221	7.630	56.103
3	1.171	7.322	63.425
4	.911	5.692	69.117
5	.758	4.736	73.853
6	.611	3.819	77.672
7	.530	3.310	80.982
8	.482	3.013	83.995
9	.420	2.624	86.618
10	.375	2.346	88.964
11	.349	2.180	91.144
12	.343	2.146	93.289
13	.295	1.846	95.135
14	.287	1.795	96.930
15	.262	1.640	98.569
16	.229	1.431	100.000

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.756	48.473	48.473	4.224	26.398	26.398
2	1.221	7.630	56.103	3.037	18.979	45.377
3	1.171	7.322	63.425	2.888	18.048	63.425
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component		
	1	2	3
AQ10	.775	-.116	.047
AQ8	.759	-3.928E-05	-.134
AQ9	.752	-.187	.005
AQ14	.738	-.318	-.081
AQ12	.732	-.340	-.022
AQ18	.731	-.232	.350
AQ13	.729	-.391	-.028
AQ16	.714	.122	.326
AQ15	.708	-.100	-.200
AQ5	.701	.399	.062
AQ11	.682	.055	-.462
AQ2	.676	.481	.127
AQ7	.631	.216	-.377
AQ1	.618	.494	.231
AQ4	.579	.187	-.383
AQ17	.573	-.069	.547

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Rotated Component Matrix^a

	Component		
	1	2	3
AQ13	.758	.322	.087
AQ18	.743	.050	.394
AQ12	.726	.330	.127
AQ14	.700	.386	.114
AQ9	.641	.353	.256
AQ10	.617	.347	.338
AQ17	.572	-.157	.529
AQ11	.310	.752	.142
AQ7	.185	.692	.271
AQ4	.168	.663	.221
AQ15	.500	.517	.187
AQ8	.482	.513	.315
AQ1	.135	.253	.772
AQ2	.157	.366	.739
AQ5	.215	.413	.661
AQ16	.481	.142	.616

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 15 iterations.

Component Transformation Matrix

Component	1	2	3
1	.678	.532	.507
2	-.692	.228	.685
3	.249	-.815	.523

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Result of the Factor Analysis on Value

Factor Analysis

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.943
Bartlett's Test of Sphericity	Approx. Chi-Square	4384.925
	df	105
	Sig.	.000

Communalities

	Initial	Extraction
V1	1.000	.536
V2	1.000	.545
V3	1.000	.620
V4	1.000	.649
V5	1.000	.642
V6	1.000	.610
V7	1.000	.695
V8	1.000	.629
V9	1.000	.582
V10	1.000	.536
V11	1.000	.579
V12	1.000	.588
V14	1.000	.572
V15	1.000	.640
V16	1.000	.621

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.045	60.299	60.299	9.045	60.299	60.299
2	1.439	9.595	69.894			
3	.761	5.071	74.965			
4	.644	4.292	79.257			
5	.518	3.450	82.707			
6	.388	2.586	85.294			
7	.366	2.440	87.734			
8	.332	2.214	89.948			
9	.314	2.091	92.039			
10	.271	1.807	93.846			
11	.231	1.541	95.387			
12	.224	1.490	96.877			
13	.204	1.360	98.238			
14	.140	.935	99.173			
15	.124	.827	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component
	1
V1	.732
V2	.738
V3	.788
V4	.805
V5	.801
V6	.781
V7	.834
V8	.793
V9	.763
V10	.732
V11	.761
V12	.767
V14	.756
V15	.800
V16	.788

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix B.3 Descriptive Statistics of the Variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
COMPUTE sum_sa = (sa1 + sa2 + sa3 + sa4 + sa5 + sa6) / 6 (COMPUTE)	346	1.67	5.00	3.8868	.67682
COMPUTE SQ_dim1 = (sq15 + sq16 + sq13 + sq14 + sq17) / 5 (COMPUTE)	346	1.00	5.00	3.2884	.60981
COMPUTE SQ_dim2 = (sq2 + sq1 + sq4 + sq5 + sq6 + sq7) / 6 (COMPUTE)	346	1.17	5.00	3.4961	.59397
COMPUTE SQ_dim3 = (sq19 + sq18 + sq20 + sq21) / 4 (COMPUTE)	346	1.25	5.00	3.0311	.65961
COMPUTE SQ_dim4 = (sq10 + sq11 + sq12) / 3 (COMPUTE)	346	1.00	5.00	3.1599	.65358
COMPUTE AQ_dim1 = (aq13 + aq18 + aq12 + aq14 + aq9 + aq10 + aq17) / 7 (COMPUTE)	346	2.14	5.00	3.9509	.50983
COMPUTE AQ_dim2 = (aq11 + aq7 + aq4 + aq5 + aq8) / 5 (COMPUTE)	346	1.60	5.00	3.6821	.64026
COMPUTE AQ_dim3 = (aq1 + aq2 + aq5 + aq16) / 4 (COMPUTE)	346	2.50	5.00	4.0665	.47882
COMPUTE Value = (v1 + v2 + v3 + v4 + v5 + v6 + v7 + v8 + v9 + v10 + v11 + v12 + v13 + v14 + v15 + v16 + v... (COMPUTE)	346	1.21	5.00	3.6042	.56081
Valid N (listwise)	346				

Appendix B.4 Test of Relationship of the Variables

Correlations

		COMPUTE sum_sa = (sa1 + sa2 + sa3 + sa4 + sa5 + sa6) / 6 (COMPUTE)	COMPUTE SQ_dim1 = (sq15 + sq16 + sq13 + sq14 + sq17) / 5 (COMPUTE)	COMPUTE SQ_dim2 = (sq2 + sq1 + sq4 + sq5 + sq6 + sq7) / 6 (COMPUTE)	COMPUTE SQ_dim3 = (sq19 + sq18 + sq20 + sq21) / 4 (COMPUTE)	COMPUTE SQ_dim4 = (sq10 + sq11 + sq12) / 3 (COMPUTE)	COMPUTE AQ_dim1 = (aq13 + aq18 + aq12 + aq14 + aq9 + aq10 + aq17) / 7 (COMPUTE)	COMPUTE AQ_dim2 = (aq11 + aq7 + aq4 + aq5 + aq8) / 5 (COMPUTE)	COMPUTE AQ_dim3 = (aq1 + aq2 + aq5 + aq16) / 4 (COMPUTE)	COMPUTE Value = (v1 + v2 + v3 + v4 + v5 + v6 + v7 + v8 + v9 + v10 + v11 + v12 + v13 + v14 + v15 + v16 + v... (COMPUTE)
COMPUTE sum_sa = (sa1 + sa2 + sa3 + sa4 + sa5 + sa6) / 6 (COMPUTE)	Pearson Correlation Sig. (2-tailed) N	1 .000 346	.311** .000 346	.422** .000 346	.352** .000 346	.302** .000 346	.309** .000 346	.358** .000 346	.366** .000 346	.534** .000 346
COMPUTE SQ_dim1 = (sq15 + sq16 + sq13 + sq14 + sq17) / 5 (COMPUTE)	Pearson Correlation Sig. (2-tailed) N	.311** .000 346	1 .000 346	.567** .000 346	.492** .000 346	.402** .000 346	.369** .000 346	.417** .000 346	.351** .000 346	.548** .000 346
COMPUTE SQ_dim2 = (sq2 + sq1 + sq4 + sq5 + sq6 + sq7) / 6 (COMPUTE)	Pearson Correlation Sig. (2-tailed) N	.422** .000 346	.567** .000 346	1 .000 346	.428** .000 346	.269** .000 346	.467** .000 346	.647** .000 346	.480** .000 346	.639** .000 346
COMPUTE SQ_dim3 = (sq19 + sq18 + sq20 + sq21) / 4 (COMPUTE)	Pearson Correlation Sig. (2-tailed) N	.352** .000 346	.492** .000 346	.428** .000 346	1 .000 346	.450** .000 346	.347** .000 346	.348** .000 346	.334** .000 346	.478** .000 346
COMPUTE SQ_dim4 = (sq10 + sq11 + sq12) / 3 (COMPUTE)	Pearson Correlation Sig. (2-tailed) N	.302** .000 346	.402** .000 346	.269** .000 346	.450** .000 346	1 .000 346	.138** .010 346	.185** .001 346	.201** .000 346	.280** .000 346
COMPUTE AQ_dim1 = (aq13 + aq18 + aq12 + aq14 + aq9 + aq10 + aq17) / 7 (COMPUTE)	Pearson Correlation Sig. (2-tailed) N	.309** .000 346	.369** .000 346	.467** .000 346	.347** .000 346	.138** .010 346	1 .000 346	.681** .000 346	.664** .000 346	.613** .000 346
COMPUTE AQ_dim2 = (aq11 + aq7 + aq4 + aq5 + aq8) / 5 (COMPUTE)	Pearson Correlation Sig. (2-tailed) N	.358** .000 346	.417** .000 346	.647** .000 346	.348** .000 346	.185** .001 346	.681** .000 346	1 .000 346	.690** .000 346	.649** .000 346
COMPUTE AQ_dim3 = (aq1 + aq2 + aq5 + aq16) / 4 (COMPUTE)	Pearson Correlation Sig. (2-tailed) N	.366** .000 346	.351** .000 346	.480** .000 346	.334** .000 346	.201** .000 346	.664** .000 346	.690** .000 346	1 .000 346	.539** .000 346
COMPUTE Value = (v1 + v2 + v3 + v4 + v5 + v6 + v7 + v8 + v9 + v10 + v11 + v12 + v13 + v14 + v15 + v16 + v... (COMPUTE)	Pearson Correlation Sig. (2-tailed) N	.534** .000 346	.548** .000 346	.639** .000 346	.478** .000 346	.280** .000 346	.613** .000 346	.649** .000 346	.539** .000 346	1 .000 346

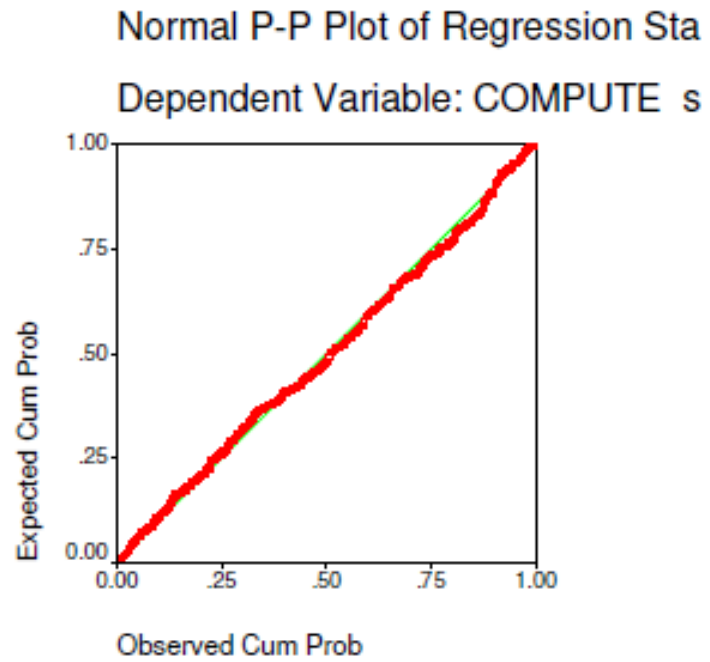
** . Correlation is significant at the 0.01 level (2-tailed).

Appendix B.5 Test of Normality

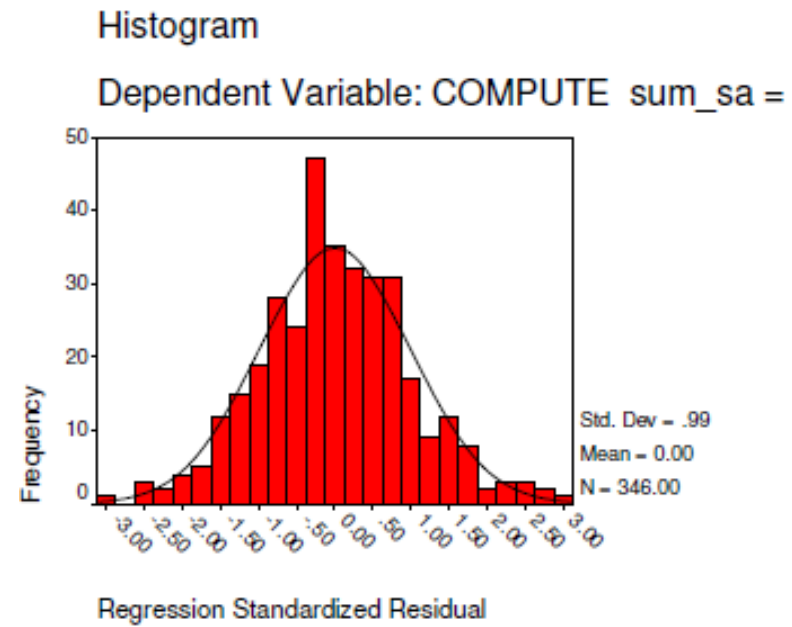
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std.	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
COMPUTE sum_sa = (sa1 + sa2 + sa3 + sa4 + sa5 + sa6) / 6 (COMPUTE)	346	1.67	5.00	3.8868	.67682	-.339	.131	-.139	.261
COMPUTE SQ_dim1 = (sq15 + sq16 + sq13 + sq14 + sq17) / 5 (COMPUTE)	346	1.00	5.00	3.2884	.60981	-.357	.131	.645	.261
COMPUTE SQ_dim2 = (sq2 + sq1 + sq4 + sq5 + sq6 + sq7) / 6 (COMPUTE)	346	1.17	5.00	3.4961	.59397	-.351	.131	.388	.261
COMPUTE SQ_dim3 = (sq19 + sq18 + sq20 + sq21) / 4 (COMPUTE)	346	1.25	5.00	3.0311	.65961	-.074	.131	-.042	.261
COMPUTE SQ_dim4 = (sq10 + sq11 + sq12) / 3 (COMPUTE)	346	1.00	5.00	3.1599	.65358	-.090	.131	.509	.261
COMPUTE AQ_dim1 = (aq13 + aq18 + aq12 + aq14 + aq9 + aq10 + aq17) / 7 (COMPUTE)	346	2.14	5.00	3.9509	.50983	-.366	.131	.696	.261
COMPUTE AQ_dim2 = (aq11 + aq7 + aq4 + aq5 + aq8) / 5 (COMPUTE)	346	1.60	5.00	3.6821	.64026	-.436	.131	.484	.261
COMPUTE AQ_dim3 = (aq1 + aq2 + aq5 + aq16) / 4 (COMPUTE)	346	2.50	5.00	4.0665	.47882	.027	.131	.366	.261
COMPUTE Value = (v1 + v2 + v3 + v4 + v5 + v6 + v7 + v8 + v9 + v10 + v11 + v12 + v13 + v14 + v15 + v16 + v...) (COMPUTE)	346	1.21	5.00	3.6042	.56081	-.292	.131	.871	.261
Valid N (listwise)	346								

Appendix B.6 Normality Testing using Normal Probability Plot



Appendix B.7 Histogram of the Regression Residuals



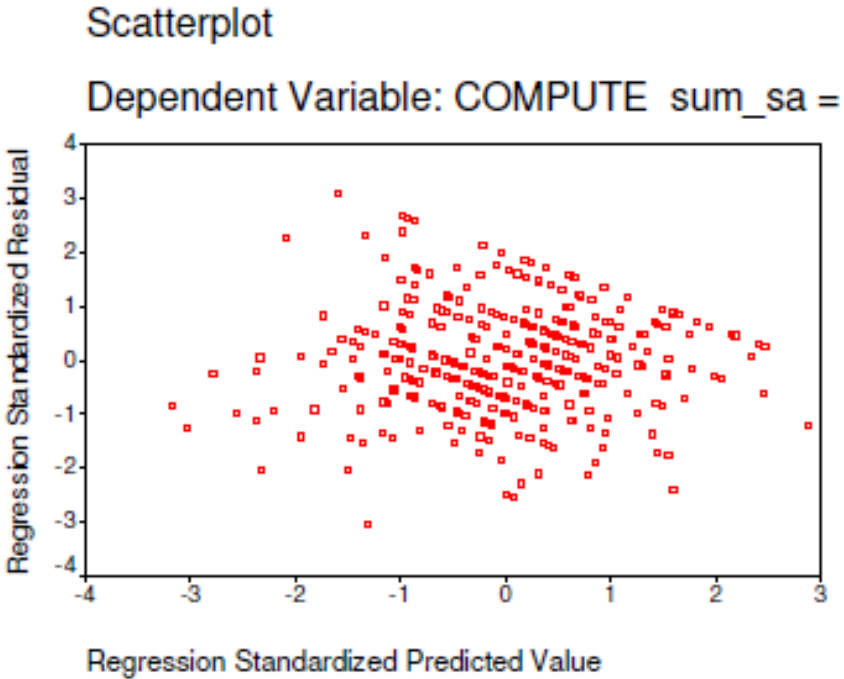
Appendix B.8 Multicollinearity Test

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.933	.297		3.140	.002		
	COMPUTE SQ_dim1 = (sq15 + sq16 + sq13 + sq14 + sq17) / 5 (COMPUTE)	-.101	.067	-.091	-1.509	.132	.548	1.826
	COMPUTE SQ_dim2 = (sq2 + sq1 + sq4 + sq5 + sq6 + sq7) / 6 (COMPUTE)	.161	.076	.142	2.113	.035	.439	2.277
	COMPUTE SQ_dim3 = (sq19 + sq18 + sq20 + sq21) / 4 (COMPUTE)	.068	.058	.066	1.174	.241	.620	1.613
	COMPUTE SQ_dim4 = (sq10 + sq11 + sq12) / 3 (COMPUTE)	.147	.053	.142	2.764	.006	.745	1.343
	COMPUTE AQ_dim1 = (aq13 + aq18 + aq12 + aq14 + aq9 + aq10 + aq17) / 7 (COMPUTE)	-.110	.091	-.083	-1.218	.224	.423	2.362
	COMPUTE AQ_dim2 = (aq11 + aq7 + aq4 + aq5 + aq8) / 5 (COMPUTE)	-.085	.081	-.081	-1.048	.296	.333	3.002
	COMPUTE AQ_dim3 = (aq1 + aq2 + aq5 + aq16) / 4 (COMPUTE)	.214	.094	.152	2.280	.023	.447	2.238
	COMPUTE Value = (v1 + v2 + v3 + v4 + v5 + v6 + v7 + v8 + v9 + v10 + v11 + v12 + v13 + v14 + v15 + v16 + v... (COMPUTE)	.535	.084	.443	6.333	.000	.403	2.481

a. Dependent Variable: COMPUTE sum_sa = (sa1 + sa2 + sa3 + sa4 + sa5 + sa6) / 6 (COMPUTE)

Appendix B.9 Test of Linearity, Homoscedasticity and the Independence of Errors



Appendix B.10 Hierarchical Multiple Regression Evaluating the Interaction Effects of Value with Service Quality and Academic Quality on Student Satisfaction

Regression

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	AQ3, SQ4, SQ1, SQ3, SQ2, AQ1, AQ2	.	Enter
2	VALUE ^a	.	Enter
3	COMPUTE sq3xv = sq3 * value (COMPUTE E), COMPUTE sq4xv = sq4 * value (COMPUTE E), COMPUTE aq2xv = aq2 * value (COMPUTE E), COMPUTE sq1xv = sq1 * value (COMPUTE E),	.	Enter

sq1 * value (COMPUTE E), COMPUTE sq2xv = sq2 * value (COMPUTE E), COMPUTE aq1xv = aq1 * value (COMPUTE E), COMPUTE aq3xv = aq3 * value (COMPUTE E)	.	Enter
---	---	-------

- a. All requested variables entered.
- b. Dependent Variable: SATISFAC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.506 ^a	.256	.241	.58981
2	.579 ^b	.335	.319	.55840
3	.597 ^c	.357	.328	.55499

Model Summary

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.256	16.613	7	338	.000
2	.079	40.107	1	337	.000
3	.022	1.592	7	330	.137

a. Predictors: (Constant), AQ3, SQ4, SQ1, SQ3, SQ2, AQ1, AQ2

b. Predictors: (Constant), AQ3, SQ4, SQ1, SQ3, SQ2, AQ1, AQ2, VALUE

c. Predictors: (Constant), AQ3, SQ4, SQ1, SQ3, SQ2, AQ1, AQ2, VALUE, COMPUTE sq3xv = sq3 * value (COMPUTE), COMPUTE sq4xv = sq4 * value (COMPUTE), COMPUTE aq2xv = aq2 * value (COMPUTE), COMPUTE sq1xv = sq1 * value (COMPUTE), COMPUTE sq2xv = sq2 * value (COMPUTE), COMPUTE aq1xv = aq1 * value (COMPUTE), COMPUTE aq3xv = aq3 * value (COMPUTE)

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.455	7	5.779	16.613	.000 ^a
	Residual	117.584	338	.348		
	Total	158.039	345			
2	Regression	52.960	8	6.620	21.231	.000 ^b
	Residual	105.078	337	.312		
	Total	158.039	345			
3	Regression	56.393	15	3.760	12.206	.000 ^c
	Residual	101.645	330	.308		
	Total	158.039	345			

a. Predictors: (Constant), AQ3, SQ4, SQ1, SQ3, SQ2, AQ1, AQ2

b. Predictors: (Constant), AQ3, SQ4, SQ1, SQ3, SQ2, AQ1, AQ2, VALUE

c. Predictors: (Constant), AQ3, SQ4, SQ1, SQ3, SQ2, AQ1, AQ2, VALUE, COMPUTE sq3xv = sq3 * value (COMPUTE), COMPUTE sq4xv = sq4 * value (COMPUTE), COMPUTE aq2xv = aq2 * value (COMPUTE), COMPUTE sq1xv = sq1 * value (COMPUTE), COMPUTE sq2xv = sq2 * value (COMPUTE), COMPUTE aq1xv = aq1 * value (COMPUTE), COMPUTE aq3xv = aq3 * value (COMPUTE)

d. Dependent Variable: SATISFAC

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.011	.314		3.223	.001
	SQ1	-.019	.069	-.017	-.278	.781
	SQ2	.278	.078	.244	3.545	.000
	SQ3	.126	.060	.123	2.091	.037
	SQ4	.156	.056	.150	2.765	.006
	AQ1	.034	.093	.026	.367	.714
	AQ2	.009	.084	.009	.108	.914
	AQ3	.228	.099	.161	2.295	.022
2	(Constant)	.933	.297		3.140	.002
	SQ1	-.101	.067	-.091	-1.509	.132
	SQ2	.161	.076	.142	2.113	.035
	SQ3	.068	.058	.066	1.174	.241
	SQ4	.147	.053	.142	2.764	.006
	AQ1	-.110	.091	-.083	-1.218	.224
	AQ2	-.085	.081	-.081	-1.048	.296
	AQ3	.214	.094	.152	2.280	.023
	VALUE	.535	.084	.443	6.333	.000
	3	(Constant)	-3.835	1.749		-2.193
SQ1		.040	.460	.036	.087	.931
SQ2		.642	.463	.563	1.387	.166
SQ3		-.338	.350	-.329	-.965	.335
SQ4		.108	.322	.104	.336	.737
AQ1		.445	.551	.335	.809	.419
AQ2		-1.162	.501	-1.099	-2.317	.021
AQ3		1.597	.595	1.130	2.684	.008
VALUE		1.891	.490	1.567	3.857	.000
COMPUTE sq1xv = sq1 * value (COMPUTE)		-.042	.127	-.219	-.332	.740
COMPUTE sq2xv = sq2 * value (COMPUTE)		-.143	.130	-.772	-1.107	.269
COMPUTE sq3xv = sq3 * value (COMPUTE)		.119	.096	.621	1.240	.216
COMPUTE sq4xv = sq4 * value (COMPUTE)		.007	.086	.036	.084	.933
COMPUTE aq1xv = aq1 * value (COMPUTE)		-.161	.159	-.862	-1.013	.312
COMPUTE aq2xv = aq2 * value (COMPUTE)		.306	.141	1.773	2.163	.031
COMPUTE aq3xv = aq3 * value (COMPUTE)		-.381	.165	-2.007	-2.305	.022

a. Dependent Variable: SATISFAC