BUSINESS STUDENTS'SATISFACTION MEASUREMENT BY USING COMPREHENSIVE KEY VARIABLES

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Abstract

This paper described the conceptual model for the university operations by using variables contributing to the satisfaction of students. The model was developed by studying the previous literature reviews of the past 30 years by several relevant experts and researchers in this area. The model consisted of the eight variables as follows: Academic Staff, Administrative Staff, Teaching / Interactions / Academic Support, Curriculum Design / Innovations / Assessment, Skills Developed / Future Careers, Facilities / Services / ICT, social life integration, and pre-enrolment / values education. The proposed conceptual model was verified by hypotheses testing of the above eight variables.

The results showed the strong ($r \geq 0.70$) and very strong ($r \geq 0.80$) relationships between these eight variables and the overall business students' satisfaction. The eight variables were weighed and prioritized in the order of importance for managing the university's operations, by using simple means ($\bar{X}$) and standard deviations (SD),

Therefore, from the research, it can be suggested the university leader may use them as criteria for making the strategic objective settings. The understanding, how these variables contribute to the overall students' satisfactions, will give university leaders insight into the improvement for better quality operations and protecting students.

Keyword: Student's satisfaction Model, University Operations, Business Students' satisfaction and International University

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1. ICT	stands for	Information and Communications Technology
2. SES	stands for	Socioeconomic Status
3. ACT	stands for	American College Testing
4. HSGPA	stands for	High School Grade Point Average
5. GPA	stands for	Grade Point Average
6. HEFCE	stands for	Higher Education Funding Council for England
7. MBA	stands for	Master of Business Administration
8. CSR	stands for	Corporate Social Responsibility
9. MBNQA	stands for	Malcolm Baldrige National Quality Award
10. IOC	stands for	Index of Congress
11. BBA	stands for	Bachelor's Degree of Business Administration
12. Ph.D.	stands for	Doctor of Philosophy
13. IS	stands for	Independent Study

CHAPTER 1
INTRODUTION

1.1 Introduction of the Study

Managing university as a business is critical to the educational quality in our modern capitalist society. World private universities have been competing intensively not only for survival of their own business but also achieving higher quality, especially focusing to the customers, that is, students' satisfaction. Students' satisfaction is of most important concern for university administrators. To retain students and understand the reason why students may choose to stay or leave a program is very important for a university administrator in managing educational operations to satisfy students' needs and reach a higher satisfaction.

Over the past 30 years, a number of researchers have examined the reasons for students' satisfaction and dissatisfaction with their higher educational experience. The student satisfaction literature has been varied in a number of researchers, reflecting the quality of the programs studied, and the students' perceptions of their academic experience. These studies embrace many different types of student groups and multiple approaches to measuring satisfaction.

Ongoing student feedback enables universities to check their operational performance, thereby, resulting in improvements to academic program and increased retention. To obtain student feedback in general, a survey is generally made up to include questions on various aspects to measure the degree of satisfaction with the overall academic experience. In addition, questionnaires typically include questions such as whether or not the students plan to continue with the program or discontinue, the degree to which the student would recommend the program to others and whether or not the student would choose the program again.

This research proposal has comprehensively reviewed the past 30 years of research literature on students' satisfaction measurement by studying the key variables. There were so many variables and predictors relevant to the students' satisfaction measurements. The author, then, collects, compiles, regroups, and classifies these variables as related to students' satisfaction, aiming to achieve

university's better operational performance. The most comprehensive and up-to-date literature review about business students' satisfaction is conducted by Allen Glen (Allen Gibson, 2010). It covers all aspects of variables and predictors by tens of distinguished authors since 1995. Gibson developed them into nine predictors or key variables, which will be discussed briefly in the literature review topic. There were no empirical tests and results shown how these variables impacting on the business students' satisfaction in this paper (Allen Gibson, 2010). From the author's literature search about variables impacting on business students' satisfaction till 2013 as shown in the attached references, there still lacks the new theoretical model reflecting the globalization effects. In addition, there were no empirical results to prove how these comprehensive variables effectively impact on students' satisfaction leading to expected higher education quality and protecting students.

This research proposes to conduct literature research complement to the Gibson's model, adding the advanced factors in this disruptive innovation era of educational quality, like, technological factor, industrial needs for employment, sustainable branding values, and innovative curriculum design. The new conceptual model has been developed by utilizing the past 30 years of comprehensive literature review and searching for many new factors in both the traditional strength of higher education operations and the new age of globalization effects. The new proposed conceptual model of this research consists of eight key solid components to incorporate all factors contributing to the new environment of globalization effects of socioeconomic, demographic mobility, and technological changes.

This research hence contributes to the most up-to-date comprehensive literature review of key variables impacting on business students' satisfaction in the disruptive innovation age of higher education management. In addition, the original contribution of this research lies in the new conceptual model and its empirical validation to the undergraduate business students of Stamford International University, Thailand. This research is expected to be useful for the university leaders in creating strategies by utilizing the proposed key variables of this research to improve university's operations, thereby leading to the better business performance of a university.

1.2 Statement of the Problem

The proposed research topic covered the new qualitative model development and empirical evidence of quantitative measurement. The new qualitative model developed, is consisted of key comprehensive variables contributing to the business students' satisfaction. After completing the new model development by searching for many key comprehensive variables relating to the students' satisfaction, the empirical experiment was conducted to validate the model. The empirical proof was done by using the analysis of variances (ANOVA) statistical method to find the relationship between the variables found and the business students' satisfaction in the proposed conceptual model. The calculated Pearson correlation coefficient (r) between each variable and the business students' satisfaction is reliable when the value of correlation coefficient is higher than 0.60 (strong) and the significance of alpha is lower than 0.05. The weight of each variable in order of importance is also ranked to see how it impacts on the university's operations. The details of research measurement are discussed in Chapter 3. The literature review was summarized in Chapter 2.

1.3 Research Objectives

The purpose of this research is to identify the factors or predictors or variables contributing to the business students' satisfaction model in an innovative edge of education. The specific objective of this research is to measure how these variables are related to overall business students' satisfaction by using the statistical analysis of Pearson correlation coefficient (r) and the importance or the weight of each variable contributing to the business students' satisfaction by using the mean (M) and standard deviation (SD). The data analysis program is used for the above statistical analysis. The experiment of hypotheses testing of each variable related to the business students' satisfaction was done by using the calculated Yamane's formula (Yamane, 1967) sample of the business students at Stamford International University. The key variables proposed in the business students' satisfaction model are the key determinants for the administrators in managing the university's operations.

1.4 Significance of the Study

This research makes two distinguished contributions both the model development and the empirical study. The conceptual model, derived from the intensive literature of the past 30 years by many researchers, and developed into the new conceptual model that incorporated many variables that reflected the globalized effects of the current socioeconomic, demographic and technological changes.

The empirical measurement of the business students gives insight into the understanding of the university operations in managing the business students' satisfaction. It gives the Dean of Business a deeper understanding of his faculty's operations. It is also good for administrators to use the variables in this model as a tool to manage their universities better.

1.5 Scope of the Research and Its Limitations

The proposed conceptual model consists of many key independent variables that have relationship with the dependent variable of overall business students' satisfaction. The research topic is not the generic students' satisfaction model but it is limited to business student. This is because the new researchers are gearing towards more specific group of the programs they wanted to study and they can control variables impact during the empirical experiment study better.

The target of empirical study is limited to the undergraduate business students of Stamford International University. Most of the current case studies usually based on the specific university that they wanted to do the research. For example, the case study by Michael Stodnick (Stodnick, M. and Roger, P., 2008) from the University of North Texas, USA, which used the sample from the Operations Management Classes of Southwestern University, USA, has found that the study which is innovative by its nature, is reliable and valid. In the listed references after Chapter 5, many researchers wanted to conduct the research their own universities because they can control variables in the experiments and it gives better inside understanding.

1.6 Theoretical Framework and the Conceptual Framework

The past 30 years of literature review by many researchers published in the research journals in both higher education, business and quality assurance, which is described in detailed in Chapter 2, has shown that there was no existing current model describing the relationship between the key variables and the business students' satisfaction and also reflecting the new situations of socioeconomic, demographic, and technological changes. There were no findings about empirical evidence of the above proposed model to understand how the new globalized factors impacting on the current students' satisfaction.

This research aims to develop the new conceptual model that incorporates the new globalized effects by searching for the key variables in the literature review and develop the clear definition of each variable in the model. After completing the model development which is consisted of many key variables, this research also proposes the measurement concept of interval scale to find the relationship between the business student satisfaction and the proposed key variables. The Pearson correlation coefficient between each variable and the business students' satisfaction was calculated by using the Data Analysis Program. Then, the weighing importance of the key variables is ranked to understand how each variable impacts the students' satisfaction model. Managing students' satisfaction and protecting students are of the most concern among the university administrators which is done by using the calculated weight of importance of the above variables.

Conceptual Framework

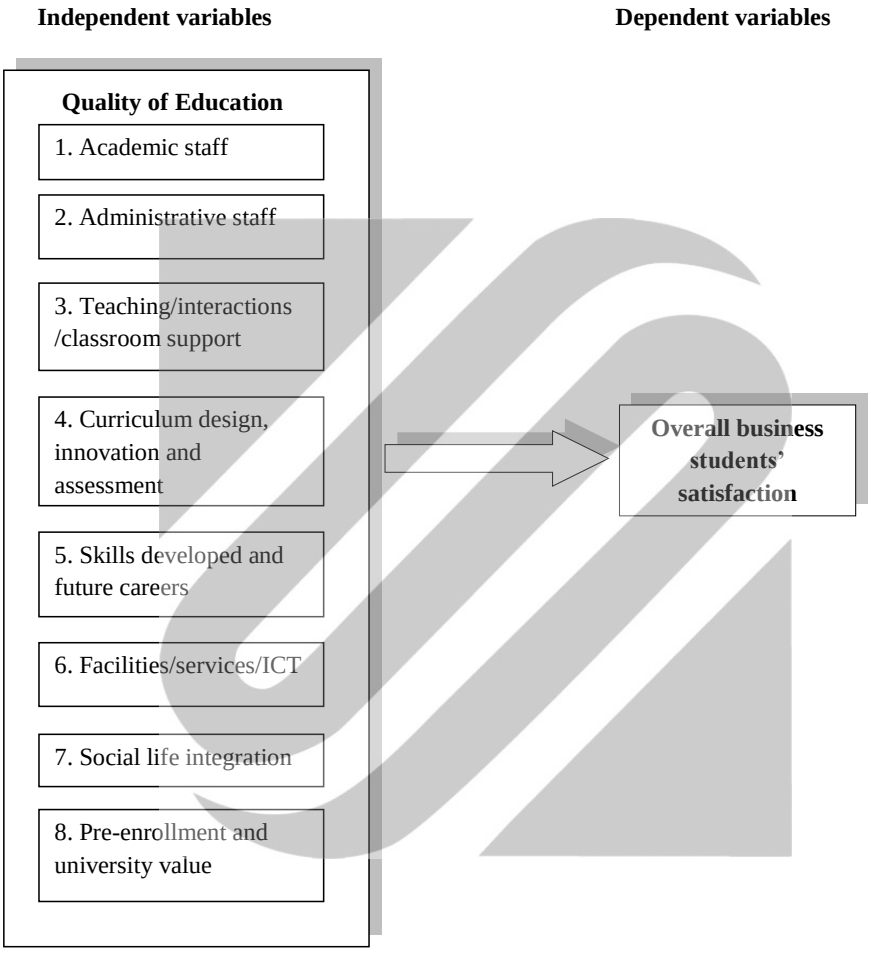

Figure 1.1 Conceptual Frameworks

1.7 Research Hypotheses

The research methodology described in this topic covers: research hypotheses, methodology and research design, sampling, data collection and analysis procedure, validity and reliability, data analysis and conclusion. Based on the above conceptual model, the author proposed eight hypotheses to test the relationship between each key variable and students' satisfaction as follows**:**

1. Relationship between academic staff and overall students' satisfaction.

$H_0$1: there is no relationship between academic staff and overall students' satisfaction of the business administration programs.

H_a1: there is a relationship between academic staff and overall students' satisfaction with the business administration programs.

2. Relationship between administrative staff and overall students' satisfaction.

$H_0$2: there is no relationship between administrative staff and overall students' satisfaction of the business administration programs.

H_a2: there is a relationship between administrative staff and overall students' satisfaction of the business administration programs.

3. Relationship between teaching, interactions, and academic support and overall students' satisfaction.

$H_0$3: there is no relationship between teaching, interactions, and academic support and overall students' satisfaction of the business administration programs.

H_a3: there is a relationship between teaching, interactions, and academic support and overall students' satisfaction of the business administration programs.

4. Relationship between curriculum design, innovations, and assessment and overall students' satisfaction.

$H_0$4: there is no relationship between curriculum design, innovations, and assessment and overall students' satisfaction of the business administration programs.

H_a4: there is a relationship between curriculum design, innovations, and assessment and overall students' satisfaction of the business administration programs.

5. Relationship between skills developed and future career and overall students' satisfaction.

$H_0$5: there is no relationship between skills developed and future career and overall students' satisfaction of the business administration programs.

H_a5: there is a relationship between skills developed and future career and overall students' satisfaction of the business administration programs.

6. Relationship between facilities, information and communication technology, and service and overall students' satisfaction.

$H_0 6$: there is no relationship between facilities, information and communication technology, and service and overall students' satisfaction of the business administration programs.

$H_a 6$: there is a relationship between facilities, information and communication technology, and service and overall students' satisfaction of the business administration programs.

7. Relationship between social life integration and overall students' satisfaction.

$H_0 7$: there is no relationship between social life integration and overall students' satisfaction of the business administration programs.

$H_a 7$: there is a relationship between social life integration and overall students' satisfaction of the business administration programs.

8. Relationship between pre-enrollment and university value and overall students' satisfaction.

$H_0 8$: there is no relationship between pre-enrollment and university value and overall students' satisfaction of the business administration programs.

$H_a 8$: there is a relationship between pre-enrollment and university value and overall students' satisfaction of the business administration programs.

The above eight hypotheses will be tested by statistical method using Data Analysis Program in validating the proposed conceptual model. The relationship between each hypothesis and the students' satisfaction is calculated by using the Pearson coefficient (r). The significance or alpha value accepted is less than 0.05. The Chi-Square test is also used to reconfirm the validity and reliability of the conceptual model.

1.8 Definition of Terms

Student satisfaction and Service quality mean the attention of researchers and in a wide variety of disciplines. This is not surprising, since a number of studies have shown a moderate to strong relationship between these constructs and consumer loyalty or repeat purchasing behavior (Taylor and Cronin, 1994)

University Operations mean the challenging for management of higher education to continually provide reputable and value-added university degree programmes in a highly deregulated and competitive higher education industry (Ming-Ming Lai, Siok-Hwa Lau+, Nurul Afidah Mohamad Yusof and Kok-Wai ,2011).

SERVQUAL means the questionnaire operationalize service quality by comparing perception of service received with expectation, in terms of reliability, responsiveness, assurance, empathy, tangibles (Parasuraman et al,1988).

Academic factor means faculty's competency to deliver scholastic achievement for students like quality of instruction, expertise and interest in subjects, degree of caring and real professional (Allen Gibson, 2010).

Non-academic factor means supporting academic activities carried out by administrative staff (Allen Gibson, 2010).

Teaching Interaction means constructivist teaching and learning contributing to student- centeredness. The relationships between students' perceptions of interactive technology in terms of whether it helps them pay more attention their attitude toward and satisfaction with it. The students who feel they pay more attention due to the use of Interactive Technology have a more positive attitude toward it. Additionally, those students who have a more positive attitude toward Interactive Technology are more satisfied with its use (Jacqueline Eastman, 2011).

Curriculum Design means new product or curriculum designed and frequency of revision and assessment to suit the industrial needs (Allen Gibson, 2010).

Innovation Assessment means the procedure of evaluating and grading system of the students (Afzal et al., 2010)

Skills Developed means the students gained the competences, skills and attitudes to enable them to contribute to the advancement of the economy. It also

contributes to an understanding of the impact of contexts on skill definition and use in different workplaces (Neville B., Elisabeth D., Clive C., 2000).

Future Careers means that the preparation for future career, expecting good job/quality of life and relationship for long-term value (Grady D.Bruce, 2010)

Value education is to focus on students' values as an output of higher management education has increased. The value influence students expect is more closely associated with universalism values (connected to sustainability and CSR) than with power values. The universities can increase student satisfaction if they coordinate opportunities to discuss and shape values, particularly with regard to universalism ideals (Moosmayer, Dirk, 2012).

CHAPTER 2
LITERATURE REVIEWS

This chapter describes students' satisfaction studies by various education researchers in several countries, such as, USA, United Kingdom, and Germany. There were numerous variables identified. The topic outlines are as follows:

2.1 Students' satisfaction and retention in higher education
2.2 Students' satisfaction as a service operation
2.3 Students' satisfaction and service quality
2.4 Business students' satisfaction and valued education
2.5 Business students' satisfaction by academic and non-academic experience
2.6 Related researches and concluding remarks

2.1 Students' Satisfaction and Retention in Higher Education

The most systematic study of students' satisfaction was conducted in the United States by the American College Testing (ACT), which is a college readiness assessment organization, sets a standardized test for high school achievement and college admissions in the United State. The objective is to identify the non-academic factors in college retention as related to high school academic achievement (Lotkowski, V., Robbins, S. B., Noeth, R. J., 2004). The student retention lies in the fundamental concept of students' satisfaction by relating it the commitment, motivation, self-confidence, skills and habits, institution size and selectivity, social support and social involvement, as shown in Table 2.1 below:

Table 2.1 Non-Academic and Academic Factors

Non-Academic Factors	Description
Academic goals	Level of commitment to obtain a college degree.
Achievement motivation	Level of motivation to achieve success.
Academic self-confidence	Level of academic self-confidence (of being successful in the academic environment).
Academic-related skills	Time management skills, study skills, and study habits

Table 2.1 Non-Academic and Academic Factors (Cont.)

Non-Academic Factors	Description
Contextual influences	The extent to which students receive financial aid, institution size, and selectivity.
General self-concept	Level of self-confidence and self-esteem.
Institutional commitment	Level of confidence in and satisfaction with institutional choice.
Social support	Level of social support a student feels that the institution provides.
Social involvement	Extent to which a student fells connected to the college environment, peers, faculty, and others in college, and is involved in campus activities.
ACT assessment score	College preparedness measure in English, mathematics, reading, and science.
High school GPA	Cumulative grade point average student earned from all high school courses.
Other Factors	
Socioeconomic status (SES)	Parents' educational attainment and family income.

Source: Lotkowski, V., Robbins, S. B., Noeth, R. J., 2004

From Table 2.1, the research findings indicated that the non-academic factors of academic related skills, academic self-confidence, and academic goals had strongly relationship to retention. The institutional commitment, social support, the contextual influences of institutional selectivity and financial support, and social involvement had a moderate relationship to retention, as shown in Table 2.2 below:

Table 2.2 Strength of Relationships of Individual Academic and Non-Academic Factors with College Retention

Academic Factors	Practical Strength	Numeric Value
ACT assessment score	Moderate	.246
High school GPA	Moderate	.124
Non-Academic Factors		

Table 2.2 Strength of Relationships of Individual Academic and Non-Academic Factors with College Retention (Cont.)

Academic Factors	**Practical Strength**	**Numeric Value**
Academic-related skills	Strong	.366
Academic self-confidence	Strong	.359
Academic goals	Strong	.340
Institutional commitment	Moderate	.262
Social support	Moderate	.257
Contextual influences (Institutional selectivity)	Moderate	.238
Social involvement	Moderate	.216
Contextual influences (Financial support)	Moderate	.188
Achievement motivation	Weak	.066
General self-concept	Weak	.050
Other Factors		
SES	Moderate	.228

Source: (Lotkowski, V., Robbins, S. B., Noeth, R. J., 2004)

From table 2.2, the academic factors of high school grade point average and ACT Assessment scores, and SES had a strong relationship to college student retention. The overall relationship to college student retention was strongest when Socioeconomic Status (SES), High School Grade Point Average (HSGPA), and the American College Testing (ACT) Assessment scores were combined with institutional commitment, academic goals, social support, academic self-confidence, and social involvement as shown in Table 2.3 below:

Table 2.3 Strength of Academic Relationship of the Combination of Academic and Non-Academic Factors with College Retention

Combination of Academic and Non-Academic Factors	**Strength of Relationship to College and Retention**
SES, HSGPA, ACT Assessment scores combined with institutional commitment, academic goals, social support, academic self-confidence, and social involvement	Strongest. This combination of factors explains 17% of the variability of college across student

Source: Lotkowski, V., Robbins, S. B., Noeth, R. J., 2004

From Table 2.3, the findings showed also that the college grade point average of academic performance had the strongest relationship to the non-academic factors of academic self-confidence and achievement motivation.

Tinto, V. (1975) and Bean, J. P. (1983) linked college retention to both past and present academic performance in the Tinto's theory of student departure and Bean, J. P. (1980) about student attrition model. Tinto believed that pre-enrollment factor that is high school education interact with and directly influences a student's initial commitment to the university and its academic goals.

Wycoff (1998) believed that faculty can serve as socializing agents and that the interactions outside of the class room exert influence directly on students' development and competence. Thus, these interactions influence the college student retention, leading to greater institutional commitment and increase social and academic integration. Studies suggested that retention of college students may improve if faculty express their sincere belief that all students are capable of learning and can be taught to learn (Flowers, J., 1998, Good, J., Halpin, G., and Halpin, G. 2002, Rendon, L. 1992).

In the final report of the American College Testing (ACT), the research team recommended four guidelines for US colleges and universities as follows (Adapted from Lotkowski, V. A., Robbins, S. B. and Noeth R. J., 2004).

1. Institution implements a formal and comprehensive retention program to meet its needs by identifying student characteristics and needs, set priorities, and identifies available resources to achieve the set goals.

2. Program designed and developed must incorporate both academic and non-academic factors in an integrative approach to create a socially and academically supportive environment to fit the needs of the students.

3. Institute a system that can give an early alert, assessment, and monitoring students based on both academic and non-academic information. Academic variables include high school grade point average, ACT Assessment scores, course placement tests, first semester college grade point average, socioeconomic information, attendance records. Non-academic information is derived from formal college surveys and college student inventories to identify and build comprehensive profiles of students at risk of dropping out.

4. Make financial analysis of the retention program and the time to degree completion rates, such as the cost-benefit analysis of student dropout, persistence, assessment procedures, and intervention strategies in both academic and non-academic factors, also including remediation and financial support.

From the American College Testing (ACT) policy research report findings and recommended implementation guidelines for colleges and universities in United State., plus the theoretical framework provided by Wyckoff and suggestion by Flowers, hence, giving the fundamental criteria in deriving variables or predictors for students' satisfaction measurement for the author's proposed theoretical framework and model in chapter 3.

2.2 Students' Satisfaction as a Service Operation

The students' satisfaction research was seriously studied by Adee Athiyaman (1997), published in European Journal of Marketing. Athiyaman studied by linking student satisfaction and service quality perceptions for the case of university education. He developed a model of consumer satisfaction and perceived service quality. The approach was to explain perceived quality in terms of satisfaction with the manageable set of general university characteristics. It is to consider services and service characteristics as follows: (1) emphasis in 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 difficultly of subject content and (8) student workload. These characteristics were used to obtain a measure of pre-enrollment or pre-consumption attitude and disconfirmation.

The empirical results support the contention that perceived quality is a consequence of consumer satisfaction. It is theoretically suggested that perceived quality is a function of satisfaction. It is implication of this research finding is that the university leader can manage all services encounters to improve customer satisfaction and eventually enhancing perceived quality.

In the United Kingdom, higher education students were considered to be the primary customers of a university (Crawford: 1991). Students are the direct recipients of the service provided. The Higher Education Funding Council for England (HEFCE) has introduced a national student survey to confirm the status of the "Student as Customer". Students' satisfaction, recruitment, and retention became the priority agendas for most universities by HEFCE (Jacqueline D., 2006: 251-267). Alex Douglas and Barry Barnes have measured student satisfaction at a United Kingdom university and published a paper in Quality Assurance in Education Journal in 2006. They designed and used questionnaires to measure student satisfaction at Liverpool John Moores University, Faculty of Business and Law, United Kingdom.

The concept of the service-product bundle is used to design a satisfaction survey. It segmented a university's service offering that allows management to target resources at those areas that are perceived to be low satisfaction and high priority. The result of a total of 864 returned questionnaires showed the most important and least important aspects of the university service as in the following Table 2.4.

Table 2.4 Most important and least important aspects of service for full-time students

	Most important	**Least important**
1	Teaching ability of staff	Decoration in lecture facilities
2	Subject expertise of staff	Decoration in tutorial room
3	IT facilities	Vending machine

Table 2.4 Most important and least important aspects of service for full-time students (Cont.)

	Most important	Least important
4	Lectures	Furnishing in tutorials
5	Tutorials	Furnishing in lectures
6	Supplementary lecture materials	Availability of parking
7	Consistency of teaching quality irrespective of teacher	Recreational facilities
8	The learning resources center	The layout of tutorial/seminar rooms
9	Supplementary tutorial materials	The campus catering facilities
10	Blackboard	The layout of lecture facilities

Source: Douglas, Jacqueline, 2006:251-267

From table 2.4, empirical results showed that many of the physical aspects of the university services are not important to students' satisfaction. This finding is agreeable with the previous research finding by Schneider and Bowen (1995), Banwet and Datta (2003), Hill Y., Lomas and MacGregor,J. (2003). They found that the most important aspects of a university's service offerings were associated with the core service, i.e., the lecture, including the attainment of knowledge, class notes and materials and classroom delivery. It is noted here that teaching and learning experience is of importance. The ranking between full-time and part-time students' changes in the order of ranking but the essentials of service aspects are the same.

Billups, F. (2008) conducted research to measure college student satisfaction by studying factors leading to persistence. By employing a three phased, mixed methods, sequential approach, descriptive and longitudinal study of a period over 14 years (1990-2004) and the six vectors leading to student maturation and self-actualization while in college at Johnson & Wales University, the author found the following conclusions: (1) continued and substantial investment of resources to sustain and enhance academic quality, rigor, and the breadth and depth of curriculum,

(2) significant investment for faculty salaries and faculty development funds, to ensure a highly qualified and diversified faculty, (3) increased funding for recruitment and marketing programs in order to attract the most highly qualified and talented students into the programs, and to better market the institution by clarifying its strengths to potential students and parents, (4) creation of key programs and staff positions to support campus diversity, student life programs, major building and renovation program for campus facilities and commitment to increase student housing by 50% over a 10 year period, (5) development of rationale to create a case statement for a capital campaign, and (6) creation of the foundation element for a upcoming accreditation visit and self-study.

The six vectors were: (1) educational experience, (2) development of skills and knowledge, (3) faculty contact, (4) personal and social growth, (5) sense of community, and (6) overall commitment to and satisfaction with college. The significant investment is suggested in the academic quality, curriculum and teachers.

2.3 Students' Satisfaction and Service Quality

The first conceptual model of SERVQUAL was proposed and published in Journal of Marketing (Parasuraman, Zeithaml, & Berry, 1985), later it was revised the service definition into 5 dimensions with the given descriptions as follows (Parasuraman, Zeithaml, & Berry, 1988): 1) tangible – physical facilities, equipment, and appearance of personnel; 2) reliability – ability to perform the promised service dependably and accurately; 3) responsiveness – willingness to help customers and provide prompt service; 4) assurance – knowledge and courtesy of employees and their ability to inspire trust and confidence; and 5) caring, individualized attention the firm provides its customers. Over the last 20 years, this SERVQUAL model has been used to measure service quality in a wide range of industries.

Michael Stodnick and Pamela Rogers from University of North Texas, USA, (Stodnick, M., and Rogers, P., 2008) used the Brightman model in a six dimensional scale to measure the classroom experience. The six dimensional scales by Brightman et al from their applied factor analysis research results are listed as in the followings (Brightman, H., Elliot, M., and Bhada, Y. 1993): 1) organization and clarity, 2) communication ability, 3) grading and assignments, 4) interaction with students, 5)

intellectual and scholarly, and 6) student motivation. Their research has focused on the three hypotheses as follows: hypothesis 1 – predicting student satisfaction with course; hypothesis 2 – predicting student satisfaction with instructor; hypothesis 3 – predicting student perceptions of learning; by using the above Brightman et al six dimensional scale.

The findings suggest that the SERVQUAL model used is reliable and exhibits both convergent and divergent validity. The results demonstrated that a customer-focused service quality by SERVQUAL model can be applied to the classroom experience settings.

2.4 Business Students' Satisfaction and Value Education

Gibson, A. (2010), in his research publication about measuring business student satisfaction, he conducted the intensive and comprehensive literature review of over the past 15 years with 26 cited references and summarized the major predictors impacting on the business students' satisfaction. He came up with the nine key variables as predictors with the long list of cited authors as significant to each key variable. There is no empirical experiment test on his proposed key variables yet. He also separated his key variable findings into the academic and non-academic experience, As shown in Table 2.1, the academic experience includes five key available as follows: (1) academic staff and teaching, (2) classes and curriculum, (3) advising support, (4) skills developed, (5) preparation for future. The non-academic four key variables are (1) services and facilities, (2) social integration, (3) student centeredness and responsiveness, (4) pre-enrollment factors.

Bruce, G. (2010) studied by exploring the value of MBA degree: students' experiences in full-time, part-time, and executive MBA programs. The author used the large sample of graduates (N=16,268) to explore predictors of overall degree value. The predictor variables measure (1) satisfaction with the MBA degree, and (2) satisfaction with the school or program. Each scale contributes significantly to the prediction of overall value. Predictors for the satisfaction with the potential benefits of the Master of Business Administration are (1) preparation to get a good job, (2) an increase in career options, (3) credentials desired, (4) opportunity to improve self personally, (5) opportunity for quicker advancement, (6) development of management

or technical knowledge, (7) an increase in earning power, (8) opportunity to network and form relationships with long-term value, (9) job security. Job security has least significance. Predictors for the satisfaction with the school or program are (1) admissions, (2) career services, (3) curriculum, (4) faculty, (5) program management, (6) student service, (7) fellow students. The career services were of least importance.

Eastman, J. (2011) conducted study on business students' perceptions, attitudes, and satisfaction with interactive technology: an exploratory study. The results suggested that students who feel they pay more attention due to the use of interactive technology have a more positive attitude toward it. In addition, those students who have a more attitude toward interactive technology are more satisfied with its use.

Moosmayer, D. (2012) studied on value education and student satisfaction related to German business students' perceptions of universities' value influences. This study integrates both perspectives to investigate how value-oriented education relates to student satisfaction. A sample of 191 respondents from a German university reveals that business students expect more value influence than they believe their university actually delivers. Students' perceptions of value influence delivered by the university increase their satisfaction with their institution. The value influence students expect is more correlated with universalism values (Sustainability and Corporate Social Responsibility) than with power values.

2.5 Business Students' Satisfaction by Academic and Non-academic Experience

In the past 30 years of literature review related to variables impacting on business students' satisfaction as described in topics 2.1 to 2.4, there exist some questions about the clear definitions of the variables related to academic and non-academic experience for business students. In addition, there exist the needs for the qualitative model development and quantitative measurement to confirm the impact of academic and non-academic factors contributing to the special group of business students' satisfaction. The summary of relevant literature review are compiled and systematically described to reach the clear definitions of variables for both academic and non-academic experience of the college students.

First, from the beginning part of the literature review in chapter 2, it is clear that student-centricity concept has referred to a student as a customer in the quality management system by the US Malcohm Baldridge's National Quality Awards (MBNQA) committee for the education industry (Baldridge Performance Excellence Program, 2013). It is also confirmed by the American College Testings (ACT) policy report (Lotkowski, Veronica, A., Robbins, S.B., and Noeth, R. J.,2004) that the role of academic and non-academic factors contribute to the college student retention improvement.

Therefore, variables or predictors relevant to the college student retention are simply accepted to be described into two main criteria, namely: academic and non-academic issues. The key variables related to academic experience of college student is first described by Gibson, A. (2012) and confirmed by many other researchers, and then followed by the key variables or predictors relevant to the non-academic experience.

The key variables related to academic experience, as studied from the literature review since 1997, has shown that they are five key variables as in the following Table 2.5.

Table 2.5 Show the academic key variable and its definition

	Key Variable	Definition
1.	Academic Staff/teaching	Quality of instruction, expertise and interest in subjects, degree of caring, helpfulness, provided feedback, real professional experience.
2.	Classes/curriculum	Overall design and delivery, usefulness, scheduling, content, availability, class size/logistics, level of difficulty, tutorials.
3.	Advising support	Accessibility, reliability, professionalism, helpfulness, responsiveness, understanding
4.	Skills developed	Relationship skills, critical thinking, intellectual growth, social/moral awareness, interpersonal skills
5.	Preparation for future	Preparation for or furthering career, expecting good job/quality of life, quicker advancement, earning power, network and relationship for long-term value

Source: Athiyaman, 1997, Douglas,2006, Billups, 2008, Bruce, 2010, Gibson,2012.

From Table 2.5, the five key variables and there definitions are comprehensively compiled, adapted and integrated with the most recent literature review. It is noted that the definition of each key variable includes both tangible and intangible factors.

The key variables related to non-academic experience, as studied from the literature review since 1997, has shown that there are five key variables as in the following Table 2.6.

Table 2.6 Show the non-academic key variable and its definition

	Key Variable	Definition
1.	Services/facilities	Availability, access, physical aspects, usefulness, IT support, learning resource centered
2.	Social integration	Opportunities to socialize, campus safety, sense of belonging enjoyable experience, diversity of student body
3.	Student centeredness / responsiveness	Responsiveness to student concerns/suggestions, helpfulness academic support, financial aid
4.	Pre-enrollment factors	Accuracy of information provided, 1st, 2nd, 3rd choice, admissions and orientation, degree to which met expectations
5.	Technological factors	Interactive technology, learning management system
6.	Values education	Value influence expectation, perceived value influence, satisfaction, power values, universalism values

Source: Athiyaman, A., 1997, Douglas, J., 2006, Billups, F., 2008, Bruce, G., 2010, Gibson, A., 2010, Eastman, J., 2011, Moosmayer, D., 2012

From table 2.6, the six key variables and their definitions are comprehensively compiled and integrated with the most recent literature review. It is noted that the definition of each key variable included both tangible and intangible factors. The first four key variables were from the literature review by Allen Gibson: 2010. The fifth factor resulted from the recent technological development in modern education. The study has shown that interactive technology has positive significant relationship with business students' satisfaction (Jacqueline Eastman: 2011). The most recent study on

business students' satisfaction in Germany has shown that the intangible factor, like, values education can increase students' satisfaction if they coordinate opportunities to discuss and shape values, particularly with regard to universalism ideals (Moosmayer, D., 2012).

From the above literature reviews, the author classified all factors influencing business students' satisfaction into two categories as follows: academic and non-academic experience. The variables with their definitions and descriptions that incorporate into the academic and non-academic experience are summarized in the Table 2.7 and Table 2.8 as in the following:

Table 2.7 Academic experience five key variables and definitions

Key variables	**Descriptions**	**Sources**
1. Academic Staff/teaching	Quality of instruction, expertise and interest in subjects, degree of caring, helpfulness, feedback provided, real professional experience	Allen Gibson: Journal of Higher Education Policy and Management, Vol.32 No.3, June 2010 and others
2. Classes/ curriculum	Overall design and delivery, usefulness, scheduling, content, availability, class size/logistics, level of difficulty, tutorials	Allen Gibson: Journal of Higher Education Policy and Management, Vol.32 No.3, June 2010 and others
3. Advising support	Accessibility, reliability, professionalism, helpfulness, responsiveness, understanding	Allen Gibson: Journal of Higher Education Policy and Management, Vol.32 No.3, June 2010 and others
4. Skills developed	Relationship skills, critical thinking, intellectual growth, social/moral awareness, interpersonal skills	Allen Gibson: Journal of Higher Education Policy and Management, Vol.32 No.3, June 2010 and others
5. Preparation for future	Preparation for or furthering career, expecting good job/quality of life, quicker advancement, earning power*, network and relationship for long-term value*	Allen Gibson: Journal of Higher Education Policy and Management Vol.32 No.3, June 2010 and others. Grady D. Bruce: Journal of Education for Business, Vol.85, PP 38-44,2010.

Table 2.8 Non-academic experience six key variables and definition

Key variables	Descriptions	Sources
1.Services/facilities	Availability, access, physical aspects, usefulness, IT support, learning resource centered	Allen Gibson: Journal of Higher Education Policy and Management, Vol.32 No.3, June 2010 and others
2.Social integration	Opportunities to socialize, campus safety, sense of belonging enjoyable experience, diversity of student body	Allen Gibson: Journal of Higher Education Policy and Management, Vol.32 No.3, June 2010 and others
3.Student centeredness/responsiveness	Responsiveness to student concerns/suggestions, helpfulness academic support, financial aid	Allen Gibson: Journal of Higher Education Policy and Management, Vol.32 No.3, June 2010
4.Pre-enrollment factors	Accuracy of information provided, 1st, 2nd, 3rd choice, admissions and orientation, degree to which met expectations	Allen Gibson: Journal of Higher Education Policy and Management, Vol.32 No.3, June 2010 and others
5.Technological factors*	Interactive technology, learning management system	Jacqueline Kilsheimer Eastman: Journal of Education for Business, Vol.86, PP36-43, 2011
6.Values education*	Value influence expectation, perceived value influence, satisfaction, power values, universalism values	Dirk C. Moosmayer and Florian U.Siems : Journal of Marketing of Higher Education, Vol. 22,No.2, July-December 2012, PP 257-272

*denotes the descriptions added by other researchers

A proposed list of variables reflecting academic and non-academic experience shown above adapted from Allen Gibson and et al. (Gibson, A., 2010).

From the above proposed conceptual framework, the author determined to test the experiment to the special group of business students at Stamford International University – Thailand. Michael Stodnick et al (Stodnick, M., and Rogers, P., 2008), in his research of using SERVQUAL to measure the quality of the classroom experience published by Decision Sciences Journal of Innovative Education suggested that

applying the SERVQUAL scale to measure student perceptions of service quality in a classroom setting is innovative in nature and the findings showed it is reliable and valid. Stodnick et al used the sample of six undergraduate Operations Management courses at al Southwestern University, USA of which he called it special group.

2.6 Related Researches and Concluding Remarks

This research proposal reviewed the past 30 years of research on students' satisfaction measurement by studying the key variables. In addition, this research also studied the American College Testings (ACT) research policy (Lotkowski, Veronica, A., Robbins, S.B., and Noeth, R. J.,2004) reflecting the role of academic and non-academic factors in improving college retention. The concept of using academic and non-academic experience reflecting college students' retention is the most comprehensive primary study of students' satisfaction. ACT is the leading test of higher education organization under US Department of Education in developing national education standards and quality assurance.

Tinto, V. (1975) and Bean, J.P. (1983) believed that pre-enrolment factor, such as, academic performance has a direct impact on student's initial commitment to achieve his academic success in the university.

Wycoff (1998) believed that faculty or academic staff via outside of classroom interactions influences strongly to student's development and competence, thereby increasing college student retention.

Flowers (1998), Good and the Halpin(2002), and Rendon (1992) suggested that if faculty or academic staff express sincere belief in student's capability to learn and he can be taught, the college student retention will improve. The students' satisfaction was developed into the concept of services in the United Kingdom in order to make the university serve students better by the following researches and studies.

Crawford (1991) in United Kingdom suggested that higher education student was considered the primary customer who is the direct recipient of service provided.

The Higher Education Funding Council for England (HEFCE) set its priority agenda by the student as customer (Jacqueline D., 2006: 251-267).

Douglas and Barnes (2006) designed the concept of service-product bundle for students' satisfaction survey and produced the 10 most important and least important variables as shown Table 2.4 for university services.

Schneider and Bowen (1995), Banwet and Datta (2003), Hill, Lomas and MacGregor (2003) revealed the teaching and learning experience are essentials of service aspects.

Billups (2008) suggested that university must put significant investment in academic quality, curriculum and teachers.The students' satisfaction using the concept of service quality or SERVQUAL model in order to make it easier to systematically simulating study of service quality was introduced as in the following researches and studies.

Parasuraman, Zeithaml and Berry (1985, 1988) has introduced the SERVQUAL model with the revised service definition in delivering quality to student or customer in to 5 dimensions as described in topic 2.3. It has been used by many researchers over the last 20 years in a wide range of industries.

Stocknick and Rogers (2008) and Brightman, Elliot and Bhada (1993) used the SERQuAL model to demonstrated that a customer-focused service quality can be applied to classroom experience settings.

The latest study on students' satisfaction specific to business students by comprehensively search for academic and non-academic factors from the past 15 years of researches was proposed by Gibson (2010) with 5 key academic variables and 4 key non-academic variables. But this publication showed no empirical validation for result.

B**ruce (2010)** studied students' satisfaction through MBA students' experience to explore the degree value contribution. They found that career services were of least important because most of them have jobs available. The recent studies showed that students' satisfaction integrated with the new variables, such as, interactive technology and valued education in the new era of emerging technological innovation as in the followings.

Eastman (2011) studied students' satisfaction with the interactive technology and found that students are satisfied with its use and have more attitudes towards it.

Moosmayer (2012) studied on valued education and student satisfaction for sustainability in Germany. Students' perception of education value increases their satisfaction with their institution.

From the author's above literature review, it shows that there were so many variables and predictors relevant to the students' satisfaction measurement. The author made comprehensive study and reclassified all the above variables in relation to the business students' satisfaction, aiming to achieve university's better operational performance.

The most comprehensive and up-to-date literature review about the business students' satisfaction is conducted by Allen Glen (June, 2010). It covers all aspects of variables and predictors by tens of distinguished authors since 1985. Gibson developed them into nine predictors or key variables, which was discussed briefly in the literature review topic. It is evident that there were no empirical tests and results shown how these variables impacting on the business students' satisfaction in this paper (Allen Gibson: 2010). From the author's literature search about variables impacting on business students' satisfaction till 2013, as shown in the attached references, there still lacks the empirical results to prove how these comprehensive variables effectively impact on students' satisfaction leading to higher education quality.

This research proposed to conduct literature research based on the Gibson's model and added the current factors in the disruptive innovation era of education, i.e., technological factor. In addition, the author added more the innovative higher education management behavior factor which is the new concept of universalism values (sustainability and corporate social responsibility) influence on student satisfaction.

Finally, in order to analyze how these variables contribute to overall business students' satisfaction, the author, then, proposed the new conceptual model as proposed in chapter 3. The proposed model predicts how each new derived variable with its new definition contributes to the business students' satisfaction more precisely in the next chapter. The test of hypotheses of the new conceptual model variables between each variable and students' satisfaction model will be using the business students of the undergraduate classes at Stamford International University.

CHAPTER 3
RESEARCH METHODOLOGY

This chapter described the research framework and methodology in the following sequences: a new conceptual model, measurement concept, purpose of the study, research methodology and conclusion. The proposed new conceptual model was made up of eight key variables as the independent variables and the business students' satisfaction as a dependent variable. The eight key variables are as follows:

1) Academic Staff
2) Administrative Staff
3) Teaching, Interactions and Academic Support
4) Curriculum Design, Innovation and Assessment
5) Skills Developed and Future Careers
6) Facilities, Services and Information and Communication Technology
7) Social Life Integration
8) Pre-Enrolment and Value Education

All the eight key variables are directly related to the overall business students' satisfaction. The last part of this chapter explained the research methodology by making the clear problem statement, the purpose of this study, the research questions and hypotheses, the experimental design and methodology, sampling, data collection, analysis procedure, and instruments. The model with its independent variables is tested against the dependent variable of business students' satisfaction. The model's reliability and validity is also tested by using several instruments as described in the last parts of the chapter.

3.1 A New Conceptual Model

In the current globalization, with its accompanying socioeconomic, demographic, and technological changes, is having impact on a country's workforce, economy, and its higher education institutions. During the conduct of this research (2014), the idea of disruptive innovation of education have been discussed and reformed to make better higher education serving people in our current dynamic

world of globalization. In many countries, the concept of quality higher education means to provide the readiness of skill settings working towards the progressive economy in order to make the world a better place. In many developed Western countries, employment opportunities are the key issue towards their progressive economies, thereby bringing about countries' prosperity and making the world a better place to live. In Asia, both employment and entrepreneurship are important economic factors to their better economies. Then, the new variable definitions that suit to the current socioeconomic situation, based on the above literature review and being reflected with the current dynamic need of disruptive education as mentioned above, are presented as shown in Table 3.1:

Table 3.1 Show the Conceptual Model, Key Variable and Descriptions

Key Variable	Description	Source	Measurement
Academic staff	Faculty's competency to deliver scholastic achievement for students	ACT (Lotkowski, Veronica, A., Robbins, S.B., and Noeth, R. J., 2004) Wyckoff, S. (1998) Flowers, J. (1998)	Interval scale
Administrative staff	Supporting academic activities carried out by administrative staff	ACT (Lotkowski, Veronica, A., Robbins, S.B., and Noeth, R. J., 2004) Wyckoff, S. (1998) Flowers, J. (1998)	Interval scale
Teaching, interactions and classroom support	Constructivist teaching and learning contributing to student-centeredness.	Adapted from Eastman J.(2011)	Interval scale
Curriculum design, innovations and assessment	New product or curriculum designed and frequency of revision and assessment to suit the industrial needs	Adapted from Gibson, A. (2010)	Interval scale

Table 3.1 Show the Conceptual Model, Key Variable and Descriptions (Cont.)

Key Variable	Description	Source	Measurement
Skills developed and future careers	Readiness of graduate to the real world of industry. Preparation for or furthering career, expecting good job/quality of life, quicker power, network and relationship for long-term value	ACT policy report. Adapted from Gibson, A. (2010)	Interval scale
Facilities, services and information and communication technology	Availability, accessibility, physical aspects, usefulness.	Adapted from Gibson, A. (2010)	Interval scale
	Interactive technology, learning management system	Eastman, J.K. (2011)	
	Responsiveness to student concerns/suggestions, helpfulness academic support, financial aid.		
Social life integration	Opportunities to socialize, campus safety, sense of belonging enjoyable experience, diversity of student body, student preparedness to real world	Adapted from Gibson, A. (2010)	Interval scale
Pre-enrollment and university value or university brand	Accuracy of information provided, admissions and orientation, degree to which met expectations. Value influence expectation, power and universalism.	Adapted from Gibson, A. (2010). Moosmayer, D., C. &Siems, F. U. (2012).	Interval scale
Overall students' satisfaction	Student's short term attitude towards the education service received.	ACT (Lotkowski, Veronica, A., Robbins, S.B., and Noeth, R. J., 2004)	Interval Scale

From above Table 3.1, the eight key variables or predictors are also confirmed by sharing experience and making some refinement with top university administrators to reach this conceptual model, as shown above. The conceptual model consisted of eight variables are the predictors of overall business students' satisfaction. Therefore, the eight key variables or predictors are independent variables to predict the dependent variable of overall students' satisfaction of the conceptual framework.

3.2 Measurement Concept

The measurement usually involves with the operational component construct to make the measurement of each variable by using questionnaires distributed to the population sample of the experiment setting. The following table shows the construct of operational components to make interval scale of measurement. The operational components, which are question settings, are made to cover the conceptual definition of each key variable in the proposed conceptual model.

Table 3.2 Show the construction of operational component to make scaling measurement followed by Academic staff

Conceptual Definition	**Operational Component**	**Measurement Scale**
Faculty's competency to deliver scholastic achievement for students	1. Academic qualifications of instructors are good. 2. Instructors have sufficient knowledge to deliver good teaching. 3. Instructors show positive attitude and sincere help towards to students. 4. Instructors provide two-way communication to students. 5.Instructors prepare themselves well prior to class-teaching	Interval Scale

From above Table 3.2, the conceptual definition, the operational component and measurement of academic staff variable are shown. The questionnaire begins with screening questions for business students only. The survey will proceed with questionnaire by asking further questions about students' satisfaction of the university to measure the perception and the satisfaction on business students. For the level of measurement, the respondents are going to be asked to mark in the interval scales to reflect their real perception on the performance of academic staff.

Table 3.3 Show the construction of operational component to make scaling measurement followed by Administrative staff

Conceptual Definition	Operational Component	Measurement Scale
Supporting academic activities carried out by non-academic staff	6. Administrative staff shows positive attitude and sincere help to students. 7. Students are treated equally by the staff. 8. Administrative staff has sufficient knowledge of the systems in helping students. 9. Administrative staff keeps accurate and retrievable records. 10. Administrative staff treats personal information with respect and confidentiality.	Interval Scale

From above Table 3.3, the conceptual definition, the operational component and measurement of administrative staff variable are shown. The questionnaire begins with screening questions for business students only. The survey will proceed with questionnaire by asking further questions about students' satisfaction of the university to measure the perception and the satisfaction on business students. For the level of measurement, the respondents are going to be asked to mark in the interval scales to reflect their real perception on the performance of administrative staff.

Table 3.4 Show the construction of operational component to make scaling measurement followed by Teaching / Interactions / Academic Support

Conceptual Definition	Operational Component	Measurement Scale
Constructivist teaching and learning contributing to student-centeredness.	11. Teaching methodology focuses on sharing knowledge and experience between instructors and students. 12. The content proportion between theories and practices are appropriate and relevant to skills needed for industrial careers. 13. The assessment and grading policy is fair. 14. Class scheduling and logistics, technology resource and material support, and academic help desk service are useful. 15. Instructors provide appropriate time for academic help and support after classes.	Interval Scale

From above Table 3.4, the conceptual definition, the operational component and measurement of teaching / interactions / academic support variable are shown. The questionnaire begins with screening questions for business students only. The survey will proceed with questionnaire by asking further questions about students' satisfaction of the university to measure the perception and the satisfaction on business students. For the level of measurement, the respondents are going to be asked to mark in the interval scales to reflect their real perception on the performance of teaching / interactions / academic support variable.

Table 3.5 Show the construction of operational component to make scaling measurement followed by Curriculum Design / Innovation / Assessment

Conceptual Definition	Operational Component	Measurement Scale
New product or curriculum designed and frequency of revision and assessment to suit the industrial needs	16. Curricula designed are relevant to the industrial needs for employment and entrepreneurship. 17. Curricula have been revised and updated periodically to meet the industry demand. 18. University launches new programs for students every year. 19. Students are excited about new programs. 20. In overall, students like the programs they study.	Interval Scale

From above Table 3.5, the conceptual definition, the operational component and measurement of curriculum design / innovation / assessment variable are shown. The questionnaire begins with screening questions for business students only. The survey will proceed with questionnaire by asking further questions about students' satisfaction of the university to measure the perception and the satisfaction on business students. For the level of measurement, the respondents are going to be asked to mark in the interval scales to reflect their real perception on the performance of curriculum design / innovation / assessment variable.

Table 3.6 Show the construction of operational component to make scaling measurement followed by Skills Developed and Future Careers

Conceptual Definition	Operational Component	Measurement Scale
Readiness of graduate to the real world of industry.	21. University provides sufficient internship to develop skills needed by industry.	Interval Scale

Table 3.6 Show the construction of operational component to make scaling measurement followed by Skills Developed and Future Careers (Cont.)

Conceptual Definition	Operational Component	Measurement Scale
Preparation for or furthering career, expecting good job/quality of life, quicker advancement, earning power, network and relationship for long-term value	22. University provides industry executives to share experience with students both in classes and events. 23. Students have high expectation for future career. 24. University provides assistance to graduates for employment. 25. I believe that I will be employed with good salary after graduation.	Interval Scale

From above Table 3.6, the conceptual definition, the operational component and measurement of skills developed and future careers variable are shown. The questionnaire begins with screening questions for business students only. The survey will proceed with questionnaire by asking further questions about students' satisfaction of the university to measure the perception and the satisfaction on business students. For the level of measurement, the respondents are going to be asked to mark in the interval scales to reflect their real perception on the performance of skills developed and future careers variable.

Table 3.7 Show the construction of operational component to make scaling measurement followed by Facilities / Services / Information and Communications Technology (ICT)

Conceptual Definition	Operational Component	Measurement Scale
Availability, accessibility, physical aspects, usefulness	26. University provides appropriate facilities for student activities. 27. University's facilities and classrooms provide environment conducive to students' learning.	Interval Scale

Table 3.7 Show the construction of operational component to make scaling measurement followed by Facilities / Services / Information and Communications Technology (ICT) (Cont.)

Conceptual Definition	Operational Component	Measurement Scale
Interactive technology, learning management system Responsiveness to student concerns/suggestions, helpfulness academic support, financial aid	27. University's facilities and classrooms provide environment conducive to students' learning. 28. University provides appropriate support services, such as, library, study area, cafeteria, copying and printing, nursing and first aid, security, and safety to students on campus. 29. University provides appropriate ICT infrastructure, such as, internet service, computers and learning software, special technological laboratory, electronic learning platform, electronic library resource, and electronic classroom to students. 30. Students like to hang around the university's campus.	Interval Scale

From above Table 3.7, the conceptual definition, the operational component and measurement of facilities / services / information and communication technology (ICT) variable are shown. The questionnaire begins with screening questions for business students only. The survey will proceed with questionnaire by asking further questions about students' satisfaction of the university to measure the perception and the satisfaction on business students. For the level of measurement, the respondents are going to be asked to mark in the interval scales to reflect their real perception on the performance of facilities /services / information and communication technology (ICT) variable.

Table 3.8 Show the construction of operational component to make scaling measurement followed by Social life integration

Conceptual Definition	Operational Component	Measurement Scale
Opportunities to socialize, campus safety, sense of belonging enjoyable experience, diversity of student body, student preparedness to real world	31. University empowers students by having student organization to run their own activities. 32.University provides student life service support from admission till graduation such as housing and accommodation, transportation, visa application, orientation, counseling, nursing care and graduation ceremony. 33. University support students in providing internship, employment and alumni activities.	Interval Scale

From above Table 3.8, the conceptual definition, the operational component and measurement of social life integration variable are shown. The questionnaire begins with screening questions for business students only. The survey will proceed with questionnaire by asking further questions about students' satisfaction of the university to measure the perception and the satisfaction on business students. For the level of measurement, the respondents are going to be asked to mark in the interval scales to reflect their real perception on the performance of social life integration variable.

Table 3.9 Show the construction of operational component to make scaling measurement followed by Pre-enrollment and University Value

Conceptual Definition	Operational Component	Measurement Scale
Accuracy of information provided, admissions and orientation, degree to which met expectations Value influence expectation, power and universalism	34. University provides accuracy of admission information and orientation to meet potential students' expectation. 35. University has a strong marketing and sale strategy. 36. University's brand is respectable. 37. University's graduates are easily employable.	Interval Scale

From above Table 3.9, the conceptual definition, the operational component and measurement of pre-enrollment and university value variable are shown. The questionnaire begins with screening questions for business students only. The survey will proceed with questionnaire by asking further questions about students' satisfaction of the university to measure the perception and the satisfaction on business students. For the level of measurement, the respondents are going to be asked to mark in the interval scales to reflect their real perception on the performance of pre-enrollment and university value variable.

Table 3.10 Show the construction of operational component to make scaling measurement followed by Overall students' satisfaction

Conceptual Definition	Operational Component	Measurement Scale
Student's short term attitude towards the education service received	38. Overall, I am satisfied with the university.	Interval Scale

From above Table 3.10, the conceptual definition, the operational component and measurement of overall students' satisfaction are shown. The questionnaire begins with screening questions for business students only. The survey will proceed with questionnaire by asking further questions about students' satisfaction of the

university to measure the perception and the satisfaction on business students. For the level of measurement, the respondents are going to be asked to mark in the interval scales to reflect their real perception on the overall students' satisfaction in the university.

3.3 Purpose of the study

The purpose of research is to measure the impact of the eight key variables, from the above conceptual model, on business students' satisfaction as shown above in Figure 3.1.2. The clear definitions of key variables and their definitions are shown in the above Table 3.1. The operational components to construct the conceptual measurement are shown in Table 3.2. The eight independent variables consist of the following components: 1) Academic Staff, 2) Administrative Staff, 3) Teaching, Interactions and Academic Support, 4) Curriculum Design, Innovations and Assessment, 5) Skills Developed And Future Careers, 6) Facilities, Services And Information and Communication Technology, 7) Social Life Integration, 8) Pre-Enrollment and University Value, and the dependent variable of overall students' satisfaction. Each variable consists of the operational components which are in the set of survey questions distributed to the sample group of undergraduate business students at Stamford International University – Thailand. The sample group selected to represent the population of international business students is considered to be innovative by nature, reliable, and valid (Stodnick, M., and Rogers, P., 2008).

The statistical analysis of this research hypothesis is examined by using data analysis program. The survey questionnaire made up from the eight key variables is distributed to the 200 undergraduate business students at Stamford International University. It is expected that the eight key variables in the conceptual model will contribute to overall business students' satisfaction.

The key variables are of most importance to university leaders in determining the strategy of implementing priority to improve university's operations, thereby increasing better business performance.

3.4 Sampling, Data Collection and Analysis Procedure

The survey questionnaires were distributed to undergraduate business students at Stamford International University. The number of undergraduate business administration students at Bangkok campus was around 450 (as of June, 2014). The sample size of 220, calculated by using Taro Yamane's formula, was used to cover Bachelor's Degree of Business Administration weekday program in all classes. This sample size was sufficient to represent the whole population of all business student body at the university. This special sample is innovative by nature, reliable and valid, as confirmed by Michael Stodnick and Pamela Rogers published by Decision Sciences Journal in January 2008 (Stodnick, M., and Rogers, P., 2008) when they used the sample consisted of six undergraduate Operations Management classes at the Southwestern University, USA.

The sample size calculation for this research was calculated based on Taro Yamane (1967), as follows

$$\text{Yamane Formula:} \quad n = \frac{N}{1+N\,(e)^2}$$

n = Sample Size

N = Population Size

e = Level of Precision

The population of this research is the undergraduate business students at Stamford International University, Bangkok Campus which was around 450.

The calculation of the sample size of the research is shown below:

$$n = \frac{N}{1+N\,(e)^2} \dashrightarrow \frac{450}{1+450\,(0.05)^2} = 220$$

Then, the sample size used was 220.

3.4.1 Research Instruments

The proposed 16 hypotheses of which component and how weigh of each component will contribute to business students' satisfaction will be tested by statistical computation of the above survey questionnaires. The proposed questionnaire was designed to obtain feedback from the potential respondents. This research used the questionnaire to measure the business students' satisfaction. The questionnaire was categorized into two sections. The first section was the questions or the operational components related to the business students' satisfaction. It was the main part of this research to measure the business students' satisfaction. It included all the questions of dependent variable and independent variables.

The second part was the student attributes which are gender (Male; Female), nationality (Thai; Non-Thai) and age which represent the business student body of this study.

3.4.2 Design of Questionnaires

The questionnaires designed covered all eight variables contributing to business students' satisfaction. It can be found in Appendix A. They are five-point Likert scale in weighing the answers, that is, 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. All questionnaires for each student will be treated confidentially. The student needed to answer questions independently.

The five-point Likert scale was used to measure the dependent and independent variables. The respondents were required to choose to what extent they agreed or disagreed with each of the statement, with "1" being strongly disagreed and "5" being strongly agreed. The seven point Likert scale, Lewis (1993), lacked of verbal labeling for points two to six which may cause respondents to overuse the extreme ends of the scale. So, the author used the 5-point Likert scale to reduce the "frustration level" of respondents and increase response rate and quality (Bakakus and Mangold,1992, Cooper ,2006). Likert scale is the most frequently used to measure variation of the summated rating scale and it is also simple to construct and produce a high reliable scale. The rating scale has shown as below (Allen and Meyer, 1997):

Score	Level of Affection
1 scale point	Strongly Disagree
2 scale points	Disagree
3 scale points	Neutral
4 scale points	Agree
5 scale points	Strongly Agree

The researcher used a classification method to analyze the data. Scores are divided into equal score intervals as in the following formula:

$$\text{Class intervals} = \frac{\text{Max} - \text{Min}}{\text{N}} = \frac{5 - 1}{5} = 0.8$$

Where Max = Maximum Score
Min = Minimum score
N = Number of answer

According to the formula as shown above, interpreting of the results of the average of the eight key comprehensive variables contributing to business students' satisfaction are as follows:

Score Interval	Descriptions
1.0 – 1.80	Lowest important level
1.81 – 2.60	Low important level
2.61 – 3.40	Moderate important level
3.41 – 4.20	High important level
4.21 – 5.00	Highest important level

3.4.3 Data Collection Procedure

In this research, the author used both primary and secondary data to analyze the relationship between comprehensive key variables and overall business students 'satisfaction at Stamford International University, Thailand.

1 Primary Data Collection

The author collected the information data by distributing the hard copy of survey questions to the undergraduate business student classes at Stamford International University. All the questions were categorized according to independent variables and dependent variable by using a five-point Likert scale. The survey was conducted in August 2014 to BBA students at Stamford International University, Bangkok, Thailand**.**

2 Secondary Data Collection

The secondary data gathered by using websites, textbooks, journals, e-journals, academic articles, other master of business administration (MBA) and doctoral (Ph.D.) thesis and independent study (IS) which were relevant and able to support the literature review.

3.5 Validity and Reliability

The purpose of the validity and reliability here was to conduct the primary data of 40 sampled undergraduate business students of the survey questionnaires used before conducting the survey of the business students at the sample size of 220 in this research study.

3.5.1 Validity

The questionnaire was submitted to committee of expert judges from 3 universities administrators in Thailand (1-National Institute of Development and Administration - NIDA, 1-Sukhothai Dhammadhirat University, and 1-Stamford International University). Expert committee members possess the high qualifications and significant practical work experience at the top management levels and administration in the higher education institutions in the average of 30 years. All three judges agreed to the survey questionnaires with high degree level after eliminating two questions of the least impact on the business students' satisfaction. They are about the weight of students to utilize the sport facilities on campus. Stamford rented the sport facilities nearby in several places for students already.

For calculating the internal consistency (IC), the following formula was used:

$$IC = \frac{\sum R}{N}$$

IC = Internal Consistency

$\sum R$ = Number of items evaluated by judge

N = Total of judges

A commonly accepted rule for describing Internal Consistency (IC) has been shown as bellowed:

Value	IC
0.90 – 1.00	Excellent
0.70 – 0.89	Good
0.50 – 0.69	Fair
0.00 – 0.49	Poor

3.5.2 Reliability

The author conducted the pre-testing of the questionnaires which are the operational components of the variables of the proposed conceptual model. The purpose was to test the reliability of the operational components used for each variable to make up of the conceptual model whether is acceptable or not. The Cronbach's Alpha reliability test of the relationship between each independent variable and the dependent variable of business students' satisfaction was calculated. The pre-tested sample of 30 items was distributed to the undergraduate business student programs. The results of the Cronbach's Alpha reliability test of each variable are shown in the Table 3.11.

Table 3.11 Reliability Test of the variable by using the Cronbach's Alpha

Question Items	Cronbach's Alpha if Item Deleted
1.Academic staff	.920
2. Administrative staff	.929
3.Teaching / Interactions / academic support	.912
4.Curriculum design, innovation and assessment	.909
5.Skills developed and future careers	.912
6.Facilities / Services / ICT	.916
7.Social life integration	.916
8.Pre-enrollment/Values education	.916

The results of the Cronbach Alpha's reliability test of the eight variables are well over the given level of 0.7. They showed very high degree of reliability and validity. Hence, the survey questionnaires are reliable and valid for the testing of 220 undergraduate business students at Stamford International University between the business students' satisfaction and the eight new variables proposed in the new conceptual model.

3.6 Data Analysis

Statistical Software interpreted all collected data. The form of data presentation from these procedures was presented in easily interpretable formats. All the statistical procedures were performed by computer software to ensure accuracy. Statistics used for data analysis were of two types.

3.6.1 Descriptive Statistics

Used to analyze the demographic data in every investigated variable was measured by Frequency and Percentage. For variables, Interval Scale, Arithmetic Mean, Standard Deviation, Maximum and Minimum Values, were applied.

3.6.2 Inferential Statistics

Interferential statistics was used in research testing. The methods to be applied were One-Way ANOVA (F-Test) and Pearson Correlation, the details of which are:

One-Way ANOVA (F-test) was used to find the difference of perceived business students' satisfaction and the eight key variables of the proposed conceptual model among demographic profiles of age, gender, nationality and year of study.

Pearson-Product Moment Correlations Analysis was performed to test the research questions by describing the relationship between business students' satisfaction and the eight variables used in the proposed conceptual model. Although a cut-off point of ($p < 0.05$) was set, a practical effect size of ($r > 0.30$) (medium effect, Cohen 1992) was also considered for the correlational.

3.8 Conclusion

The proposed research study aims to conduct the comprehensive research study of all key variables or predictors related to business students' satisfaction for the university management. The study also incorporated new variables reflecting the

globalization effects of socioeconomic, demographic, and technological changes. The study of past literature since 1985 by using the theoretical framework of delivering quality service: from the SERVQUAL model by Parasuraman (1985) and balancing customer perceptions and expectations by Zeithamal, V.A. and others (1990) to the present research of university value or a university brand and also the new interactive technology for teaching and learning factor, gave further understanding of developing the new proposed conceptual model. The new proposed conceptual model, then, consisted of the new set of eight variables with the clear definitions by considering the current factor of innovative social concern of higher education management towards the education quality, i.e., a university value or a university brand to the existing Gibson's literature proposed model (2010).

The proposed empirical study to test the hypotheses of the eight variables of the new proposed conceptual model resulted in a clearer picture of business students' satisfaction in the modern age. It gives insight into the understanding of modern age of university operations in aiming to making better business performance.

CHAPTER 4
RESEARCH FINDINGS

This chapter described the process of validating the proposed conceptual model by statistical analysis. The analysis of the collected data via questionnaires was presented along with discussion. Then, this chapter was organized as follows: descriptive statistics, analysis of variables related to students' satisfaction, interferential statistics analysis and conclusion. The descriptive statistics presented the characteristics of the sample collected from undergraduate business programs of Stamford International University. The analysis of variables contributed to students' satisfaction was clearly described in the order of importance, by the Mean ($\overline{X}$) and Standard Deviation (SD). The use of interferential statistical analysis was used to describe the correlation (r) between individual variable to the business students' satisfaction.

4.1 Descriptive statistics

Descriptive statistics referred to the transformation of the raw data into a form that made them easy to understand and interpret (Zikmund, 1999). All the data collected from respondents were analyzed by using the data analysis program to calculate frequency distribution and percentage distribution. The socioeconomic characteristics of the sample use are shown in the Table 4.1:

Table 4.1 Descriptive of respondents followed by Gender

Descriptive	Frequency	Percentage (%)
Gender		
Male	106	48.2
Female	114	51.8
Total	220	100

From Table 4.1 showed that the majority of respondents were female (51.8%), followed by male (48.2%)

Table 4.2 Descriptive of respondents followed by Age

Descriptive	Frequency	Percentage (%)
Age		
17 or younger	9	4.1
18-21 year olds	169	76.8
22-29 year olds	38	17.3
Over 30 year olds	4	1.8
Total	220	100

From Table 4.2 showed that the majority of respondents were aged 18-21 year olds (76.8%), followed by those aged 22-29 year olds (17.3%), 17 or younger (4.1%) and over 30 year olds (1.8%) respectively.

Table 4.3 Descriptive of respondents followed by Year of study

Descriptive	Frequency	Percentage (%)
Year of study		
Freshman / First year	116	52.7
Sophomore	32	14.5
Junior	55	25.0
Senior	17	7.7
Total	220	100

From Table 4.3 showed that the majority of respondents were freshman/first year students (52.7%), followed by junior students (25.0%), sophomore (14.5%) and senior (7.7%) respectively.

Table 4.4 Descriptive of respondents followed by Nationality

Descriptive	Frequency	Percentage (%)
Nationality		
Thai	135	61.4
Non Thai	85	38.6
Total	220	100

From Table 4.4 showed that the majority of respondents were Thai students (61.4%), followed by Non Thai students (38.6%).

Table 4.5 Descriptive of respondents followed by Sponsors tuition fee

Descriptive	Frequency	Percentage (%)
Sponsors tuition fee		
Parents	186	84.5
Yourself	22	10.0
Other	12	5.5
Total	220	100

From Table 4.5 showed that the majority of respondents were sponsors tuition fee from parent (84.5%), followed by sponsors tuition fee from yourself (10.0%), and from other (5.5%) respectively.

Table 4.6 Descriptive of respondents followed by Begin University or transfer

Descriptive	Frequency	Percentage (%)
Begin university or transfer		
Started here	185	84.1
Transferred from another institution	35	15.9
Total	220	100

From Table 4.6 showed that revealed that the majority of respondents were stared for studying here (84.1%), followed by transferred from another university (15.9%).

Table 4.7 Descriptive of respondents followed by Live during the school study

Descriptive	Frequency	Percentage (%)
Live during the school study		
Nearby Apartment /Condominium	116	52.7
Family / Relative's house	99	45.0
Other	5	2.3
Total	220	100

From Table 4.7 showed that the majority of respondents lived nearby apartment (52.7%), followed by family / relative's house (45.0%), and other (2.3%) respectively.

Table 4.8 Descriptive of respondents followed by Start over again

Descriptive	Frequency	Percentage (%)
Start over again		
Yes, Identify	62	28.2
Probably yes	46	20.9
Probably no	112	50.9
Total	220	100

From Table 4.8 showed that the majority of respondents were said "probably no" to start over again (50.9%), followed by "yes, identify" (28.2%), and "probably yes" (20.9%) respectively.

4.2 Analysis of variables related to students' satisfaction

From the conceptual model, the weighing results of the proposed eight variables relating to the satisfaction of students were discussed by using Mean ($\overline{X}$) and Standard Deviation (SD) were summarized as shown in Table 4.7:

Table 4.9 The weighing results of the eight variables

Variable	Mean ($\overline{X}$)	SD
1.Academic Staff	3.97	0.787
2.Teaching/Interaction/Academic Support	3.63	0.825
3.Skills Developed And Future Careers	3.62	0.861
4.Administrative Staff	3.61	1.015
5.Curriculum Design, Innovation, Assessment	3.59	0.734
6.Facilities/Services/ICT	3.48	0.831
7.Social Life Integration	3.45	0.899
8. Pre-Enrollment/Value Education	3.43	0.848
9. Overall Satisfaction	3.51	1.011
Grand Total	3.62	0.681

From the Table 4.9, it appears that the first to fifth variables, directly related to academic environment, were the more important to the students' satisfaction. They were about instructors (Academic Staff), Supporting Staff (Administrative Staff), Teaching And Learning (Teaching / Interaction / Academic Support), Skills And

Future Career Perceived, And Curriculum (Product Design / Innovation And Assessment) respectively. The rest of them, the sixth to eighth variables, which were also important, were the supporting activities in the indirect academic environment, like, facilities / information and communication technology / services, social life integration and pre-enrollment, ranking in order. The weighing results of the mean ($\overline{X}$) and standard deviation (SD) of each variable and its operational components were shown and discussed in a more detailed as follows:

4.2.1 Academic Staff

The academic staff is definitely important to the university, especially, the qualification of the teachers or instructors (ACT report by Lotkowski, V, A., Robbins, S.B., and Noeth, R. J.,2004). The teaching type university focuses itself to the teachers or instructors that have high competency of teaching or interactive teaching to make the students satisfied and happy about the knowledge gain for their future careers (Wyckoff, S., 1998, and Flowers, J., 1998). In addition, the positive and constructive attributes in all aspects towards the students are also the key factor to motivate the student learning atmosphere. The results of the staff variable and its operational components contributing to business students' satisfaction are shown in Table 4.10 with its Mean ($\overline{X}$) and Standard Deviation (SD):

Table 4.10 Academic Staff Variable

Satisfaction	Satisfaction Level		Implementation Result
	$\overline{X}$	SD	
Academic Staff			
Academic qualifications of instructors are good	3.94	0.892	Satisfied
Instructors have sufficient knowledge to deliver good teaching	3.95	0.895	Satisfied
Instructors show positive attitude and sincere help towards to students	4.00	0.972	Satisfied
Instructors provide two-way communication to students	3.90	0.941	Satisfied
Instructors prepare themselves well prior to class-teaching	4.08	0.911	Satisfied
Total	**3.97**	**0.787**	**Satisfied**

Commented [s1]: ถามเกี่ยวกับเรื่องความพึงพอใจ น่าจะใช้
1 = Very Satisfied
2 = Dissatisfied
3 = Neither Satisfied or Dissatisfied
4 = Satisfied
5 = Very satisfied

From Table 4.10, the academic staff factor was the highest interest among the business students ($\overline{X}$ =3.97, SD=0.787). Business students liked their instructors to prepare themselves well prior to class-teaching ($\overline{X}$ =4.08, SD=0.911)), followed by the positive attitude and sincere helped to students ($\overline{X}$ =4.00, SD=0.972). Therefore, students expected their instructors to be highly qualified (X =3.94, SD=0.892) with sufficient knowledge to deliver good teaching ($\overline{X}$ =3.95, SD=0.895) and provided two-way communication to students ($\overline{X}$ =3.90, SD=0.941). It is noted here that the academic staff is the most important factor towards running the university's operations.

4.2.2 Teaching, Interactions, and Academic support

Not only the qualifications of teachers or instructors themselves, but also their performance in delivering the knowledge to make the students learn with the highest satisfaction is complementary components to the academic staff factor. Sharing knowledge and experience by the teachers or instructors by the appropriate teaching methodology with the interactive learning by the students is very important thing to consider. The convenient arrangement, like, class scheduling, logistics, and time availability to help support the student learning is also the key contributing factor in making the students' satisfaction. The results of the variable and its operational components analysis, i.e., Mean ($\overline{X}$) and Standard Deviation (SD) is presented in the below Table 4.11.

Table 4.11 Teaching / Interactions / Academic Support Variable

Satisfaction	Satisfaction Level		Implementation Result
	$\overline{X}$	SD	
Teaching / Interactions / Academic Support			
Teaching methodology focuses on sharing knowledge and experience between instructors and students	3.80	0.968	Satisfied

Table 4.11 Teaching / Interactions / Academic Support Variable (Cont.)

Satisfaction	Satisfaction Level		Implementation Result
	$\overline{X}$	SD	
Teaching / Interactions / Academic Support			
Teaching methodology focuses on sharing knowledge and experience between instructors and students	3.80	0.968	Satisfied
The content proportion between theories and practices are appropriate and relevant to skills needed for industrial careers	3.67	0.961	Satisfied
The assessment and grading policy is fair	3.50	1.108	Satisfied
Class scheduling and logistics, technology resource and material support, and academic help desk	3.59	0.996	Satisfied
Instructors provide appropriate time for academic help and support after classes	3.63	0.991	Satisfied
Total	3.97	0.787	Satisfied

From table 4.11, teaching/interactions/academic support was the second important factor for business students ($\overline{X}$ =3.63, SD=0.825). The students were concerned with teaching methodology, subject content, and advising time. The rest were class management and grading policy. The resulting scores ranked in order were as follows: teaching methodology focused on sharing knowledge and experience between instructors and students ($\overline{X}$ =3.80, SD=0.968); the content proportion between theories and practices were appropriate and relevant to skills needed for industrial career ($\overline{X}$ =3.67, SD=0.961); instructors provided appropriate time for academic help and support after classes ($\overline{X}$ =3.63, SD=0.825); class scheduling and logistics, technology resource and material support, and academic help desk service were useful ($\overline{X}$ =3.59, SD=0.996); and the assessment and grading policy was fair ($\overline{X}$ =3.50, SD=1.108). The teaching competency of the teachers or instructors, then, is the second most important contributing factor to the business students' satisfaction.

4.2.3 Skills developed and future careers

The job employment and entrepreneur are among the highest expectation of students when they are sponsored or self-supported in choosing the university they learn and graduate. The skilled developed and future careers are one of the most concerns among the students after graduation. The student needs to have the good future career especially the good salary or revenue when they graduate. They want to be a good citizen of any country whereby he or she can be employed. The industrial employers will always need the good people to fill in their positions but they need the skills fitted to their organization in both technical and soft skills. Even this factor appears to be a long term criteria decision making for the students; it is interesting to see how they rank them in terms of satisfaction. The results of a skills developed and future careers variable and its operational components weighing importance by using Mean ($\overline{X}$) and Standard Deviation (SD) are shown in the following Table 4.12.

Table 4.12 Skills Developed and Future Careers Variable

Satisfaction	Satisfaction Level		Implementation Result
	$\overline{X}$	SD	
Skills developed and future careers			
University provides sufficient internship to develop skills needed by industry	3.57	1.060	Satisfied
University provides industry executives to share experience with students both in classes and events	3.50	1.036	Satisfied
Students have high expectation for future career	3.80	1.093	Satisfied
University provides assistance to graduates for employment	3.50	0.948	Satisfied
I believe that I will be employed with good salary after graduation	3.75	1.089	Satisfied
Total	**3.97**	**0.787**	**Satisfied**

From table 4.12, skills developed and future careers were the third important factor to students' satisfaction ($\overline{X}$ =3.62, SD=0.861). The students care about salary,

internship, industrial experience sharing, and employment assistance respectively. The resulting scores of skills developed and future careers were as follows: having high expectation for future career ($\overline{X}$ =3.80, SD=1.093); being employed with good salary ($\overline{X}$ =3.75, SD=1.089); being provided sufficient internship to develop skills needed by industry ($\overline{X}$ =3.57, SD=1.060); being provided of industry executives to share experience with students both in classes and events ($\overline{X}$ =3.50, SD=1.036); being provided assistance to graduates for employment ($\overline{X}$ =3.50, SD=0.948). This variable or factor appears to be the very important issue for the employers and policy makers but this long term consideration factor for students while they are studying still stay the third important factor in making them satisfied.

4.2.4 Administrative Staff

The administrative staff or staff that supports all the academic activities is very important to the success of the service industry, like, the university. The service delivered by the administrative staff is determined as a key success factor in running the university to make the students satisfied. The factor presented here limited to the support of the academic work which is the core business of the university. The academic activities are mainly about the students' academic information system and other supports to the academic staff. The non-academic activities related to the university's service are redefined and discussed in the sixth to eight variables in this chapter. The results of an administrative variable and its operational components' weighing importance by the Mean ($\overline{X}$) and Standard Deviation (SD) are shown in the following Table 4.13.

Table 4.13 Administrative Staff Variable

Satisfaction	Satisfaction Level		Implementation Result
	$\overline{X}$	SD	
Non-Academic related			
Administrative staff show positive attitude and sincere help to students	3.63	1.024	Satisfied

Table 4.13 Administrative Staff Variable (Cont.)

Satisfaction	Satisfaction Level		Implementation Result
	$\bar{X}$	SD	
Non-Academic related			
Administrative staff show positive attitude and sincere help to students	3.63	1.024	Satisfied
Students are treated equally by the staff	3.55	1.065	Satisfied
Administrative staff have sufficient knowledge of the systems in helping students	3.60	1.027	Satisfied
Administrative staff keep accurate and retrievable records	3.59	0.968	Satisfied
Administrative staff treat personal information with respect and confidentiality	3.70	1.025	Satisfied
Total	3.61	0.865	Satisfied

From Table 4.13, the administrative staff was the fourth important factor to business students' satisfaction ($\bar{X}$ =3.61, SD=0.865). The students liked their administrative staff to treat personal information with respect and confidentiality ($\bar{X}$ =3.70, SD=1.025) because they were concerned about their records in the transcript for job application and/or further studies. Then, the students cared about the administrative staff's service, such as, showing positive attitude and sincere help to students ($\bar{X}$=3.63, SD=1.024), having sufficient knowledge of the system in helping students ($\bar{X}$=3.60, SD=1.027), keeping accurate and retrieval records ($\bar{X}$=3.59, SD=0.968), being treated equally ($\bar{X}$=3.55, SD=1.065). The administrative staff was the fourth important factor in making the students' satisfaction.

4.2.5 Curriculum design, innovation and assessment

For the innovative university, the new curricula designed is selectively done to fit the industrial needs including the skills set that involved and participated by the industry experts (Christensen, C. and Eyring, H., J., 2011). Most of the students like to have the chance to choose the future careers they wanted and expected. The

curriculum design to fit the industrial skill needs is then very important to generate the job employment. The dynamic job skill change driven by the emerging technology responding to the industrial competition makes the traditional university lack behind in producing the graduates fitted to their industrial skill demands. The revision of curricula is often required by the state education agency to make the job employment valuable to the country economic needs. The results of a curriculum design, innovation, and assessment variable and its operational components are shown in the Mean ($\overline{X}$) and Standard Deviation (SD) in the Table 4.14 as follows:

Table 4.14 Curriculum design, Innovation and Assessment Variable

Satisfaction	Satisfaction Level		Implementation Result
	$\overline{X}$	SD	
Curriculum design, innovation and assessment			
Curricula designed are relevant to the industrial needs for employment and entrepreneurship	3.64	0.914	Satisfied
Curricula have been revised and updated periodically to	3.69	0.920	Satisfied
University launches new programs for students every year	3.56	0.989	Satisfied
Students are excited about new programs	3.52	1.031	Satisfied
In overall, students like the programs they study	3.58	0.969	Satisfied
Total	3.59	0.734	Satisfied

From table 4.14, curriculum design, innovation and assessment were the fifth important factor to business students' satisfaction ($\overline{X}$ =3.59, SD=0.734). The students were concerned about curriculum designed to fit the industrial needs. The resulting scores of the curriculum environment were as follows: curricula have been revised and updated periodically to meet the industry demand ($\overline{X}$ =3.69, SD=0.920); curricula designed are relevant to the industrial needs for employment and entrepreneurship ($\overline{X}$ =3.64, SD=0.914); being launched the new program for students every year ($\overline{X}$ =3.56, 0.989); and being excited about the new programs ($\overline{X}$=3.52, SD=1.031). In overall, the students liked the program they study ($\overline{X}$ =3.58, SD=0.969). A curriculum design,

innovation, and assessment ranked the fifth important factor in making the students satisfied.

4.2.6 Facilities, Services, and Information and Communication Technology

The university's facilities that are conducive to the in-class student learning and out-of-class student learning activities provide the constructivism environment to motivate the students to study with convenience and satisfaction. The facilities and their supporting areas include classrooms, laboratories, library, study areas, sport activity areas, recreational areas, cafeteria, internet speed, and others are required to make up of the university support services, in responding to the students' needs and making them satisfied with their choices. The results of a facilities, services, and Information and Communications Technology variable and its operational components with the Mean ($\overline{X}$) and Standard Deviation (SD) are shown in the following Table 4.15.

Table 4.15 Facilities / Services / Information and Communications Technology Variable

Satisfaction	Satisfaction Level		Implementation Result
	$\overline{X}$	SD	
Facilities / Services / ICT			
University provides appropriate facilities for student activities	3.56	0.994	Satisfied
University's facilities and classrooms provide conducive environment to students' learning	3.72	0.999	Satisfied
University provides appropriate support services, such as, library, study area, cafeteria, copying and printing, nursing and first aid, security, and safety to students on campus	3.55	0.976	Satisfied
University provides appropriate ICT infrastructure, such as, internet service, computers and learning software, special technological laboratory, electronic learning platform, electronic library resource, and electronic classroom to students	3.37	1.157	Dissatisfied
Students like to hang around the university's campus	3.25	1.168	Dissatisfied
Total	3.48	0.831	Satisfied

From Table 4.15, facilities/services/information and communication technology were the sixth important factor to business students' satisfaction ($\overline{X}$ =3.48, SD=0.831). The students perceived the university's facilities services, internet and computer laboratory as necessary support to their learning and extracurricular activities. The resulting scores of the facilities/services/information and communication technology were as follows: facilities and classrooms providing conducive environment to students' learning ($\overline{X}$ =3.72, SD=0.999); being provided appropriate facilities for student activities ($\overline{X}$ =3.56, SD=0.994); being provided appropriate support services, such as, library, study area, cafeteria, copying and printing, nursing and first aid, security, and safety to students on campus ($\overline{X}$=3.55, SD=0.976); being provided appropriate Information and Communications Technology infrastructure, such as, internet service, computer and learning software, special technological laboratory, electronic learning platform, electronic library resource, and electronic classroom to students ($\overline{X}$=3.37, SD=1.157). Students liked to hang around the university campus was scored at normal ($\overline{X}$=3.25, SD=1.168).

4.2.7 Social Life Integration

Students need the campus life and their social activities to adapt themselves and to prepare themselves to be the good employees or entrepreneurs or the good citizen of a country where they belong to. The students' extracurricular activities provided by the students are a part of grooming the students to prepare to be good citizen. Included are the autonomy of student's organization, supporting accommodation and logistics for both domestic and international students, internships, and alumni continuing activities. The results of a social life integration variable and its operational components in the weighing important terms of the Mean ($\overline{X}$) and Standard Deviation (SD) are shown in the following Table 4.16.

Table 4.16 Social life integration Variable

Satisfaction	Satisfaction Level		Implementation Result
	$\overline{X}$	SD	
Social life integration			
University empowers students by having student organization to run their own activities	3.39	1.061	Dissatisfied
University provides student life service support from admission till graduation such as housing and accommodation, transportation, visa application, orientation, counseling, nursing care and graduation ceremony	3.47	1.031	Satisfied
University support students in providing internship, employment and alumni activities	3.51	0.972	Satisfied
Total	3.45	0.899	Satisfied

From table 4.16, social life integration was the seventh important factor to students' satisfaction ($\overline{X}$=3.45, SD=0.899). The activity that the students liked the most was when the university supports the students in providing internship, employment and alumni activities ($\overline{X}$=3.51, SD=0.972). The students were also satisfied when the university provided student life service support from admission till graduation, such as, housing and accommodation, transportation, visa application, orientation, counseling, nursing care and graduation ceremony ($\overline{X}$=3.47, SD=1.031). It seems neutral when the university empowers students by having student organization to run their own activities ($\overline{X}$=3.39, SD=1.061).

4.2.8 Pre-enrolment and Value Education

Prior to entering the university, the students usually seek the information of their own choices and set their expectations. The university has the duty to give the accurate and reliable information. In Thailand, the Commission on Higher Education protects the students by monitoring and control the university in providing information to the students. The marketing information to the students must be well

prepared in the accuracy and reliable. The quality assessment results by the Thai Commissioner on Higher Education and The Office of National Education Standard and Quality Assessment can be advertised in compliance with the regulations set forth. The pre-enrolment and brand are one of the choices of the today's students concerned and they compared and assessed the information given by the university. The results of a pre-enrolment and value education variable and its operational components with their Mean ($\overline{X}$) and Standard Deviation (SD) are shown in Table 4.17 as follows:

Table 4.17 Pre-enrollment / Value education Variable

Satisfaction	Satisfaction Level		Implementation Result
	$\overline{X}$	SD	
Pre-enrollment / Values education			
University provides accuracy of admission information and orientation to meet potential students' expectation	3.45	1.022	Satisfied
University has a strong marketing and sale strategy	3.51	1.014	Satisfied
University's brand is respectable	3.43	1.061	Satisfied
University's graduates are easily employable	3.35	0.994	Dissatisfied
Total	3.43	0.848	Satisfied

From table 4.17, the pre-enrollment/value education factor which was the lowest important factor, the students liked the most when the university had a strong marketing and sale strategy ($\overline{X}$=3.43, SD=0.848). They were most satisfied when university had a strong marketing and sale strategy ($\overline{X}$=3.51, SD=1.014). They were also satisfied when university provided accuracy of admission information and orientation to meet potential students' expectation ($\overline{X}$=3.45, SD=1.022) and when the university's brand is respectable ($\overline{X}$=3.43, SD=1.061). They were neutral when the university's graduates were easily employable ($\overline{X}$=3.35, SD=0.994).

4.2.9 Overall Students' Satisfaction

The purpose is to check the interval scale of overall satisfaction by the students. It is also used to check the relationships by calculating the statistical correlation coefficients between each variable and the overall students' satisfaction. The level of reliability of the model is given by the strong (r=≥0.70) and very strong (r≥0.80) correlation coefficient between each variable and the overall satisfaction are shown in Table 4.18 as follows:

Table 4.18 Overall students' satisfaction

Satisfaction	Satisfaction Level		Implementation Result
	$\overline{X}$	SD	
Overall students' satisfaction			
Overall, I am satisfied with the university.	3.57	1.011	Satisfied
Grand Total	3.61	0.684	Satisfied

In overall, the students were satisfied with the university ($\overline{X}$=3.57, SD=1.011). The grand total average of all nine variables, including overall students' satisfaction was good ($\overline{X}$=3.61, SD=0.684) and was strongly correlated with the students' satisfaction.

4.3 The Inferential Statistical Analysis

Pearson correlation coefficient was used to test the relationship between all the eight independent variables and the overall students' satisfaction and the ANOVA used to test the hypothesis of each dependent variable. The alpha value or the reliability factor was acceptable when it was less than 0.05 or 5% or the level of confidence was over 95%. The results of hypotheses testing were discussed as follows:

Table 4.19 Relationship between academic staff variable and overall students' satisfaction

Correlations			
		H1	Overall
H1	Pearson Correlation	1	.778**
	Sig. (2-tailed)		.000
	N	220	220
Overall	Pearson Correlation	.778**	1
	Sig. (2-tailed)	.000	
	N	220	220

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

From table 4.19, Pearson correlation coefficient between the academic–related variable and the overall students' satisfaction showed a strong correlation (r=0.778) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the first hypothesis was valid to say that the academic staff variable had a strong relationship with the overall students' satisfaction.

Table 4.20 Relationship between administrative staff variable and overall students' satisfaction

Correlations			
		H1	Overall
H2	Pearson Correlation	1	.778**
	Sig. (2-tailed)		.000
	N	220	220
Overall	Pearson Correlation	.778**	1
	Sig. (2-tailed)	.000	
	N	220	220

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

From table 4.20, Pearson correlation coefficient between the administrative staff variable and the overall students' satisfaction showed a strong correlation (r=0.709) with the alpha value or the significance of zero. The hypothesis test was

reliable. Hence, the second hypothesis was valid to say that the administrative staff variable had a strong relationship with the overall students' satisfaction.

Table 4.21 Relationship between teaching, interactions, and academic support and overall students' satisfaction

Correlations			
		H3	Overall
H3	Pearson Correlation	1	.850**
	Sig. (2-tailed)		.000
	N	220	220
Overall	Pearson Correlation	.850**	1
	Sig. (2-tailed)	.000	
	N	220	220

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

From table 4.21, Pearson correlation coefficient between the teaching, interactions, and academic support variable and the overall students' satisfaction showed a very strong correlation (r=0.850) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the third hypothesis was valid to say that the teaching, interactions, and academic support variable had a very strong relationship with the overall students' satisfaction.

Table 4.22 Relationship between curriculum design, innovations, and assessment and overall students' satisfaction

Correlations			
		H4	Overall
H4	Pearson Correlation	1	.854**
	Sig. (2-tailed)		.000
	N	220	220
Overall	Pearson Correlation	.854**	1
	Sig. (2-tailed)	.000	
	N	220	220

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

From table 4.22, Pearson correlation coefficient between the curriculum design, innovations, and assessment variable and the overall students' satisfaction showed a very strong correlation (r=0.854) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the fourth hypothesis was valid to say that the academic related variable has a very strong relationship with the overall students' satisfaction.

Table 4.23 Relationship between skills developed and future career and overall students' satisfaction

Correlations

		H5	Overall
H5	Pearson Correlation	1	.845**
	Sig. (2-tailed)		.000
	N	220	220
Overall	Pearson Correlation	.845**	1
	Sig. (2-tailed)	.000	
	N	220	220

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

From table 4.23, Pearson correlation coefficient between the skills developed and future career variable and the overall students' satisfaction shows a very strong correlation (r=0.845) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the fifth hypothesis was valid to say that the curriculum design, innovations, and assessment variable had a very strong relationship with the overall students' satisfaction.

Table 4.24 Relationship between facilities, information and communication technology and service and overall students' satisfaction

Correlations

		H6	Overall
H6	Pearson Correlation	1	.852**
	Sig. (2-tailed)		.000
	N	220	220
Overall	Pearson Correlation	.852**	1
	Sig. (2-tailed)	.000	
	N	220	220

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

From table 4.24, Pearson correlation coefficient between the facilities, information and communication technology and service variable and the overall students' satisfaction shows a very strong correlation (r=0.852) with the alpha value or the significance of zero. The hypothesis test is reliable. Hence, the sixth hypothesis is valid to say that the facilities, information and communication technology and service variable has a very strong relationship with the overall students' satisfaction.

Table 4.25 Relationship between social life integration and overall students' satisfaction

Correlations

		H7	Overall
H7	Pearson Correlation	1	.812**
	Sig. (2-tailed)		.000
	N	220	220
Overall	Pearson Correlation	.812**	1
	Sig. (2-tailed)	.000	
	N	220	220

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

From table 4.25, Pearson correlation coefficient between the social life integration variable and the overall students' satisfaction showed a very strong correlation (r=0.812) with the alpha value or the significance of zero. The hypothesis

test was reliable. Hence, the seventh hypothesis was valid to say that the social life integration variable had a very strong relationship with the overall students' satisfaction.

Table 4.26 Relationship between pre-enrollment and value education and overall students' satisfaction

Correlations

		H8	Overall
H8	Pearson Correlation	1	.824**
	Sig. (2-tailed)		.000
	N	220	220
Overall	Pearson Correlation	.824**	1
	Sig. (2-tailed)	.000	
	N	220	220

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

From table 4.26, Pearson correlation coefficient between the pre-enrolment and value education variable and the overall students' satisfaction showed a very strong correlation (r=0.824) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the eighth hypothesis was valid to say that the pre-enrolment and values education variable had a strong relationship with the overall students' satisfaction.

4.4 Conclusion

The proposed conceptual model proposed by the author which was composed of eight variables, namely; academic staff ($\overline{X}$=3.97, SD=0.787), teaching / interactions / academic support ($\overline{X}$=3.63, SD=0.825), administrative staff ($\overline{X}$=3.62, SD=0.861), curriculum design innovation and assessment ($\overline{X}$=3.61, SD=0.865), skills developed and future careers ($\overline{X}$=3.59, SD=0.734), facilities/services/ICT ($\overline{X}$=3.48, SD=0.831), social life integration ($\overline{X}$=3.45, SD=0.899), and pre-enrolment/value education ($\overline{X}$=3.43, SD=0.848) are the successful contributing factors to the business students' satisfaction in the proposed conceptual model. Their relative weights of importance of the variables were ranked in order. The hypotheses test between each variable and the

overall satisfaction shows strong ($r \geq 0.7$) and very strong relationships ($r \geq 0.8$) with the overall business students' satisfaction. The Chi-Square test reconfirmed the reliability of the proposed model that the two-tail significance levels of the independent variables of gender, age, year of study and nationalities were less than 0.05. The eight new comprehensive variables were very important components for the university executives to manage the university's operations, especially, in the faculty of business administration.

CHAPTER 5
SUMMARY, CONCLUSION & RECOMMENDATION

This chapter summarized the conclusions and recommendations of this research in to four topics as follows: summary of the findings, conclusion and discussion and recommendations for the study.

5.1 Summary of the Findings

This thesis focused on modeling of comprehensive factors or variables contributing to the business students' satisfaction and validated the proposed conceptual model by ANOVA statistical method of hypotheses testing of the variables.

In the first part of developing the model, the comprehensive literature review from the previous researchers of the past 30 years was done to identify the key variables contributing to the business students' satisfaction. The works of these mentioned researchers appeared in the refereed research journals can be found in the reference lists. Included are the current factors of emerging technological and business innovations impacting on the higher education, such as, interactive teaching methodology and the university value or the branding of the university. The proposed conceptual model consisted of eight variables, namely: 1) academic staff; 2) administrative staff; 3) teaching, interaction, and academic support; 4) curriculum design, innovation, and assessment; 5) skills developed and future careers; 6) facilities, services, and information and communication technology; 7) social life integration; 8) pre-enrolment and value education. All these variables contributed to the overall students' satisfaction in the proposed model.

In the validation of the proposed conceptual model, an attempt was made to the proof by hypotheses testing between each variable and the business students' satisfaction.

Stamford International University was used to test of the proposed conceptual model in each of the variable and the business students' satisfaction. The sample size was 220 as calculated by Taro Yamane's formula and the survey questionnaires developed and distributed to the classes of undergraduate Business Administration

programs during the month of August 2014. The results showed that the proposed conceptual model consisted of the above eight variables successfully contributed to the business students' satisfaction with the statistically strong and very strong correlation and high reliability as shown in Table 5.1. The proposed conceptual model contributed greatly to the understanding of the university's operations by the proposed new variables. The university administrators found that the variables or the factors could be used to be the useful criteria for decision making when running the university's operations. The university administrators could prioritize the variable or the criteria and used them for setting the strategic objectives in preparing the academic budget.

Table 5.1 Summary of the Tested Hypotheses

Hypotheses	Mean	Sig.	r	Results
H_a1: Relationship between academic staff and overall students' satisfaction with the business administration programs.	3.97	0.000	.778**	Reject H_0
H_a2: Relationship between administrative staff and overall students' satisfaction of the business administration programs.	3.61	0.000	.709**	Reject H_0
H_a3: Relationship between teaching, interactions, and academic support and overall students' satisfaction of the business administration programs.	3.63	0.000	.850**	Reject H_0
H_a4: Relationship between curriculum design, innovations, and assessment and overall students' satisfaction of the business administration programs.	3.59	0.000	.854**	Reject H_0
H_a5: Relationship between skills developed and future career and overall students' satisfaction of the business administration programs.	3.62	0.000	.845**	Reject H_0
H_a6: Relationship between facilities, information and communication technology, and service and overall students' satisfaction of the business administration programs	3.48	0.000	.852**	Reject H_0
H_a7: Relationship between social life integration and overall students' satisfaction of the business administration programs.	3.45	0.000	.812**	Reject H_0

Table 5.1 Summary of the Tested Hypotheses (Cont.)

Hypotheses	Mean	Sig.	r	Results
H_a8: Relationship between pre-enrollment and university value and overall students' satisfaction of the business administration programs	3.43	0.000	.824**	Reject H_0

From Table 5.1 showed that all the null hypotheses were rejected because the value of null hypotheses significance was less than 0.05. The summary of the relationship of eight comprehensive key variables and overall students 'satisfaction were highly significant.

Analyzing the mean scores of the comprehensive key variables, we found that academic staff variable was the highest importance among the business students ($\overline{X}$=3.97). Business students liked their instructors to prepare themselves well prior to class-teaching. Teaching, interactions and academic support were the second important factor for business students ($\overline{X}$=3.63). The students were concerned with teaching methodology, subject content, and advising time. Skills developed and future careers variables were the third important factor to students' satisfaction ($\overline{X}$=3.62). The students care about salary, internship, industrial experience advice, and employment assistance, respectively. The administrative staff variable was the fourth important factor to business students' satisfaction ($\overline{X}$=3.61). The students liked their administrative staff to treat personal information with respect and confidentiality because they were concerned about their records in the transcript for job applications and/or further studies. Curriculum design, innovation and assessment were the fifth important factor to business students' satisfaction ($\overline{X}$=3.59). The students were concerned about curriculum designed to fit the industrial needs. Facilities, services, information and communication technology were the sixth important factor to business students' satisfaction ($\overline{X}$=3.48,). The students perceived the university's facilities services, internet and computer laboratory as a necessary support to their learning and extracurricular activities. Social life integration was the seventh important factor to students' satisfaction ($\overline{X}$=3.45). The activity that the students liked the most was when the university supports the students in providing internship, employment and alumni activities. In the pre-enrollment and valued education factor

which was the lowest important factor, the students liked it most when the university had a strong marketing and sale strategy ($\overline{X}$=3.43. They were most satisfied that the university had a strong marketing and sale strategy.

Analyzing the value of the correlation coefficients (r) between the comprehensive key variables and overall students 'satisfaction and the results of hypotheses testing were discussed below:

1. Relationship between academic staff service variable and overall students' satisfaction. Pearson correlation coefficient between the academic staff service variable and the overall students' satisfaction shows a strong correlation (r=0.778) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the first hypothesis was valid to say that the academic staff service variable had a strong relationship with the overall students' satisfaction.

2. Relationship between administrative staff service variable and overall students' satisfaction. Pearson correlation coefficient between the administrative staff service variable and the overall students' satisfaction showed a strong correlation (r=0.709) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the second hypothesis was valid to say that the non-academic staff service variable had a strong relationship with the overall students' satisfaction.

3. Relationship between teaching, interactions, and academic support variable and overall students' satisfaction. Pearson correlation coefficient between the teaching, interactions, and academic support variable and the overall business students' satisfaction showed a very strong correlation (r=0.850) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the third hypothesis was valid to say that the teaching, interactions and academic support variable had a strong relationship with the overall students' satisfaction.

4. Relationship between curriculum design, innovations, and assessment variable and overall students' satisfaction. Pearson correlation coefficient between the curriculum design, innovations, and assessment variable and the overall students' satisfaction showed a very strong correlation (r=0.854) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the fourth hypothesis was valid to say that the academic related variable has a strong relationship with the overall students' satisfaction.

5. Relationship between skills developed and future career variable and overall students' satisfaction. Pearson correlation coefficient between the skills developed and future career variable and the overall students' satisfaction shows a very strong correlation (r=0.845) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the fifth hypothesis was valid to say that the curriculum design, innovations, and assessment variable had a strong relationship with the overall students' satisfaction.

6. Relationship between facilities, information and communication technology, and service variable and overall students' satisfaction. Pearson correlation coefficient between the facilities, information and communication technology, and service variable and the overall students' satisfaction shows a very strong correlation (r=0.852) with the alpha value or the significance of zero. The hypothesis test is reliable. Hence, the sixth hypothesis is valid to say that the facilities, information and communication technology and service variable has a strong relationship with the overall students' satisfaction.

7. Relationship between social life integration and overall students' satisfaction. Pearson correlation coefficient between the social life integration variable and the overall students' satisfaction showed a very strong correlation (r=0.812) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the seventh hypothesis was valid to say that the social life integration variable had a strong relationship with the overall students' satisfaction.

8. Relationship between pre-enrollment and valued education variable and overall students' satisfaction. Pearson correlation coefficient between the pre-enrolment and valued education variable and the overall students' satisfaction showed a very strong correlation (r=0.824) with the alpha value or the significance of zero. The hypothesis test was reliable. Hence, the eighth hypothesis was valid to say that the pre-enrolment and values education variable had a strong relationship with the overall students' satisfaction.

5.2 Conclusion and Discussion

After the statistical test of the proposed model, it was found that the eight variables, ranked in the order of importance by the mean ($\overline{X}$) and standard deviation

(SD), as follows: 1) academic staff ($\overline{X}$=3.97, SD=0.787); 2) teaching, interaction, and academic support ($\overline{X}$=3.63, SD=0.825); 3) skills and future careers ($\overline{X}$=3.62, SD=0.861); 4) administrative staff ($\overline{X}$=3.61, SD=0.865); 5) curriculum design, innovation, and assessment ($\overline{X}$=3.59, SD=0.734); 6) facilities, services and information and communication technology ($\overline{X}$=3.48, SD=0.831); 7) social life integration ($\overline{X}$=3.45, SD=0.899); 8) pre-enrolment and value education ($\overline{X}$=3.43, SD=0.848). The overall satisfaction of the business students was good ($\overline{X}$=3.62, SD=0.681). The details of the findings and discussion can be found in Chapter 4, topic 4.2.

The inferential statistical relationship test between the variable and business students' satisfaction by the eight hypotheses showed that all variables have strong and very strong relationship with the business students' satisfaction. The results of the correlation coefficient (r) between the variable and the business students' satisfaction are as follows: 1) academic staff, strong (r=0.778, α=0); 2) administrative staff, strong (r=0.709, α=0); 3) teaching, interaction and academic support, very strong (r=0.850, α=0); 4) curriculum design, innovations and assessment , very strong (r=0.854, α=0); 5) skills developed and future careers, very strong (r=0.845,α=0); 6) facilities, services and information and communication technology, very strong (r=0.852, α=0); 7) social life integration, very strong (r=0.812, α=0); 8) pre-enrolment and value education, very strong (r=0.824, α=0). The alpha value of the significance is zero. Then, the proposed conceptual model was reliable and valid. The details of the findings and discussion can be found in topic 4.3, Chapter 4.

5.3 Recommendations for the Study

The preliminary research for the comprehensive key variables in the university's operations in making the proposed conceptual model based on numerous literature research is successfully developed. The model was validated by using the international university as an example for the test as shown in Chapter 4.

In the literature research, there were areas of studies, such as, education, higher education, marketing, business, business education and quality assurance. Examples are these research publications are Journal of Higher Education Policy and Management, Journal of Quality Assurance in Education, Journal of Education for

Business, Journal of Marketing, American Educational Research Journal, European Journal of Marketing, Parliamentary Reports on Higher Education, and so forth. The world universities are in the emerge of disruptive innovations (Chrsitensen, C. and Eyring, J.,C., 2011) by the rapidly emerged educational technologies. Most of the research publications in the recent refereed journals still contributed mainly to the traditional type of education and higher education. The author suggests that the researchers follow up more on the innovative education areas initiated by the Harvard Business School group of researchers in the Harvard Business Review. The researchers would be able to incorporate most up-to-date variables to the model, especially in the online education for quality and affordability. It may be a totally new concept or the brand new variables emerged. These literatures can be found in Harvard Business School researcher led by Dr. Clayton M. Chritensen.

In developing the new model by new variables, the researcher may find several innovative educational technologies impacting on to the variables but the contributing factors of the traditional type of education or the face to face teaching and learning style is still at the foremost contributors in the university's operations. They are worth exploring.

In the empirical studies for validating the students' satisfaction model, the main tool is still focused on the statistical analysis of hypotheses testing because it is easy to understand and can be interpreted in a robust ways. However, the Analytic Hierarchy Process (AHP) method by Thomas Saaty is also recommended, especially, in the area of the prioritization of the decision making criteria or variable used in the conceptual model. It is good for result comparison between the statistical method and the AHP method and it gives rise to more inside understanding.

The sample test of the above model can be explored into more of international universities and more of the traditional universities in any countries or even more countries. It will give better understanding of the conceptual model developed.

Finally, the author would recommend to study and explore the higher education research area to incorporate the merger of academic and business strategies in to the future model of study. It will give really the more practical perspective in managing the university's operations. The given references after the chapter are useful for further study for the relevant research.

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APPENDIX A
SURVEY QUESTIONNAIRE

QUESTIONNAIRE

Thesis Topic: Business Students' Satisfaction Measurement by Using Comprehensive Key Variables

This survey is used in partial fulfillment in Master Degree of Business Administration, Stamford International University. The survey is completely anonymous and confidential. Your responses are a critical part of my research. Please be confident that all of your answers will be treated in the strict confidence and used only for academic purpose.

Instructions: Read each question and answer it, making a check mark (√) in the providing information.

Part I: Please mark the appropriate response to indicate your own personal felling based on the following scale.

1 = strongly disagree 2 = disagree 3 = neutral 4 = agree 5 = strongly agree

	1	2	3	4	5
Academic staff					
1.Instructors have a good academic qualification					
2. Instructors have sufficient knowledge to deliver good teaching					
3. Instructors show positive attitude and sincere help towards to students					
4. Instructors provide two-way communication to students					
5. Instructors prepare themselves well prior to class-teaching					
Administrative staff					
6. Administrative staff show positive					

attitude and sincere help to students					
7. Students are treated equally by the staff					
8. Administrative staff have sufficient knowledge of the systems in helping students					
9. Administrative staff keep accurate and retrievable records					
10. Administrative staff treat personal information with respect and confidentiality					
Teaching / Interactions / academic support					
11. Teaching methodology focuses on sharing knowledge and experience between instructors and students					
12. The content proportion between theories and practices are appropriate and relevant to skills needed for industrial careers					
13. The assessment and grading policy are fair					
14. Class scheduling and logistics, technology resource and material support, and academic help desk service are useful					
15. Instructors provide appropriate time for academic help and support after classes					
Curriculum design, innovation and assessment					
16. My curriculum is relevant to industrial needs					

17. Subjects that I have learned have been updated and revised to meet the industrial needs					
18. I am aware that university has launched the new programs for students					
19. Students like the new programs					
20. In overall, students like the programs they study					
Skills developed and future careers					
21. University provides sufficient internship to develop skills needed by industry					
22. University provides industry executives to share experience with students both in classes and events					
23. Students have high expectation for future career					
24. University provides assistance to graduates for employment					
25. I believe that I will be employed with good salary after graduation					
Facilities / Services / ICT					
26. University provides appropriate facilities for student to study and learn					
27. University's facilities and classrooms provide conducive to students' learning					
28. University provides appropriate support services for students					

29. University provides appropriate internet services and computer laboratories to students					
30.Students like to hang around the university's campus					
Social life integration					
31. University empowers students by having student organization to run their own activities					
32.University provides student life service support from admission till graduation					
33. University support students in providing internship, employment and alumni activities					
Pre-enrollment/Values education					
34. University provides accuracy of admission information and orientation to meet potential students' expectation					
35. University's ad are attractive					
36. University's brand is respectable					
37. University's graduates are easily employable					
Overall students' satisfaction					
38. Overall, I am satisfied with the university					

Part II: The following personal information is necessary for validation of the questionnaire. All responses will be kept confidential. Your cooperation in providing this information will be greatly appreciated.

1. What is you gender?

□ Male □ Female

2. What is your age?

□ 19 or younger □ 24-29 year olds

□ 20-23 year olds □ Over 30 year olds

3. Who is sponsors your tuition fee?

□ Parents □ Yourself □ Others (Pleas identify.....)

4. What is your classification in university?

□ Freshman/First year □ Junior

□ Sophomore □ Senior

5. Did you begin university here or did you transfer here from another institution?

□ Started here □ Transferred from another institution

6. Where do you now live during the school year?

□ Dormitory or other campus housing

□ Residence (house, apartment, etc.)

□ Fraternity or Sorority

7. If you could start over again, would you go to same institution you are now studying?

□ Yes, definitely □ Probably yes □ Probably no

-----THANK YOU FOR YOUR COOPERATION-----

APPENDIX B
ITEM OBJECTIVE CONGRUENCY

ITEM-OBJECTIVE CONGRUENCE RATING

Thesis Topic: Business Students' Satisfaction Measurement by Using Comprehensive Key Variables

Please read carefully thorough the measuring instrument and please rate the congruence according to the scale shown below:

+ 1 = high degree of congruence
0 = low degree of congruence or uncertainty
-1 = no congruence

The Internal Consistency standard for acceptable

Value	IC
0.90 – 1.00	Excellent
0.70 – 0.89	Good
0.50 – 0.69	Fair
0.00 – 0.49	Poor

Questions	Expert 1			Expert 2			Expert 3			∑ R	IC= ∑ R / N	Results
Academic staff	**-1**	**0**	**+1**	**-1**	**0**	**+1**	**-1**	**0**	**+1**			
1.Instructors have a good academic qualification			√			√			√	3	1.0	Excellent
2. Instructors have sufficient knowledge to deliver good teaching			√			√			√	3	1.0	Excellent
3. Instructors show positive attitude and sincere help towards to students			√			√			√	3	1.0	Excellent
4. Instructors provide two-way communication to students			√			√			√	3	1.0	Excellent
5. Instructors prepare themselves well prior to class-teaching			√			√			√	3	1.0	Excellent
Administrative staff												
6. Administrative staff show positive attitude and sincere help to students			√		√				√	2	0.7	Good
7. Students are treated equally by the staff			√		√				√	2	0.7	Good

8. Administrative staff have sufficient knowledge of the systems in helping students			√			√			√	3	1.0	Excellent
9. Administrative staff keep accurate and retrievable records			√			√			√	3	1.0	Excellent
10. Administrative staff treat personal information with respect and confidentiality			√		√				√	2	0.7	Good
Teaching / Interactions / academic support												
11. Teaching methodology focuses on sharing knowledge and experience between instructors and students			√			√			√	2	0.7	Good
12. The content proportion between theories and practices are appropriate and relevant to skills needed for industrial careers			√		√				√	2	0.7	Good
13. The assessment and grading policy are fair			√			√			√	3	1.0	Excellent
14. Class scheduling and logistics, technology resource and material support, and academic help desk service are useful			√		√				√	2	0.7	Good
15. Instructors provide appropriate time for academic help and support after classes			√		√				√	2	0.7	Good

Curriculum design, innovation and assessment												
16. My curriculum is relevant to industrial needs			√			√			√	3	1.0	Excellent
17. Subjects that I have learned have been updated and revised to meet the industrial needs			√		√				√	2	0.7	Good
18. I am aware that university has launched the new programs for students			√		√				√	2	0.7	Good
19. Students like the new programs			√		√				√	2	0.7	Good
20. In overall, students like the programs they study			√		√				√	2	0.7	Good
Skills developed and future careers												
21. University provides sufficient internship to develop skills needed by industry			√			√			√	2	0.7	Good
22. University provides industry executives to share experience with students both in classes and events			√			√			√	3	1.0	Excellent
23. Students have high expectation for future career			√		√				√	2	0.7	Good
24. University provides assistance to graduates for employment			√		√				√	2	0.7	Good

25. I believe that I will be employed with good salary after graduation			√		√				√	2	0.7	Good
Facilities / Services / ICT												
26. University provides appropriate facilities for student to study and learn			√		√				√	2	0.7	Good
27. University's facilities and classrooms provide conducive to students' learning			√		√				√	2	0.7	Good
28. University provides appropriate support services for students			√			√		√		2	0.7	Good
29. University provides appropriate internet services and computer laboratories to students			√			√		√		2	0.7	Good
30.Students like to hang around the university's campus			√	√					√	2	0.7	Good
Social life integration												
31. University empowers students by having student organization to run their own activities			√		√				√	2	0.7	Good
32.University provides student life service support from admission till graduation			√		√				√	2	0.7	Good

33. University support students in providing internship, employment and alumni activities			√			√			√	3	1.0	Excellent
Pre-enrollment/Values education												
34. University provides accuracy of admission information and orientation to meet potential students' expectation			√		√				√	2	0.7	Good
35. University's ad are attractive			√		√				√	2	0.7	Good
36. University's brand is respectable			√		√				√	2	0.7	Good
37. University's graduates are easily employable			√			√			√	3	1.0	Excellent
Overall students' satisfaction												
38. Overall, I am satisfied with the university			√		√				√	2	0.7	Good

APPENDIX C
LIST OF EXPERTS

LIST OF EXPERTS

NAME	POSITION
1. Mr. Prakai Chonlahan	- Executive Committee of APEX Development PCL. - Dean, Faculty of Business Administration, St.Therasa International College. - Academic Council Member of Stamford International University.
2. Assoc.Prof.Dr.Kittipong Hungsapruek	- Former-Vice-President for Educational Service of Sukhothai Thammathirat Open University. - Lecturer, School of Law of Sukhothai Thammathirat Open University. - Academic Council Member of Stamford International University.
3. Dr.Lersan Bosuwan	- Dean of Graduate School of Applied Statistics, National Institute of Development Administration (NIDA). - Academic Council Member of Stamford International University.

BIOGRAPHY

NAME	Ms.Chunatnuthan Hengsi
DATE OF BIRHT	9 August 1983
EDUCATION	
2014	Master of Business Administration (Marketing Major) Stamford International University
2006	Business Administration (Property Valuation Management Major) Assumption University
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EMPLOYMENT	Stamford International University
ADDRESS	16 Motorway Rd., Km 2, Pravet Bangkok 10250
POSITION	Personal Assistant to President
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