

Determinants of Business Education on Student Satisfaction in Higher Education: A Case Study in Cambodia

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Abstract

The study uses an innovative management perspective to investigate the environment of higher education institutions to ensure the survival of universities in Cambodia. This has led Cambodian universities to expand their educational offerings to students in Years 2, 3 and 4. The data was collected through a Google Forms survey to facilitate and accelerate data collection. The sample of 500 students come from three higher education institution by employing multi-stage sampling technique of probability and non-probability sampling methods to ensure representation of the research population. The data were analyzed by using Confirmatory Factor Analysis (CFA) and Structural Equation Model (SEM) to investigate the impact of these determinants on students' satisfaction and loyalty, via answering 54 questions. The results showed that the three Cambodian universities perform well in terms of satisfactory conditions such as transformative quality and university image. There are four issues to which universities need to pay attention, namely, teaching methods, infrastructure facilities, learning material, and academic environment that are yet to meet the needs of students. This study contributes to the principle of innovative management in the context of Cambodian academic environment. The results help to fathom the depth of enhancing quality and institutional survival.

Keywords: Innovation, Student Satisfaction, Student Loyalty, Image, Business Education

JEL Classification Code: A10, A20, M10, M21

1. Introduction

Nowadays, higher education institutions in Cambodia and the surrounding educational institutions were experiencing a competitive environment (De Lourdes Machado, Brites, Magalhães, & Sá, 2011) in addition to developing the customer needs (Nguyen, Carrieri-Kohlman, Rankin, Slaughter, & Stulbarg, 2004). For college preparation, it was difficult

to manage these institutions from a marketing perspective because the concept of the customer is unclear. Professional literature reviews discovered the presence of diverse groups that could be classified as stakeholders of educational institutions such as students, employees, families, and society (Jiménez-Aleixandre, Bugallo Rodríguez, & Duschl, 2000). Despite this diversity, one group agreed to consider that the client was a student at the institution (Navarro, Iglesias, & Torres, 2005). Among the new classifications of this student were the following: "Adult students" (Chevaillier & Eicher, 2002). These stakeholders were often very talented professional individuals, but who wanted to pursue education (Novoa, Alves, & Canario, 2000).

The Cambodian education system had changed five cycles already. In the early days during French colonial period between 1863 and 1954, the educational organization heavily influenced Cambodian's education system (Foley, 2006). The first university was opened in 1954 to provide religious studies and Khmer language studies, Buddhist university (Rany, Zain, & Jamil, 2012). In the second stage, higher education improved significantly throughout Sang Kum Reas Niyum between 1954 and 1969 (Pov & Kawai, 2020).

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The third stage was that the country's educational system was almost destroyed in the 1970s, and had to fight the legacy of this destruction for years (Ayres, 1999). During this period, all schools and colleges were closed.

The situation got worse after the Pol Pot regime took hold of the country in 1975. Cambodian people did not need the most basic level of higher education. The teacher was in doubt. It was possible to escape the country and most people died (Chen & Tsai, 2007). Only 3,000 trained secondary school teachers remained in Cambodia after 1979 from an estimated pre-1975 total of 21,000 (Ayres, 1999). The failure of the Pol Pot regime in 1979 brought Cambodia about the fourth stage of educational development to 1993. There was reestablishment for Cambodian education system; schools and research institutes were re-opened, and Cambodian higher education resumed again (Mukherjee, Lightfoot, & Sloper, 2000). Since the first general election sponsored by the United Nations in Cambodia in 1993, there was a dramatic change in political and economic conditions, and as a result, the educational system changed.

The number of college graduates was inadequate to recover from a civil war from 1970 to 1993. And the last stage was the Paris Agreement in 23 October 1993 bringing an independent market and wealth signal to Cambodia. Since economics had reformed, there was an increase of foreign investment, demand for human resources grew. In this regards, education service had been invested heavily (Bray, 1996). Cambodian education during that period was led by privatization. Ahead of 1996, there were only state-run universities, and the response rate received was very low because of insufficient budget and less talented professors. Cambodian higher education administration was directly controlled by local centers, departments and unrelated local offices. The "education flow" was controlled by the General Administration (Un & Sok, 2018). Nowadays, there were two departments: The Higher Education Department (DHE), which was responsible for joint and undergraduate programs, and the Scientific Research Department, which oversees graduates and research graduate programs. "Technology and Occupation" of the Technical Director and Vocational Training by MoLVT (Un & Sok, 2016).

2. Literature Review

2.1. Behaviorism Theory

Behaviorism was related to human behavior that could be perceived and evaluated. Behavioral learning theory emphasized behavioral change in respect to stimulus-response associations to learner stimuli. A behavior driven by stimulation each person chose one response instead of another due to previous coordination and emotional motivations presenting when decision was made (Parkay & Hass, 2000).

Primarily, behaviorism was related to observable and measurable human behavior aspects (Zhou & Brown, 2015). Behaviorist learning theories emphasized behavior changes caused stimulus-response relations made by the students (Weegar & Pacis, 2012). Behavior was directed by stimuli. According to past conditioning and emotional drove existing at the moment of the action, an individual selected one response on behalf (Scriven, 1956).

2.2. Theory of Teaching and Learning

The teaching theory was created by the author (Verzat, O'Shea, & Jore, 2017). The theoretical education of teaching and learning and user's learning through teaching and learning activities. A user's learning activities were determined by three structures: student factor, teacher factor, and learning environment. In addition, learning outcomes are determined by three structures: student factors, learning environment and teaching and learning activities. If students needed to prepare for lifelong learning, they should be given the opportunity to develop their ability to control the learning as they progressed through the higher education process (Nicol & Macfarlane-Dick, 2006). The structure of self-control indicated the level at which students could define their views on anticipating, stimulation, and behavior in the process of learning (Pintrich & Zusho, 2002). Similarly, organizations need to understand the skills of their employees from a research and real-world perspective because sometimes organizations are not ready to share their knowledge and skills (Syed et al., 2021).

2.3. Theory of Service Quality in Education

Numerous studies of service quality had strengthened the field of service marketing over the past 30 years (Berry & Parasuraman, 2004). Most of these studies focused on the dimension of service quality in cultural industries and enterprises (Lewis & Mitchell, 1990). These studies had developed specific measures or scales to measure quality. Among the most widely used metrics was SERVQUAL, which had formulated the concept of the expectation-disruption paradigm (EDP) (Jiang, Klein, & Carr, 2002). The dimension of service quality was by industry (Lee, Lim, & Kim, 2017), by service type (Nadiri, Kandampully, & Hussain, 2009), by culture (Sultan & Wong, 2010), and even by service providers or companies in the same industry. Since low retention rates affected institutional funds (Rowley, 2003), student recruitment and retention had moved to the top of most college agendas due to the desire to increase the student number in link with the government goals. Therefore, student satisfaction was a very important issue for universities and administration (Douglas, McClelland, & Davies, 2008). The elements of an organizational effort to develop a good corporate culture to achieve organizational performance (Kawiana, Dewi, Hartati, Setini, & Asih, 2021).

3. Hypotheses

3.1. Teaching Methods

Faculty members should seek effective teaching methods and self-assessments, including appropriate lesson plans, to ensure that students were learning more effectively and interacting with satisfied students to learn (Klug, Bruder, Kelava, Spiel, & Schmitz, 2013). This study built students' trust in the school's skills and abilities with business-oriented teaching methods in business schools. At the same time, the continuous interaction between the faculty and the student made it possible to grasp the students' potential skills and abilities, making the learning process clearer, and the faculty was no longer simply disseminating information to students (Shea & Parayitam, 2019).

H1: There is a significant relationship between teaching methods and student satisfaction.

3.2. Infrastructure Facilities

The infrastructure facilities related to the physical characteristics of the institution (Ford, Howard, & Harris, 1999). Many articles in infrastructure facilities were called tangible assets (Bhalla & Das, 2018). Studies conducted by Bhalla and Das (2018) showed that infrastructure facilities had an encouraging and significant impact on student satisfaction, and physical infrastructure should not be overlooked when trying to improve student satisfaction and learning opportunities, examining that as one of the elements of higher education institution selection, we reviewed elements of higher education institution student selection and admissions opportunities. Gruber, Fuß, and Gläser-Zikuda (2010) reviewed the composition of higher education institution student selection and admissions opportunities as one of the components of higher education institution selection.

H2: There is a significant relationship between infrastructure facilities and student satisfaction.

3.3. Learning Materials

The learning material was related to the availability of modern laboratories, equipment and others and up to date technology introduced innovation in education and research. Kaur and Bhalla (2018) also claimed that classroom facility and these facilities, which had a positive relationship with student satisfaction. The expected impact between satisfaction with classroom material and classroom effort had slightly diminished (Santini, Ladeira, Sampaio, & da Silva Costa, 2017).

H3: There is a significant relationship between learning materials and student satisfaction.

3.4. Academic Environment

It used the HESQUAL level suggested by Teeroovengadum, Nunkoo, Gronroos, Kamalanabhan, and Seebaluck (2019) to review the composition of higher education institution selection and admissions opportunities as one of the components of higher education institution selection. One of the components of higher education institution selection is a review of the components of higher education institution selection and admissions opportunities (Annamdevula & Bellamkonda, 2016). Grady, Hussaini, and Abdullah (2005) observed that the main drivers of student satisfaction in the context of higher education institutions were academic and non-academic achievements, program-related issues, accessibility and reputation.

H4: There is a significant relationship between academic environment and student satisfaction.

3.5. Transformative Quality

The primary constraint of traditional education was that the concept of quality of service was neglected in most studies of quality of service and student satisfaction assessments and the loyalty model of higher education institutions (Teeroovengadum et al., 2019). The important goals of higher education institutions were to transform learners through education (Leibowitz, Bozalek, Van Schalkwyk, & Winberg, 2015). This was why researchers focused on the need for higher education institutions to focus on the concepts of quality, service and change (Nash, Zachariah, Nitschmann, & Psencik, 2007).

H5: There is a significant relationship between transformative quality and student satisfaction.

3.6. Transformative Quality

First, awareness of service quality was improved, and changes could lead to increased awareness of student image and satisfaction and increased perceived value for institutions (Teeroovengadum et al., 2019). The importance of the relationship seemed to be an industry characteristic. However, in the situation of developed schooling, quality of facility, change (technical) was a good image predictor (Teeroovengadum et al., 2019). However, the individual characteristics of an entrepreneur can be divided into background, psychological and environmental characteristics (Lee & Kim, 2019).

H6: There is a significant relationship between transformative quality and university image.

3.7. University Image

Research in this area was generally heavily influenced by the marketing literature focusing on the quality of Higher

Education Services (HESQUAL) and related concepts such as student satisfaction, perceptions, values, and visualization (Teeroovengadum et al., 2019).

Thus, competition might be fierce due to institutional attempts to build images in higher education systems (Stimac & Simic, 2012). Faculty also affected student satisfaction, and student loyalty (Doña-Toledo, Luque-Martínez, & Del Barrio-García, 2017). The effect of the image on the stability of the image was also tested (Chandra, Hafni, Chandra, Purwati, & Chandra, 2019). According to four researchers, images had a huge impact on loyalty (Kandampully & Suhartanto, 2000). Furthermore, satisfaction, image and perception values positively impacted loyalty to each higher education institution (Teeroovengadum et al., 2019). The university imagery affected satisfaction, and loyalty (Doña-Toledo et al., 2017). Unfortunately, only a minority of educations was shown to confirm the relationship between quality of service, image of the university, satisfaction, and loyalty (Chandra et al., 2019).

H7: *There is a significant relationship between university image and student satisfaction.*

H8: *There is a significant relationship between university image and student loyalty.*

3.8. Student Satisfaction

The confident impact of the satisfaction on the loyalty (Ismanova, 2019). However, the positive and important impact on student satisfaction on student loyalty (Chandra et al., 2019). Another study conducted by Alotaibi, Weheba, and Toy (2016) showed that a positive and significant impact of the quality of service on student satisfaction in developing

student loyalty. Raposo, Alves, & Duarte (2009) also pointed out that undergraduate allegiance was important to the satisfaction. Customer satisfaction referred to the measure that determines the level of satisfaction or dissatisfaction of a customer after purchasing a company's products, services and capabilities (Widagdo & Roz, 2021).

H9: *There is a significant relationship between student satisfaction and student loyalty.*

4. Research Methods and Materials

4.1. Research Framework

The current study adapted service quality in education to create the conceptual research model (Figure 1). The service quality in education to adapt innovative management is used as dependent variable in this study. Due to the possibility of duality between the independent variables, a stepwise multivariate regression analysis was performed to evaluate the degree to which each independent variable helped explain the variance of the dependent variables (Guimaraes, 2011).

The independent variable in this study was student satisfaction. (In terms of the education method, facilities, infrastructure, academic learning media, service quality, university change, and image) and university image (in terms of service quality, change, and student satisfaction). Understanding what a mediator did in mediation and the effects of such behavior on settlements, relationships, and other outcomes were not a new question in education, mediation, or the real world (Borton & Paul, 2018). This study aimed to study further examines the undergraduate business students who are studying in year 2, year 3, and year 4 in

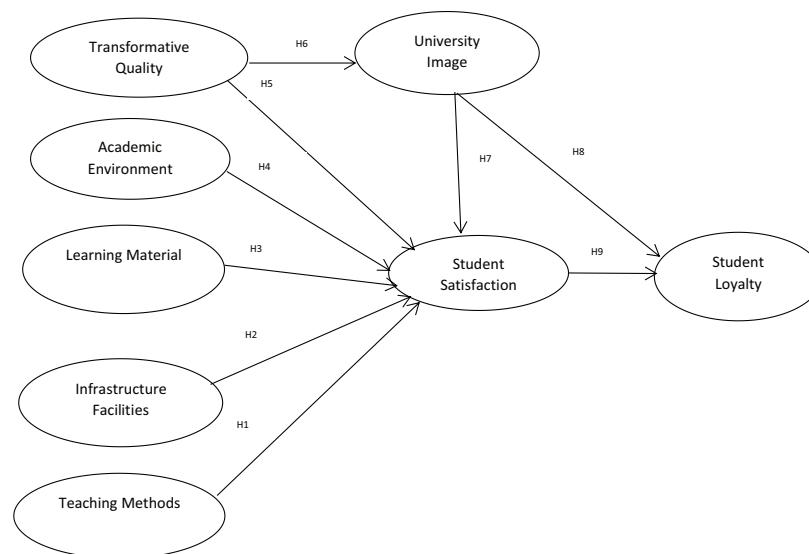


Figure 1: The conceptual Framework

three Cambodian universities. The conceptual framework of this study was developed based on eight variables. There were three types of variables in this study; independent, mediator, and dependent variable such as Teaching Method (TM), Infrastructure Facilities (IF), Learning Material (LM), Academic Environment (AE), Transformative Quality (TQ), University Image (IM), Student Satisfaction (SS), and Student Loyalty (SL).

4.2. Methodology

The researcher has adapted the quantitative method to conduct this research. The questionnaires were prepared and sent through google form via Telegrams. And it was distributed in three Cambodian Universities. The target respondents were highlighted as year 2, year3, and year 4, studying in field of business administration. The collected data will be studied on the persuasive factors influencing student loyalty. The questionnaire was divided into three parts. First part refers to the screening questions to select the relevant target respondents. The second part are a five-point Likert scale questions that represent to undergraduate business students, all variables will be measured by the range of 1 represents “strongly disagree” to 5 represents “strongly agree”. The demographic information of target respondents will be analyzed in the third part of the questionnaire.

4.3. Population and Sample Size

The target population made up of people who share actions on certain factors (Clark-Carter, 2010). Ali, Zhou, Hussain, Nair, and Ragavan (2016) mentioned that the target population was a complete group of relevant components involved in the test because it had information on researcher designed to collect. Also, Rawung (2013) specified that the target population was the person, records, or events that were the main focus of the study. Lillah, Arnolds, and Stofile (2013) specified that the target population was defined as an entire group of elements with a common set of properties. Taherdoost (2016) indicated that the target population was a group of people whom the researcher was interested in

researching. The population for this research consists of business students in three Cambodian Universities, who are 18 years old and above in their 2nd, 3rd, and 4th years in those higher education institutions, living in Cambodia and learning in part of undergraduate students with business education. The researcher has used A-priori Sample size Calculator for Structural Equation Models (SEM) from Danielsooper’s website to refer the recommended minimum sample size (Soper, n.d.). There were set up as 8 latent variables and 49 observed variables with a probability level of 0.05. The minimum sample size as recommended is 444 respondents. After screening all the responses, the qualified respondents for the study were finalized at 500.

4.4. Sampling Technique

A multi-stage sampling technique was employed: purposive sampling methods were used to select two private universities (Western University based in Phnom Penh City and Western University based in Kampong Cham Province) and one public university in Cambodia for the survey, conducted between September and November 2020. The two private universities involved in the study have been in business since 2003, thus their structures might have been well formed and their experience. The oldest public university (National University of Management) was selected because it was the first business-age university, and popular in business studies in Cambodia.

Stratified sampling method was used in the second stage to select key stakeholders as data sources. The questionnaires were requested to the university administration to create the student Telegram groups with the three higher education institutions (National University of Management, Western University Phnom Penh, and Western University Kampong Cham Branch), and then link of the Google Forms survey was copied and sent into student those Telegram groups. Foundation year students were not included in the sample due to lack of experience because college satisfaction and loyalty were not evaluated (Azoury, Daou, & El Khoury, 2013).

Table 1 showed that the researcher selected the three universities in Cambodia such as National University of

Table 1: Population and Sample Size by Cambodian Universities

Universities	Approximate Population Size	Percentage (%)	Proportionate Sample Size
National University of Management	11,845	77	386
Western University Phnom Penh	1,755	12	58
Western University Kampong Cham Branch	1,725	11	56
Total	15,325	100	500

Source: Constructed by author (Based on MoEYS-2019: Education Congress Report, March, Phnom Penh, Cambodia).

Management, Western University in Phnom Penh, and Western University in Kampong Cham Branch in the academic year 2019–2020. Furthermore, National University of Management has a total of 11,845 students, the researcher selected 386 students. At Western University in Phnom Penh has a total of 1,755 students, the researcher selected 58 students, and Western University Kampong Cham Branch has a total of 1,725 students, the researcher also selected 56 students.

Purposive sampling was used in the final stage to select business students from three Cambodian Universities to constitute the sample size because even in each business student. Additionally, the researcher selected to represent as the target population were Cambodian students who had been learning in year 2, year 3, and year 4 in the field of business department from three higher education institutions in Cambodia. Purposive sampling in this instance enabled us to choose people whose views are relevant to the research topic (Jankowicz, 1995). The key informant technique of purposive sampling was also used to select people with specialized knowledge about the issues in question for interviewing (Tongco, 2007).

5. Results and Discussion

5.1. Demographic Factors

In this study, a valid questionnaire of 500 respondents returned 29.40% and 70.60% for men and women. For the age of respondents, 95% were 18–25 years old, 5% were 26–33 years old (some students fail the high school). In the second year, 22.20%, in the third year, 41.60%, and in the fourth year, 36.20% were undergraduate students. In addition, all students from three universities: 38.80% in accounting, 10.60% in marketing, 8.60% in business, 42% in finance and banking. Furthermore, 77% of students were collected from National University of Management, 12% of students were collected from Western University Phnom

Penh amount, and 11% of students were collected from Western University Kampong Cham Branch.

5.2. Confirmatory Factor Analysis (CFA)

CFA was used prior for analyzing the measurement model with structural equation model (SEM). The result of CFA as shown in Table 2 indicated that all items in each variable are significant and have factor loading to prove discriminant validity as illustrated in Table 3. This part was to study confirmatory factor analysis (CFA) solution, the model that causal factors could affect the impact of innovative management on the undergraduate student satisfaction with business education in a case study at three Cambodian Universities. The purpose of this CFA was to investigate the adequacy of entries for the number of elements and dimensions they were constructing in this empirical model (Bollen, 1989). Factor loadings are higher than 0.50 and *p*-value of lower than 0.05. Furthermore, aligning with the recommendation from Fornell and Larcker (1981), the composite reliability is greater than the cut-off point of 0.7 and the average variance extracted was higher than the cut-off point of 0.5. All the estimates are positive.

This research also employed the First Orders Factor Analysis Technique with the estimation of weight factor determining the goodness of fit indices. Moreover, the research was considered by the Chi-square statistics, GFI (Goodness of fit index), RMSEA (Root mean square error of approximation), CFI (Comparative fit indices) and TLI (Tucker-Lewis Index) consisting of 8 measurement models: Teaching Methods, Infrastructure Facilities, Learning Material, Academic Environment, Transformative Quality, University Image, Student Satisfaction, and Student Loyalty for this study as illustrated in Table 4.

Traditionally, an omnibus cut-off point of 0.90 had been recommended for GFI, but model studies showed that cut

Table 2: Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Teaching Method (TM)	Navarro et al. (2005)	5	0.826	0.680–0.807	0.862	0.557
Infrastructure Facilities (IF)	Kaur and Bhalla (2018)	9	0.870	0.536–0.798	0.856	0.503
Learning Material (LM)	Kaur and Bhalla (2018)	5	0.799	0.578–0.767	0.845	0.524
Academic Environment (AE)	Ali et al. (2016)	9	0.935	0.761–0.851	0.945	0.657
Transformative Service Qualities (TQ)	Teeroovengadum et al. (2019)	6	0.875	0.598–0.876	0.915	0.645
University Image (IM)	Teeroovengadum et al. (2019)	5	0.903	0.824–0.872	0.925	0.713
Student Satisfaction (SS)	Teeroovengadum et al. (2019)	6	0.938	0.881–0.910	0.958	0.794
Student Loyalty (SL)	Teeroovengadum et al. (2019)	4	0.816	0.690–0.843	0.851	0.591

Note: CR = Composite Reliability, AVE = Average Variance Extracted.

Table 3: Discriminant Validity

Factor Correlations								
Variables	TM	IF	LM	AE	TQ	IM	SS	SL
TM	0.75							
IF	0.47	0.70						
LM	0.29	0.47	0.77					
AE	0.71	0.31	0.41	0.81				
TQ	0.63	0.36	0.40	0.75	0.96			
IM	0.56	0.32	0.41	0.69	0.76	0.85		
SS	0.56	0.27	0.41	0.68	0.77	0.78	0.87	
SL	0.57	0.38	0.40	0.66	0.66	0.66	0.70	0.76

Note: The diagonally listed value is the AVE square roots of the variables.

Table 4: Goodness of Fit

Index	Acceptable Values	Values
CMIN/DF	< 3.00 Hair, Black, Babin, Anderson, and Tatham (2009)	2.042
RMSEA	< 0.08 MacCallum, Browne, and Sugawara (1996)	0.046
GFI	≥ 0.80 Filippini, Forza, and Vinelli (1998), Greenspoon and Saklofske (1998)	0.858
AGFI	≥ 0.80 Filippini et al. (1998)	0.834
CFI	≥ 0.90 Byrne (2013)Barbara M, Hair, Risher, Sarstedt, and Ringle (2019)	0.950
TLI	≥ 0.90 Vandenberg and Scarpello (1994)	0.941
NFI	> 0.90 Arbuckle (1995)	0.901
RMR	< 0.05 Hair et al. (2009)	0.039

above 0.95 were more appropriate when loads, coefficients, and sample sizes are low (Shevlin & Miles, 1998). Therefore, this index had become less popular in recent years and it had been suggested that one should not use an index related to GFI (Sharma, Verma, & Pathare, 2005). AGFI, which adjusts GFI to the degree of freedom with a very saturated version with up reduces fit (Tabachnick, Fidell, & Ullman, 2007).

From Table 4: CMIN/DF = The ratio of the chi-square value to degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, CFI = comparative fit index, TLI = Tucker-Lewis index, NFI = normalized fit index, and RMR = root mean square residual CMIN/DF = 2.042, GFI = 0.858, AGFI = 0.834, CFI = 0.950, TLI = 0.941, NFI = 0.901, RMSEA = 0.046, RMR = 0.039.

5.3. Structural Equation Model (SEM)

The data revealed SEM analysis on the causal factors that could affect innovative management on the undergraduate

student satisfaction with business education: A case study at three Cambodian universities. Chi-square was a traditional measure for assessing the fit of the entire model and estimating the magnitude of the error between the sample and the fitted covariance matrix (Hu & Bentler, 1999).

A good model yielded insignificant results at the 0.05 threshold (Bollen, 1989). The results were within acceptable threshold levels and consistent with the concepts by Hair et al. (2019); MacCallum et al. (1996); Filippini et al. (1998); Byrne (2013); Vandenberg and Scarpello (1994); Arbuckle (1995) by Chi-Square (χ^2/df) < 3, P -value < 0.05, GFI ≥ 0.80, AGFI ≥ 0.80, TLI > 0.90, CFI > 0.90, RMSEA < 0.08. Furthermore, the results of the SEM analysis on the causal factors that could affect innovative management on the undergraduate student satisfaction with business education: A case study at three Cambodian universities were demonstrated relatively a reasonable fit of the eight indexes of model to the data on the basis of a number of fit statistics.

Chi-Square (χ^2/df) = 2236.249/1082 or 2.067, consistent with the concept by Hair et al. (2019), Goodness-of-fit

statistic (GFI) = 0.841, Adjusted Goodness-of-fit statistic (AGFI) = 0.820 Comparative Fit Index (CFI) = 0.946, Tucker Lewis Index (TLI) = 0.941, Root Mean Square Error of Approximation (RMSEA) 0.046.

The results showed SEM analysis with the causal factors that could affect the innovative management on the undergraduate student satisfaction with business education: A case study at three Cambodian universities. The results strongly suggested that each set of items represents a single underlying construct and provided evidence for discriminate validity or fit. Overall, the data indicated good suitability.

5.4. Research Hypothesis Testing Results

For Hypothesis 1, the standardized path coefficient between Teaching Methods and Student Satisfaction was 0.046 (t -value = 0.950). Therefore, there is no significant relationship between teaching methods and student satisfaction. Consequently, H1 was not supported. For Hypothesis 2, the standardized coefficient between Infrastructure Facilities and Student Satisfaction was -0.094 (t -value = -1.297). Therefore, there is no significant relationship between Infrastructure Facilities and Student Satisfaction. Consequently, H2 was not supported. For Hypothesis 3, the standardized coefficient between Learning Material and Student Satisfaction was 0.108 (t -value = 1.483). Therefore, there is no significant relationship between Learning Material and Student Satisfaction. Consequently, H3 was not supported. For Hypothesis 4, the standardized coefficient between Academic Environment and Student Satisfaction was 0.078 (t -value = 1.463). Therefore, there is no significant relationship between Academic Environment and Student Satisfaction. Consequently, H4 was not supported. For Hypothesis 5, the standardized coefficient between Transformative Service Qualities and Student Satisfaction

was 0.343 (t -value = 5.364*). Therefore, there is significant relationship between Transformative Service Qualities and Student Satisfaction. Consequently, H5 was supported. For Hypothesis 6, the standardized coefficient between Transformative Service Qualities and University Image was 0.810 (t -value = 18.532*). Therefore, there is significant relationship between Transformative Service Qualities and University Image. Consequently, H6 was supported. For Hypothesis 7, the standardized coefficient between University Image and Student Satisfaction was 0.467 (t -value = 8.925*). Therefore, there is significant relationship between University Image and Student Satisfaction. Consequently, H7 was supported. For Hypothesis 8, the standardized coefficient between University Image and Student Loyalty was 0.315 (t -value = 5.061*). Therefore, there is significant relationship between University Image and Student Loyalty. Consequently, H8 was supported. For Hypothesis 9, the standardized coefficient between Student Satisfaction and Student Loyalty was 0.585 (t -value = 9.097*). Therefore, there is significant relationship between Student Satisfaction and Student Loyalty. Consequently, H9 was supported. This is summarized in Table 5.

Moreover, for Direct, Indirect and Total effects of the relationship between variables, the result could be explained as: University Image: The significant direct effect of Transformative Quality (TQ) on University Image was 0.810. In terms of the total effect, Transformative Quality (TQ) was the most important variable that significantly influenced on University Image. Student Satisfaction: The significant direct effect of Teaching Methods (TM) on Student Satisfaction (SS) was 0.046. The significant direct effect of Infrastructure Facilities (IF) on Student Satisfaction (SS) was -0.094 . The significant direct effect of Learning Material (LM) on Student Satisfaction (SS) was 0.108. The significant direct effect of Academic Environment (AE) on

Table 5: Hypothesis Result of the Structural Model

Hypotheses	Paths	Standardized Path Coefficients (β)	S.E.	T-Value > 1.98	Tests Result
H1	TM \rightarrow SS	0.046	0.082	0.950	Not Supported
H2	IF \rightarrow SS	-0.094	0.097	-1.297	Not Supported
H3	LM \rightarrow SS	0.108	0.107	1.483	Not Supported
H4	AE \rightarrow SS	0.078	0.050	1.463	Not Supported
H5	TQ \rightarrow SS	0.343	0.050	5.364*	Supported
H6	TQ \rightarrow IM	0.810	0.050	18.532*	Supported
H7	IM \rightarrow SS	0.467	0.050	8.925*	Supported
H8	IM \rightarrow SL	0.315	0.050	5.061*	Supported
H9	SS \rightarrow SL	0.585	0.060	9.097*	Supported

Note: * $p < 0.05$.

Student Satisfaction (SS) was 0.078. The significant direct effect of Transformative Quality (TQ) on Student Satisfaction (SS) was 0.721. The significant direct effect of University Image (IM) on Student Satisfaction (SS) was 0.467. There was no indirect effect found from the analysis, so the direct effects were equal to the total effects. In terms of the total effect, Transformative Quality, University Image were the most important variables that significantly influenced Student Satisfaction. Student Loyalty: The significant direct effect of University Image (IM) on Student Loyalty (SL) was 0.588. The significant direct effect of Student Satisfaction (SS) on Student Loyalty (SL) was 0.585. Whereas there was some indirect effect as shown so that the significant indirect effect of Teaching Methods on Student Loyalty was 0.027. The significant indirect effect of Infrastructure Facilities on Student Loyalty was -0.055 . The significant indirect effect of Learning Material on Student Loyalty was 0.063. The significant indirect effect of Academic Environment on Student Loyalty was 0.045. The significant indirect effect of Transformative Quality on Student Loyalty was 0.677.

6. Conclusions and Limitations

According to the survey, the three universities have done well in terms of satisfactory conditions such as transformative quality, university image with student satisfaction, and student loyalty. However, there are still some conditions that the university has not been able to meet well, which requires the university to pay more attention to the students to be more qualified for job markets after graduating from these universities.

In fact, the results of the student survey showed that there are four issues that universities need to pay attention to, such as teaching methods, infrastructure facilities, learning material, and academic environment that have not yet been able to meet the needs of students.

First, teaching method was still incomplete due to the concerns of students on some areas, such as the theory obtained, but there was no practical application, some teaching materials did not update, some subjects could not help students to be able to complete the market needs, some teachers have not fully taught their skills.

Second, the universities must also take care of satisfying the students, such as providing sufficient study materials, parking for professors and students, the classroom must be well-equipped and comfortable, there must be cars for the internships, there must be a waiting room for appropriate students or guardians, must be dormitories for students from the provinces, there must be mixed hot and cold-water tanks for students as appropriate.

Third, learning material was a concern of students such as the libraries were not updated with materials related to subjects, the students were not informed regularly about

updated library collection, audio-visual aid were not available for the classroom teaching, and the sufficient computers were not available in the colleges also.

Fourth, the management team must concentrate on the academic environment as the instructors had not answered the questions relating to the course content. Instructors did not show a sincere interest in solving the student's problem. Instructors did not show the communicate well and provide the feedback about student's progress, the hand-out and documents were not provided adequately by the instructors.

The study makes five recommendations for future studies as well as university administrators and management teams. In the first recommendation, teaching method, infrastructure facilities, learning material, and academic environment had not a significant relationship with student satisfaction; however, management team has to develop professors' teaching methodology and put more investment on facilities, material, and academic environment to improve the quality of teaching and learning.

The second recommendation goes to professors. University management teams should increase the number of full-time professors, to be responsible for social services and research rather than actual teaching only.

The third recommendation takes recognition into consideration. University management teams should take actions to improve their graduate degree recognition, nationally, regionally and internationally through updating their curriculum, improving teaching and learning deliveries respectively.

Next, university management teams should build partnership with flag-ship local universities, regional and international ones to involve in their strategic plan to take advantages of curriculum improvement, student and staff mobility. These would increase university image, ultimately.

Another recommendation is for transforming the existing library to e-library. E-library would actually provide highly reliable and adequate updated resources to meet the need of students and academic staff. Also, it may help generate more income to the higher education institutions to provide e-library service to local people and researchers besides their own students and staff.

Finally, it recommends the establishment of a research center to draw public attention and take exponential benefits. Research center, advancing the body of knowledge, would provide necessary interdisciplinary research environment and produce collaborations with national and international knowledge bodies fostering academical reputation.

Study the limitations of techniques used in data analysis. This study draws conclusions about the causal relationship between variables using SEM techniques and limited cross-sectional studies that can explain cause and effect. First, this finding is valid for the 500 samples selected from the three

mentioned universities. It cannot be interpreted as a sole indicator for Cambodian student loyalty to their universities as a whole; therefore, over time, long-term studies are needed to ascertain the consequences and provide insight into the cause. In this regards, future research should increase the samples and differentiate the higher education institutions across the country.

Secondly, as this study is an analysis of quantitative research, some insights may not be answered. This study should be conducted in a qualitative manner that can gain more valuable insights through further discussions with the president, vice president, and director of graduate school, and limited in terms of time and budget. Future research papers recommend testing with a larger questionnaire to ensure that the results are effective and efficient.

Additionally, future research papers should include additional variables to understand other factors that influence student loyalty. As far as it concerns, the survey method can apply more qualitative skills along with open-ended questions to understand and add value to satisfying students.

Finally, a study should be conducted for other universities in Phnom Penh or throughout Cambodia where this study was done in, to understand further and draw comparisons among those variables. Other avenues of research that could further this study may include interviewing professors and university administrators to cross check their responsiveness to the findings of this study.

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