Applying A Binary Logistic Regression Model To Analyze The Educational Service Quality In The Context Of Globalization. Evidence From Vietnam

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ABSTRACT

This research aims to apply binary logistic regression to analyze the educational service quality in the context of globalization. Survey data was collected from 550 students are studying at the University of FPT, Industrial University of Ho Chi Minh City, and Gia Dinh Information Technology University in Vietnam. The research model was proposed from the studies of the university service quality. The reliability and validity of the scale were tested Exploratory factor analysis (EFA). The analysis results of binary logistic regression showed that service quality had relationships with Approach Aspect, Facility and Ewom.

Key words: binary logistic regression model, service quality, student

1. INTRODUCTION

Higher education is being driven towards commercial competition as the impact of economic forces caused by the development of global education markets (Rachmadhani et al., 2018). The globalization of business has been embraced by the higher education sector in which education is seen as a service that could be marketed worldwide. Universities and other institutions of higher education have to compete with each other to attract high-quality students and academic staff (Nuraryo et al., 2018). The increasing globalization of universities is sometimes credited to the viewpoint of individuals with many changes and difficulties that the educational sector has to face. The differences in opinion by school leaders and various commentators agree that competition between higher education institutions has intensified over the last few years (C. Chen and Moses Olabhele, 2018; Plewa et al., 2016). Education has a huge role in the development of a country. The progress of education in a country partly symbolizes the general growth of that country (C. Chen and Moses Olabhele, 2018). The Higher Education plays an important role in the society: It is essential partners of the knowledge creation and knowledge exchange networks, catalysts of innovation, suppliers of tangible outputs of research results, and institutions providing consulting and advisory services. Universities are supposed to foster progress, build social capital, prepare students for outside realities, provide access to knowledge,
extend the bounds of justice and, therefore, contribute to the creation of a democratic and sustainable society. However, the increasingly competitive and dynamic educational environments bring up numerous challenges, such as declining enrolments and growing competition (Dzimińska et al., 2018). Higher education in Vietnam has grown rapidly, which only began 1976 now reaching 105,000 students in 180 domestic universities and 212 programs with different joint training forms (bachelor's and master’s degrees), in partnership with many reputable global universities and educational institutions (P.-Y. Chen et al., 2017).

The study of Rachmadhani et al. (2018) indicated the higher competition in the context of the commercialization of higher education among State University and Private University in Indonesia. It becomes a threat and challenges faced by State University in recruiting new students. A clearer understanding of why and how students choose universities was needed to develop the brand awareness enhancement strategies of State University. This paper aimed to identify the factors that influence student’s decision of university choice. The combination of HEdPERF dimensions and brand awareness indicators were used to develop the variables. These findings resulted that there were six factors in choosing higher education, including academics, facilities, campus life, reputation, industry linkage, and access.

The research of Mustaffa et al. (2019) was conducted to determine the perceptions of international students towards service quality at Malaysian public universities according to the world geographical regions, namely Asia, Africa, and the Middle East. The descriptive results of mean values revealed that the Asian students were more satisfied with the service offered by Malaysian public universities due to similarities in terms of culture and values. The authors developed HEdPERF presented a higher level of internal consistency through factors such as Academic Aspects, Programs Issue, Non-Academic Aspects, and Access.

Although the educational service quality of a university is becoming a necessary part of higher education in globalization (C. Chen and Moses Olabhele, 2018), the extent of the paper is a matter of contention, due largely to a lack of consensus regarding the relationship of others. Therefore, the paper on building a service quality model based on the standpoint of university's students to be able to contribute to the understanding of the university's service quality in a competitive environment and development higher education system in Vietnam.
2. LITERATURE REVIEW

2.1. Academic aspect (ACA)

Academics, related to the importance of offering wide-ranging and reputable academic programs and teaching staff (Rachmadhani et al., 2018). These factors are solely the responsibilities of academics (Abdullah, 2006). Instructors are a key factor in creating a university reputation and service quality. The teaching staff was the educational backgrounds and achievement of the instructors in various research and community services (Rachmadhani et al., 2018). According to research of Plewa et al. (2016), instructor who are competent in the courses they teach, open to feedback to improve my student experience, provide sufficient feedback about my progress, care about my experience as a student, provide support I need to help me succeed academically, encourage interaction with them and understand my student needs.

Summarily, academic aspects indicate that the instructors have the knowledge to answer student’s questions relating to the course content, deal with students in a caring and courteous manner, are never too busy to respond to student’s request for assistance, show a sincere interest in solving, show positive attitude towards student, communicate well in the classroom, provide feedback about student’s progress, allocate sufficient and convenient time for consultation, and are highly educated and experience (Mustaffa et al., 2019).

2.2. Program aspect (PRO)

This factor emphasizes the importance of offering wide-ranging and reputable academic programs/specializations with flexible structure and syllabus (Abdullah, 2006). Program in higher education should have diversity, accreditation, and uniqueness (Khanna et al., 2014; Plewa et al., 2016; Rachmadhani et al., 2018; Woodall et al., 2014).

The findings of Plewa et al. (2016) showed programs at university being visually appealing, programs establish linking between relevant theory and real life, programs assessment tasks requiring the learner to put in student best effort, programs at university increase learner’s interest in the subject matter and courses being designed to make use of latest technology/tools. According to Mustaffa et al. (2019) indicates the university offers a wide range of programs with various specializations and programs with flexible syllabus and structure.

2.3. Facilities (FAC)

Facilities, related to the soft and hard infrastructure that would support students on their learning process (Rachmadhani et al., 2018). Facilities are related to the infrastructure provided by the university. Academic facilities are the facility that supports the learning process, such as
classrooms, libraries, and laboratories. Health center is the medical clinics provided for students. Sports facilities are the facilities that support sports activities, such as field, sports equipment and swimming pool. Lifestyle facilitators are defined as the facilities that support the basic needs of students, such as ATM center and print shop. While, students dormitory is the house provided for the 1-st year or underprivileged students (Rachmadhani et al., 2018).

According to the research of Plewa et al. (2016), Facilities modified as university's physical facilities being visually appealing, university providing excellent self-study facilities, excellent learning facilities and providing up-to-date university equipment (classrooms, library, etc.).

Lastly, some authors found that facilities were associated with Academic facilities, Health center, Sports facilities, Lifestyle facilitators and Students dormitory (Rachmadhani et al., 2018; Woodall et al., 2014).

2.4. Approach (APP)

Approach, related to the approachability, ease of contact, availability, and convenience given by the higher education. They include such as: Location of the university, Fees of the program, and Transportation links (Rachmadhani et al., 2018). Finally, the research of (Mustaffa et al., 2019) express access includes students are given a fair amount of freedom, the staff respects information, the staff ensures that they are easily contacted by telephone, email and social network, the university operates excellent counseling services, the university encourages and promotes the setting up of student’s union, the university values feedback from students to improve service performance, and the university has a standardized and simple service delivery procedure (Mustaffa et al., 2019).

2.5. Non-academic aspects (NACA)

Non-academic aspects consist of items that are essential to enable students to fulfill their study obligations, and it relates to duties carried out by non-academic staff (Abdullah, 2006). The study of (Mustaffa et al., 2019) said that non-academic aspects related to problems that administrative staff showed a sincere interest in solving it, provided caring and individual attention by administrative staff, deal with Inquiries/complaints efficiently and promptly, Administrative staff is never too busy to respond to a request for assistance, Administration offices keep accurate and retrievable records, When the staff promises to do something by a certain time, they do so, The opening hours of administrative offices are personally convenient for me, Administrative staff show a positive work attitude towards students, Administrative staff communicates well with students, Administrative staff has good knowledge of the
systems/procedures, I feel secure and confident in my dealings with this university, and The university provides services within reasonable/expected period.

2.6. University Reputation (REP)

Corporate reputation was considered differently based on different research fields. In business, corporate reputation was considered as a reflection of a company's past actions. In strategic management, corporate reputation was seen as a unique intangible asset, hard to imitate (Agarwal et al., 2015). Fombrun's (1996) study was the first to systematically identify corporate reputation and was cited most extensively (Walker, 2010).

Reputation was based on the perception of an organization and as such was subjective. It defined the summative experience that key stakeholder or constituent groups had with an organization. As previously mentioned, the term reputation was commonly used without a clear explanation, operationalization or a unique definition. One of the reasons for this lack of universal definition was the number of scientific disciplines that focus on reputation, such as strategic management, economics, marketing, market research, sociology, psychology and public relation (Verčič et al., 2016).

One of the most commonly used definitions was one by Fombrun and Van Riel, (1997), in which the defined corporate reputation as a perceptive representation of an organization’s previous behaviors as well as an estimate of its future behaviors, i.e. the universal appeal that an organization had for its key constituents in comparison with others (Fombrun and Van Riel, 1997). A later extension of this definition added that reputation was an estimate of the way an organization is experienced both, internally, among employees and externally, among other stakeholder groups, within its competitive and institutional surroundings (Verčič et al., 2016).

Vidaver-Cohen(2007) suggested a conceptual framework for studying business school reputation. The proposed concept draws from the Reputation Institute and as major predictors of corporate reputation offers organizational performance, quality of products and services, leadership characteristics, management procedures, corporate social responsibility procedures, workplace climate and approach to innovations. Each of the mentioned predictors is defined through a set of reputational attributes which operationalize each of the dimensions. Vidaver-Cohen uses described dimensions to outline a framework for business reputation which includes: level of performance, products, services, leadership, management, workplace climate, corporate social responsibility, and innovativeness. Described dimensions were used as the building block for this study. By identifying the strengths and weaknesses of a business school’s capability to satisfy the expectations of its stakeholders, it should be possible to determine the best way to
channel resources and get the best possible results. Further, by testing the reputation in each stakeholder group separately, it is possible to potentially improve programs (Verčič et al., 2016).

Reputation was an acute awareness of the individual organization. It was formed over a long period of understanding and evaluation of the success of that organization (Balmer et al., 1997). It was the assessment made by different people (insiders and outsiders) about the organization’s ability to meet its expectations over time (Pérez and Torres, 2017). Alessandri et al. (2006) had demonstrated a relationship between the university reputation that was favored with academic performance, external performance and emotional engagement. (Nguyen and LeBlanc, 2001) investigated the role of institutional image and institutional reputation in the formation of customer loyalty. The results indicated that the degree of loyalty had a tendency to be higher when perceptions of both institutional reputation and service quality are favorable (Nguyen and LeBlanc, 2001). Reputation, related to the professional image projection of higher education that impacted by the media influence, track record of alumnus and achievement of the university at both national and international scope (Rachmadhani et al., 2018).

Reputation referred to the total impression that people constructed in their mind about something or someone (C. Chen and Moses Olabhele, 2018). Reputation involved the beliefs, attitudes, stereotypes, ideas, appropriate behaviors and impressions that a person had of an object, a person, or an organization, while University Reputation was a complex construct based on the perception of the public or personnel of an organization that made a differentiating and comparative assessment of its characteristics (C. Chen and Moses Olabhele, 2018; Delgado-márquez et al., 2013).

This status was formed by individuals or by the public as a result of their interpretation of the information or disinformation of a university (C. Chen and Moses Olabhele, 2018). University Reputation was the shared knowledge that people had about a university and how it should operate. Also, University Reputation could be seen as perceived external prestige, corporate reputation, and identity (C. Chen and Moses Olabhele, 2018; Pérez and Torres, 2017).

There were three factors creating corporate reputation as the study of (Keh and Xie, 2009) such as the focal company was a highly-regarded company the focal company was a successful company and the focal company is a well-established company.

From a business perspective, corporate reputation could be defined simply as an overall evaluation of the extent to which an organization was substantially good or bad (Heffernan et al., 2018), or as a collective assessment of an organization’s ability to provide valued outcomes to representative group of stakeholders (Heffernan et al., 2018). A number of studies had found a
relationship between corporate reputation and organizational identification, among both employees and consumers (Su et al., 2016). Individuals were inclined to identify with organizations they perceived as having favorable reputations as in doing so they could satisfy their self-esteem and self-enhancement needs (Heffernan et al., 2018). (Fombrun et al., 2004) claimed that corporate reputation was one of the key antecedents of consumer organization identification.

According to Heffernan et al.(2018), in an educational context characterized by an increasingly markets system, the reputation of universities, built upon strong brands, had become an important factor in determining institutional competitiveness and positioning. Further, university reputation had been shown to influence students’ supportive behavioral intentions, loyalty, and student satisfaction. Within the higher education, student selection of higher education programs had often been linked to the perceived quality and reputation of the institution awarding the qualification. In other words, the (Heffernan et al., 2018) study only examined students’ perceptions of the foreign partner, and interferences were made using a qualitative case study methodology. But in reality, students also consider the quality of the local institution that will actually deliver the program, and they make judgments about the quality of premises, learning technology and equipment, as well as the teaching staff. For example, a student would perceive very differently a large, well-resourced federal university offering a foreign franchised program and a small private institute occupying one floor in an office block offering the same program.

University reputation referred as having a good reputation within the community, employers have positive things to say about the university, being a well-respected university, having heard positive things about university and university's reputation positively influences the value of my degree (Plewa et al., 2016).

Summarily, university reputation was understood as: having good prestige within the community, being a well-respected university and positively influencing value of student’s degree.

2.7. EWOM

E-WOM refers to any good or bad testimonials and comments made by consumers about products, services, or organizations that will then become open to the public through the online medium (Suki and Suki, 2019). This research operationalized positive E-WOM based on elements defined and verified in prior research (Suki and Suki, 2019). Consumers tend to participate in E-WOM when they are: willing to recommend this university service and its other
services to others; usually say positive things about the university and its services; and will tell their family and friends to participate in a university subscription. If they disagree with these above-mentioned statements, they are considered to have a low probability of giving E-WOM or sharing their experience with others in terms of their university subscriptions. Hence, for Saudi high school students to make decisions about higher education, the information provided through EWOM should be perceived as relevant, clear and easily understood so that it can aid students in the selection of the prospective university (Balroo and Saleh, 2019).

2.8. Service quality in education (Y)

The concept of service quality has received tremendous attention in service research 30 years ago. Generally, service quality is defined as a customers’ evaluation of an entity’s overall excellence or superiority (Mustaffa et al., 2019). SERVQUAL (service quality) scale was developed and extensively used to gauge quality attributes in multi-services settings (A Parasuraman et al., 2002; Anantharanthan Parasuraman et al., 1985; Ananthanarayanan Parasuraman et al., 1988). SERVQUAL consists of 22 indicators representing five dimensions, namely reliability, responsiveness, assurance, empathy, and tangibles. Despite its popularity, SERVQUAL has been subjected to a number of theoretical and operational criticisms (Buttle, 1996). Several researchers have emphasized the problems with SERVQUAL scale, including ambiguous conceptual definition, the unclear theoretical justification of expectations in measuring service quality, and the redundancy of definition between service quality and satisfaction/dissatisfaction (Cronin Jr and Taylor, 1994; Sultan and Wong, 2010; Teas, 1993).

Finally, SERVQUAL in higher education has good service quality, the satisfaction of learners and trust service (Abdullah, 2006; Dursun et al., 2013; Gronroos, 1990; Handi, 2002; Mustaffa et al., 2019; Anantharanthan Parasuraman et al., 1985; Stodnick and Rogers, 2008).

3. RESEARCH METHODOLOGY

The research methodology was implemented through two steps: qualitative research and quantitative research. Qualitative research was conducted with a sample of 52 people. We divided into two groups to discuss observations and variables, and adjusted them to be suitable in the context of education in Vietnam. The third group was 22 lectures at faculty of business administration in Industrial University of HCM City (1 professor, 3 Ph.D., 18 masters). The second group were 30 graduated individuals in Vietnam and haveintentions to enroll in the master program in the future. There are 11 people working at HDBank, BIDV Bank, HCM City Institute for Computational Science and Technology, Petec Trading & Investment Corporation, Kho Bac Nha Nuoc Tri Ton - An Giang, Sacombank,
THIEN KIM Co., Ltd, MEKONGPETRO, CHI CUC THUE CU CHI, AGRIBANK TAY SAI GON, and MB-BANK. Others are unemployment.

First period 1 was tested on a small sample to discover the flaws of the questionnaire. The questionnaire was written by Vietnamese. The second period of the official research was carried out as soon as the question was edited from the test results. Respondents were selected by convenient methods with a sample size of 550 students but there were only 493 people filling the correct form. There were 126 males and 367 females in this survey. Their university years were from first to fourth. They were studying at three universities in Vietnam. The questionnaire answered by respondents was the main tool to collect data. The questionnaire contained questions about their university and year. The survey was conducted on March 29, 2019. Data processing and statistical analysis software were used by SPSS 20. The EFA was used to test the scale of research concepts.

The Binary Logistic regression model was used to investigate the model as follow:

\[
\ln(\text{Odds}) = \ln\left(\frac{P(Y=0)}{P(Y=1)}\right) = \beta_0 + \beta_1\text{ACA} + \beta_2\text{PRO} + \beta_3\text{FAC} + \beta_4\text{APP} + \beta_5\text{NACA} + \beta_6\text{REP} + \beta_7\text{EWOM}
\]

\[P(Y=1) = P_0: \text{My university offers good service quality.}\]
\[P(Y=0) = 1 - P_0: \text{My university does not offer good service quality.}\]

4. RESULTS

4.1. Exploratory Factor Analysis (EFA)

KMO coefficient 0.912 is in the range [0.5; 1], P-value is 0.000 less than 0.05 so independent variables are correlated with dependent variables in the model and it has statistical significance. Eigenvalues coefficient 1.217 better than 1 represents the variability explained by each factor, then the factor drawn is significant. Total variance extracted: Extraction Sums of Squared Loadings (Cumulative%) = 61.094% > 50%. This proves that 61.094% of data variance is explained by 5 factors. After EFA analysis, the item left the following factors:

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>APP5</td>
<td>0.825</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APP7</td>
<td>0.804</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APP4</td>
<td>0.760</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APP6</td>
<td>0.737</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APP2</td>
<td>0.708</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APP3</td>
<td>0.607</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NACA2</td>
<td>0.382</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Factor APP has items as APP2, APP3, APP4, APP5, APP6, APP7, NACA2. Factor ACA has items as ACA1, ACA2, ACA3, ACA4, ACA5, ACA6. Factor FAC has items as FAC1, FAC2, FAC3, FAC4. Factor EWOM has items as EWOM1, EWOM2, EWOM3, EWOM4, REP3. Factor PRO has items as PRO1, PRO3, PRO4, FAC6 in table 4.1. We give the remaining variables in the regression analysis.

4.2. Wald Test

Table 4.2: Variables in the Equation

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>APP</td>
<td>-0.315</td>
<td>0.124</td>
<td>6.485</td>
<td>1</td>
<td>0.011</td>
</tr>
<tr>
<td>ACA</td>
<td>-0.048</td>
<td>0.124</td>
<td>0.152</td>
<td>1</td>
<td>0.697</td>
</tr>
<tr>
<td>FAC</td>
<td>0.208</td>
<td>0.108</td>
<td>3.707</td>
<td>1</td>
<td>0.054</td>
</tr>
<tr>
<td>EWOM</td>
<td>0.436</td>
<td>0.110</td>
<td>15.611</td>
<td>1</td>
<td>0.000</td>
</tr>
<tr>
<td>PRO</td>
<td>-0.037</td>
<td>0.122</td>
<td>0.091</td>
<td>1</td>
<td>0.763</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.134</td>
<td>0.657</td>
<td>0.042</td>
<td>1</td>
<td>0.838</td>
</tr>
</tbody>
</table>

The independent variables ACA, PRO with a significance level greater than 0.05 should be excluded from the research model. Particularly FAC accepted at the 6% (P-value=0.054) significance level 94% reliability in table 4.2. We continue to give the remaining variables in the analysis.

Table 4.3: Variables in the Equation 2
The independent variables APP, EWOM with P-value less than 0.05 should accept the research model. Particularly FAC accepted at the 6% significance level in table 4.3.

4.3. Test Research Model

4.3.1. Omnibus Test

Table 4.4: Omnibus Tests of Model Coefficients

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Chi-square</th>
<th>df</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step</td>
<td>27.429</td>
<td>3</td>
<td>0.000</td>
</tr>
<tr>
<td>Block</td>
<td>27.429</td>
<td>3</td>
<td>0.000</td>
</tr>
<tr>
<td>Model</td>
<td>27.429</td>
<td>3</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The test results assume the relevance of the general model with significance level ≤ 0.05. Thus the general model shows that the correlation between dependent variables and independent variables makes sense with the 95% confidence interval in table 4.4.

4.3.1. Bootstrapping

Table 4.5: Bootstrap for Variables in the Equation

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>Bootstrap (94%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bias</td>
<td>Std. Error</td>
</tr>
<tr>
<td>APP</td>
<td>-0.335</td>
<td>-0.007</td>
</tr>
<tr>
<td>FAC</td>
<td>0.195</td>
<td>0.001</td>
</tr>
<tr>
<td>EWOM</td>
<td>0.423</td>
<td>0.008</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.367</td>
<td>0.007</td>
</tr>
</tbody>
</table>

The bootstrap test is conducted to retest the model. Bootstrap is an alternative sampling method in which the original sample plays a crowd role. The Bootstrap method is performed with a replicate sample of N times. The estimated results from the N samples are averaged and these values tend to be close to the overall estimate. The smaller the difference between the estimated average value of Bootstrap and the estimated model with the original sample, the more reliable the model estimates. With this research model, the Bootstrap test with a 94% confidence level and 1000 repetition level with the CR coefficient of all variables is less
than 2, showing that the model is suitable for the research data. Therefore, the independent variables APP, FAC, and EWOM have a linear relationship with the dependent variable Y in table 4.5.

4.4. Predicting test of accuracy of the model

Table 4.6: Classification Table

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>114</td>
</tr>
<tr>
<td>Y</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>331</td>
<td></td>
</tr>
<tr>
<td>Overall Percentage</td>
<td></td>
<td>74.5</td>
</tr>
</tbody>
</table>

Having 18 students (14 + 4) who did not offer good university service quality, the model correctly predicted 18, so the correct rate was 10.8%. Having 445 students (114 + 331) answered that they offered good university service quality, the model correctly predicted 445, the correct forecast rate was 98.8%. The correct forecast rate for the entire model is 74.5% in table 4.6.

4.5. Discussion

Table 4.7: Expected results of regression coefficients

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>P-value</th>
<th>e^B</th>
<th>( P_1 = (P_0 \times e^B) / [1 - P_0 (1 - e^B)] )</th>
<th>( P_0 = 10% )</th>
</tr>
</thead>
<tbody>
<tr>
<td>APP</td>
<td>-0.335</td>
<td>0.118</td>
<td>8.096</td>
<td>1</td>
<td>0.004</td>
<td>0.715</td>
<td>7.4%</td>
<td></td>
</tr>
<tr>
<td>FAC</td>
<td>0.195</td>
<td>0.104</td>
<td>3.541</td>
<td>1</td>
<td>0.060</td>
<td>1.215</td>
<td>11.9%</td>
<td></td>
</tr>
<tr>
<td>EWOM</td>
<td>0.423</td>
<td>0.107</td>
<td>15.497</td>
<td>1</td>
<td>0.000</td>
<td>1.527</td>
<td>14.5%</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.367</td>
<td>0.476</td>
<td>0.596</td>
<td>1</td>
<td>0.440</td>
<td>0.693</td>
<td>7.1%</td>
<td></td>
</tr>
</tbody>
</table>

The results of the regression model in table 4.7 show that the variables are statistically significant because it is less than 0.06. Therefore, the independent variables APP, FAC, and EWOM have a linear relationship with the dependent variable Y and the accepted model.

The empirical research model: \( \text{LnY} = -0.367 - 0.335\text{APP} + 0.195 \text{FAC} + 0.423 \text{EWOM} \)

Factor APP: If the probability of students offering good university service quality is 10%, when the other factors are constant, if the student adds 1% more APP to school staff in the context of integration, then offering good university service quality is reduced to 7.4% (down 2.6% from the initial probability).

Factor FAC: If the probability of students offering good university service quality is 10%, when the other factors are constant, if the university increases by 1% of the university's facilities factor in the context of integration, then offering good university service quality
increases. university service quality increased to 11.9% (increased 1.9% compared to the initial probability).

**Factor EWOM:** If the student's probability of offering good university service quality is 10% when the other factors are constant if EWOM of the learner increases by 1% in the context of integration, the university service quality increased to 14.5% (increased by 4.5% compared to the initial probability).

**5. CONCLUSION**

As a result of data analysis in results and discussion, three hypotheses were accepted. Four hypotheses were unsupported. Three components contributed importantly to the university service quality in order of importance: (1) EWOM aspect, (2) Approach, (3) Facilities.

**5.1. Implication**

Service quality was very important to the university such as competitive advantage, satisfactory and met society's expectations and the only reputation was responsible for maintenance throughout the whole organization. Research results indicate that Academic aspects, Program, Facilities, Non-academic aspects, and Approach are important factors for students when determining the service and three of the five elements have a strong influence on the reputation of organizations.

Students were attracted by superficial factors and convenience. Aspect played an important role in effect the university service quality and reputation. The school should be interested in the standardization of procedures for providing services ranging from recruitment, admissions, course registration procedures, tuition, lookup points in the learning process, and so on...

The second was the approach aspect. It was not effective in university reputation and the third important in the university service quality so the universities should treat students equally and with respect by the staff, respect students, ensure that students are easily contacted by telephone, email, and social networks, operates excellent counseling services, encourage and promotes the setting up of student’s union, improve service performance, and have a standardized and simple service delivery procedure.

The last factor was the facilities. They were the first important in reputation and the second important in the university service quality. The universities should their physical facilities are visually appealing, provides excellent self-study facilities, provide up-to-date university equipment, have excellent learning facilities, have information system (online and offline) is effective, have full of practical equipment, and have a database (learning materials, research data…) to serve to learn and studying well.

**5.2. Limitations and suggestions for further research**
Limitation of research has four hypotheses in the model to be canceled so we would try to complete next researches.

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REFERENCES


Dzimińska, M., Fijalkowska, J., & Sulkowski, L. (2018). Trust-Based Quality Culture Conceptual Model for Higher Education Institutions. Sustainability, 10(8), 2599. doi: http://dx.doi.org/10.3390/su10082599


