EMPIRICAL STUDY ON STUDENT SATISFACTION AS MEDIATOR BETWEEN SERVICE QUALITY AND STUDENT LOYALTY IN TVET HLIs

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Abstract
Recent studies discovered that there is a direct relationship between service quality and loyalty. However, very limited studies in the context of higher TVET and furthermore the investigation of mediation effect between the two constructs. The purpose of this research is to investigate the mediating effect of student satisfaction on the relationship between service quality and student loyalty in the context of higher TVET. This is quantitative method of research applying survey questionnaire for data collection. Based on purposive sampling, 431 questionnaires have been distributed to ten TVET HLIs. 398 of completed questionnaires have been analyzed using Smart PLS 3.0. The PLS-SEM analysis shows that there is a direct and significant relationship between the service quality and student loyalty. Mediating test has been conducted and it is discovered that, there is a partial mediation of student satisfaction between service quality and loyalty. Further research work is suggested to explore more coverage of TVET HLIs in Malaysia for better generalization of the result.

Index Terms - Service Quality, Student Satisfaction, Student Loyalty

INTRODUCTION
Technical and Vocational Education and Training (TVET) stream is getting more attention by the government. 11th Malaysia Plan reported that the quality and quantity of skilled workers through TVET institution required improvement. This is to align with the higher expectation from the industries [1]. Based on Malaysia Education Blueprint (MEB) it is expected that the number of student enrolment in TVET stream to be increased to 650,000 by 2025 [2]. Based on latest development, higher education institutions is consider very competitive. There are many providers and players in the market. At the same time TVET is facing several challenges such as it has been labelled as ‘unattractive pathway’ for continuing study, service quality, fragmented delivery and teaching staff competencies [3].

Some of the issues could have affected the level of service quality provided to the student as customer to the institutions. In addition, low service quality will effects the level of student satisfaction. Ensuring student satisfaction is very important since it will effect student loyalty. Loyal student will retain until completion of the study [4], spread positive word of mouth and encourage others to join the university [5].

The current literatures are more focus on the antecedence of student satisfaction and the relationship between service quality and satisfaction [6]. The studies that integrating service quality, satisfaction and loyalty in one framework with mediating effect is found inadequately been investigated in the context of TVET. Thus, the main aim of this study is to measure the mediation effect of student satisfaction on the relationship between service quality and student loyalty. To measure the mediation effect, the researcher must first assess the existence of direct effect between the Latent Variable (LV). If there is not direct effect between the LV, the mediation effect is unable to be measured [7]. Thus, there are four main objective of this research. First, to measure the relationship between service quality and customer satisfaction. Second, to measure the relationship between service quality and student loyalty. Third, to measure the relationship between student satisfaction. Fourth, to measure the mediating effect of student satisfaction on the relationship between service quality and student loyalty.

LITERATURE REVIEW
A. Service Quality
One organization could evaluate their level of service provided to the customer through certain set of evaluation criterias [8]. The most common and widely applied model of service quality is SERVQUAL consisted of tangible, reliability, assurance, responsiveness and empathy. Tangible refers to the appearance of physical facilities, equipments, personnel and communication materials. Reliability is refered to the ability to perform the promised service dependably and accurately. Responsiveness is the willingness to help customers and provide prompt service. Assurance is refered to the knowledge and courtesy of employees and their ability to convey trust and confidence and empathy is refered to caring, individualized attention to the customers [9]. The application of SERVQUAL is used in many industries to assess their level of service from the perspective of customer.

In the context of higher education, there is an increasing attention by the management of organization in ensuring that all services provided to the students are managed and well organized to enhance the student’s perceived service quality delivery [10]. The discussion about service quality in education emphasize on quality related to the main stakeholders which is student. In the context of this study, the source of response toward service quality is student.

B. Loyalty
While loyalty is referred to the outcomes of good relationship with the customer and maintaining their satisfaction. Loyal customer will spend more and stay around longer [11]. Creating customer loyalty is not easy and maintain it is required a lot of
efforts as well. Thus, building customer loyalty and managing customer relation must be performed meticulously[12]. In the context of higher education the customer is referred to the student, thus loyalty is referred to the student loyalty toward the universities.

Student is the major customer for education and thus it is important to retain and ensure their loyalty. Student loyalty can be relate to the process of making a student’s feels committed to the universities and will remain until graduation[13]. A loyal student will support marketing of the institution by spreading positive word of mouth. Thus, institutions should find the areas which contribute more in student loyalty[14]. In other literature, the impact of student loyalty is viewed from age of continue the program, encourage and recommend others[15].

C. Student Satisfaction

From the marketing perspective, customer satisfaction is considered to be the key concept to success in business organization. It is an individual state of pleasure or disappointment resulting from the performance of service[16]. Customer satisfaction is important because it provides marketers and business owners with a metric that they can use to manage and improve their business. Thus it is important to identify the factors that contribute to the customer satisfaction[17]. Customer satisfaction can be viewed from the perspective of functional customer satisfaction (FCS), Technical Customer Satisfaction (TCS) and Overall Customer Satisfaction (OCS). This study adapted OCS which is measuring overall or cumulative student satisfaction on product or service rendered.

Student satisfaction is becoming more important factor in the success of an educational institution and it will effect the reputation of institution and prospect enrollment of student[18]. Higher education institutes need to satisfy several customers and stakeholders such as students, alumni, parents, employer and government. However, the student being the main customer[19]. This is important to gain feedback from the student. Past studies shows that main factors is determining student satisfaction is service quality[20]. Reference[21] conducted studies in technical institution revealed that, there are nine areas that effect satisfaction which is campus environment, facilities, equipment, teaching staff, syllabus, training delivery, support staff services, library and the management of the institutes.

Reference [22] highlighted that, there is a strong positive relationship between customer satisfaction and loyalty. It also regarded as significant component in the customer retention and part of key strategies of business organization to gain competitiveness in the market.

Based on the past literature review, the following conceptual framework and hypotheses is developed. There are three latent constructs which is Service Quality (SQ), Student Satisfaction (SS) and Student Loyalty (SL). Conceptual framework is depicted in figure 1.

![Conceptual model effect of SQ and CI on SS and SL in higher TVET universities](image1)

Figure 1. Conceptual model the effect of SQ and CI on SS and SL in higher TVET universities.

Based on conceptual model, four hypotheses has been developed as below:

H1: There is direct and significant relationship between Service Quality and Student Satisfaction in higher TVET universities.

H2: There is direct and significant relationship between Service Quality and Student Loyalty in higher TVET universities.

H3: Student Satisfaction mediates the relationship between Service Quality and Student Loyalty.

METHODOLOGY

This is quantitative research whereby survey questionnaire is the most appropriate tools for data collection. There are 4 major part in the questionnaire. Likert scale from 1-7 used to indicate respondent’s agreement level for part B,C and D. 1 represent strongly disagree and 7 is represent strongly agree. The details of questionnaire structure is as per table 1:

<table>
<thead>
<tr>
<th>Part</th>
<th>Section</th>
<th>Details</th>
<th>Total Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Demographic</td>
<td>Campus, program name and level, gender, race, age, CGPA, choice.</td>
<td>8</td>
</tr>
<tr>
<td>B</td>
<td>Service Quality</td>
<td>Tangible, Reliability, Assurance, Responsiveness, Empathy</td>
<td>31</td>
</tr>
<tr>
<td>C</td>
<td>Student Satisfaction</td>
<td>Overall Satisfaction</td>
<td>7</td>
</tr>
<tr>
<td>D</td>
<td>Student Loyalty</td>
<td>Retention Recommendation</td>
<td>6</td>
</tr>
</tbody>
</table>

Indicators for construct SQ, SS and SL is adapted from previous research where the reliability and validity is been carried out. Nevertheless, pilot study is also been conducted in this research. Prior to pilot test, the survey questionnaire was sent to six expert professor in the field of service marketing and quality from various universities. This process called Expert Opinion Assessment (EOA). The content of questionnaire has been validated by EOA panel. Recommendations has been considered and questionnaire is improvised prior pilot test. The purpose of pilot test is to correct if there is any inadequacy prior to full data collection. Range of number of respondent for pilot test is between 25-100[23]. In this study 60 final year student has been selected. Full data collection has been carried out. Using stratified sampling method, 431 questionnaires has been distributed to 10 universities. 398 completed questionnaires has been analyzed using SPSS and Smart PLS 3.0.

DATA ANALYSIS AND FINDINGS

Pilot Test - Pilot test result shows that all construct achieved Cronbach Alpha above 0.7[24]. Thus, it is concluded that the survey instrument is reliable for full data collection. Table 2.0 exhibit the result of Pilot Test.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Pilot Test, N=60</th>
<th>Cronbach Alpha (CA) results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part B - Service Quality (SQ)</td>
<td>0.851</td>
<td>Overall SQ = 0.943</td>
</tr>
<tr>
<td></td>
<td>0.840</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.804</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.743</td>
<td></td>
</tr>
</tbody>
</table>
Research Hypotheses findings – there are four hypotheses that has been developed and tested using PLS-SEM. The following are result of the analysis in accordance to the list of hypotheses:

H₁: There is direct and significant relationship between Service Quality and Student Satisfaction in higher TVET universities.

Based on data analysis using Smart PLS through bootstrapping procedure found that the path coefficient values is 0.472. While the T-value (indicator of significant) is 9.493 which is higher than the threshold of 1.96 (at 95% confident level).

Table 4. Relationship between Service Quality and Student Satisfaction.

<table>
<thead>
<tr>
<th>Research Hypotheses</th>
<th>Path Coefficient</th>
<th>T-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₁</td>
<td>0.472</td>
<td>9.493</td>
</tr>
</tbody>
</table>

H₂: There is a direct and significant relationship between Service Quality and Student Loyalty in higher TVET universities.

Based on data analysis using Smart PLS through bootstrapping procedure found that the path coefficient values is 0.120. While the T-value (indicator of significant) is 1.981 which is higher than the threshold of 1.96 (at 95% confident level).

Table 5. Relationship between Service Quality and Student Loyalty.

<table>
<thead>
<tr>
<th>Research Hypotheses</th>
<th>Path Coefficient</th>
<th>T-Statistic</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₂</td>
<td>0.120</td>
<td>1.981</td>
<td>Supportd.</td>
</tr>
</tbody>
</table>

H₃: The path coefficient values is 0.483. While the T-value (indicator of significant) is 8.071 which is higher than the threshold of 1.96 (at 95% confident level).

Table 6. Relationship between Service Quality and Student Loyalty.

<table>
<thead>
<tr>
<th>Research Hypotheses</th>
<th>Path Coefficient</th>
<th>T-Statistic</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₃</td>
<td>0.483</td>
<td>8.071</td>
<td>Supported</td>
</tr>
</tbody>
</table>

H₄: Student Satisfaction mediates the relationship between Service Quality and Student Loyalty.

The result of mediation effect can be viewed from specific indirect effect in Smart PLS 3.0. The bootstrapping result is as per consolidated in table 4.15. Bootstrapping analysis result has shown that indirect effect, β = 0.483, is significant with t-values of 10.462 and p-value 0.00. Thus, we can concluded that the mediation effect are statistically significant. Table 7 exhibit the mediation test result.

Table 7. Mediation test result.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Std Beta</th>
<th>Std Error</th>
<th>t-Value</th>
<th>p-Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Quality (SQ) -&gt; Student Satisfaction (SS) -&gt; Student Loyalty (SL)</td>
<td>0.48</td>
<td>0.04</td>
<td>10.4</td>
<td>0.00</td>
<td>Supported</td>
</tr>
</tbody>
</table>

In the next step, Variance Accounted For (VAF) is calculated. The main purpose of VAF calculation is to assess the level of mediation effect and type of mediator. The VAF is calculated manually by dividing the total indirect effect with the direct effect values (total indirect effect A*B/ A*B + C).

By doing this, size of the indirect effect in relation to the total effect will be able to be determined. VAF value below 20% indicate no mediation, VAF value 20% to 80% indicate partial mediation and VAF value above 80% indicate full mediation [26]. Type of mediation as depicted in table 8.
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CONCLUSION
Based on this study, in the context of higher TVET universities, it was found that there is a positive relationship between Service Quality, Student Satisfaction and Student Loyalty. It also found that Student Satisfaction partially mediate the relationship between Service Quality and Student Loyalty. Based on the finding all four research objective and hypotheses are answered. It is recommended that the scope of study to be extended to different level of TVET institutions. In addition, to consider the moderating effect on the relationship between student satisfaction and loyalty.

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REFERENCES

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