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 labeled ast '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 student 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 Qualioty
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 referred 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 agle of continue the program, encourage and recommend others [15].

C. Student Satisfaction

From the marketing perspective, customer satisfaction is considered to 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.
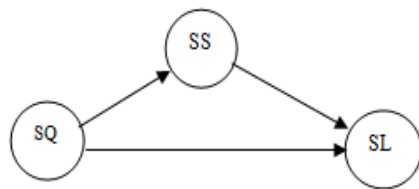

Figure 1. Conceptual model the effect of SQ and CI on SS and SL in higher TVET universities.

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

H$_1$: There is direct and significant relationship between Service Quality and Student Satisfaction in higher TVET universities

H$_2$: There is a direct and significant relationship between Service Quality and Student Loyalty in higher TVET universities.

H$_3$: There is a direct and significant relationship between Student Satisfaction and Student Loyalty in higher TVET universities.

H$_4$: 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 1. Survey questionnaire structure

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

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 between25-100 [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 2. Pilot Test result

Construct	Pilot Tets , N=60Cronbach Alpha (CA) results	
Part B - Service Quality (SQ)	0.851	Overall SQ = 0.943
	0.840	
	0.804	
	0.743	

	0.789	
Part C: Student Satisfaction (SS)	0.927	Overall SS =0.927
Part D : Student Loyalty	0.885	Overall SL= 0.910
	0.826	

Respondent Profile - 398 good and completed questionnaire has been analyzed using SPSS. Respondent profile is depicted is table 3.

Table 3. Respondent's profile

Level	Number	Percentage
Degree	337	84.7%
Diploma	61	15.3%
Gender	**Number**	**Percentage**
Male	218	54.8%
Female	179	45.0%
Races	**Number**	**Percentage**
Malay	378	95.0%
Chinese	10	2.5%
Indian	3	0.8%
Others	7	1.8%
Ages	**Number**	**Percentage**
18-20	91	22.9%
21-23	258	64.8%
24-26	46	11.6%
>26	3	0.8%
CGPA	**Number**	**Percentage**
Above 3.5	103	25.9%
3.00-3.49	164	41.2%
2.00-2.99	129	32.4%
<2.0	2	0.6%

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:

H_1: 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.

Research Hypotheses	Path	Path Coefficient	T-Statistic
H_1	Service Quality → Student Satisfaction	0.472	9.493

H_2 : 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

Research Hypotheses	Path	Path Coefficient	T-Statistic	Result
H_2	Service Quality → Student Loyalty	0.120	1.981	Supported.

H_3: There is a direct and significant relationship between Student Satisfaction and Student Loyalty in higher TVET universities.

Based on data analysis using Smart PLS through bootstrapping procedure found that the path coefficient values is 0.261. While the T-value (indicator of significant) is 4.416 which is higher than the threshold of 1.96 (at 95% confident level).

Table 6. Relationship between Service Quality and Student Loyalty.

Hypotheses	Path	Path Coefficient	T-Statistic	Result
H_3	Student Satisfaction -> Student Loyalty	0.483	8.071	Supported

H_4: 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

Hypotheses	Std Beta	Std Error	t-Value	p-value	Decision
Service Quality (SQ) -> **Student Satisfaction (SS)** -> Student Loyalty (SL)	0.483	0.046	10.462	0.000	Supported

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.

Table 8. Type of mediation

Mediators	Path	VAF	%	Type of Mediation
Student Satisfaction	SQ→SS→SL	0.678	67.8%	Partial Mediation

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
1. Economic Planning Unit & Prime Minister's Department, 2015. Strategy Paper 9-Transforming Technical and Vocational Education and Training to Meet Industry Demand. *Eleventh Malaysia Plan,2016-2020:Way Forward*, p.18. Available at: rmk11.epu.gov.my/pdf/strategy-paper/Strategy Paper 09.pdf.
2. Ismail, A. & Abiddin, N.Z., 2014. Issues and Challenges of Technical and Vocational Education and Training in Malaysia Towards Human Capital Development. *Middle-East Journal of Scientific Research*, 19, pp.7–11.
3. Ibrahim, M. Z., Rahman, M. N. A., & Yasin, R. M. (2014). Determining factors of students' satisfaction with Malaysian skills training institutes. International Education Studies, 7(6), 9–24.
4. Mahadzirah, M., & Zainudin, A. (2009). Building Corporate Image and Securing Student Loyalty in the Malaysian Higher Learning Industry. The Journal of International Studies, 4(1), 30–40.
5. Nguyen, N. & LeBlanc, G. (2001). Image and Reputation of Higher Education Institutions in Students' Retention Decisions. The International Journal of Educational Management, 15(6/7), 303-311.
6. Ibrahim, M. Z., Rahman, M. N. A., & Yasin, R. M. (2014). Determining factors of students' satisfaction with Malaysian skills training institutes. International Education Studies, 7(6), 9–24.
7. Hair, J.F., Hult, G.M., Ringle, C.M., and Sarstedlt, M. (2017). A primer on partial least squares structural modelling (PLS SEM). USA: Sage Publication, Inc.
8. Grönroos, C. (1984). A service quality model and its marketing implications. European Journal of Marketing, 18(4), 36-44. http://dx.doi.org/10.1108/EUM0000000004784.
9. Parasuraman, A., Zeithaml, V. A., & Berry, L. (1991). Refinement and reassessment of the SERVQUAL scale. Journal of Retailing, 67(4), 420-450.
10. Usman U., & Mokhtar S.S.M (2016). Analysis of Service Quality, University Image and Student Satisfaction on Student Loyalty in Higher.
11. Education in Nigeria. International Business Management. ISSN: 1993-5250. DOI:10 (12):2490-2502,2016.
12. Kotler, P, & Amstrong, G., Harris C.L., & Piercy.N., (2017). Principles of Marketing. 7th Edition. Pearson. United Kingdom.
13. Kheiry, B. (2012). University intellectual image impact on satisfaction and loyalty of students (Tehran selected universities). African Journal of Business Management, 6(37), 10205–10211. https://doi.org/10.5897/AJBM11.434.
14. Dado, J., J.T. Petrovicova, S. Cuzovic and T. Rajic, (2011). An empirical examination of the relationships between service quality, satisfaction and behavioral intentions in higher education setting. Serbia. Journal of Management,7, 203-218.
15. Austin, A. J., & Pervais, S (2017). The Relation Between " Student Loyalty " and " Student Satisfaction " (A case of College / Intermediate Students at Forman Christian College), 7881(January), European Scientific Journal January 2017 /SPECIAL/ edition ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431.
16. Nguyen, N. & LeBlanc, G. (2001). Image and Reputation of Higher Education Institutions in Students' Retention Decisions. The International Journal of Educational Management, 15(6/7), 303-311.
17. Kotler, P, & Amstrong, G., Harris C.L., & Piercy.N., (2017). Principles of Marketing. 7th Edition. Pearson. United Kingdom.
18. Austin, A. J., & Pervais, S (2017). The Relation Between " Student Loyalty " and " Student Satisfaction " (A case of College / Intermediate Students at Forman Christian College), 7881(January), European Scientific Journal January 2017 /SPECIAL/ edition ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431.
19. Mihanović, Z., Batinić, A. B., & Pavičić, J. (2016). the Link Between Students' Satisfaction With Faculty , Overall Students ' Satisfaction With Student Life and Student Performances. Review of Innovation Adn Competitiveness, 2(1), 37–60.
20. Mahapatra, S. S., & Khan, M. S. (2007). A neural network approach for assessing quality in technical education: an empirical study. International Journal of Productivity and Quality Management Decision, 2(3), 287-306.
21. Ngo, V. M., & Nguyen, H. H. (2016). The Relationship between Service Quality, Customer Satisfaction and Customer Loyalty: An Investigation in Vietnamese Retail Banking Sector. Journal of Competitivenes, 8(2), 103–116.
22. Ibrahim, M. Z., Rahman, M. N. A., & Yasin, R. M. (2014). Determining factors of students' satisfaction with Malaysian skills training institutes. International Education.
23. Martensen, A., Grønholdt, L., Eskildsen, J. and Kristensen, K. (1999), "Measuring student oriented quality in higher education: application of the ECSI methodology", Proceedings from the TQM for Higher Education Conference "Higher Education institutions and the Issue of Total Quality", 30-31 August, Verona, 371-83.
24. Cooper, D. R. & Schindler, P. S. (2003). Business research methods (8th ed.). Boston: McGraw-Hill Irwin.
25. Sekaran, U & Bougie, R (2016). Researh Method for Business. Wiley.
26. Hair, J.F., Hult, G.M., Ringle, C.M., and Sarstedlt, M. (2017). A primer on partial least squares structural modelling (PLS SEM). USA: Sage Publication, Inc.

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