

## Relationship between Service Quality and Customer Satisfaction in Academic Affairs Unit

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### Abstract

To be part of the learning institution, academic affairs need to make sure their service quality can have a good impact and increase customer satisfaction. Providing the highest level of service quality has become a must for most businesses nowadays. Thus, this paper intends to study the customer satisfaction involved students of UiTMCK in communicating with the staff of the Academic Affairs Unit and the students as the respondents came from business study backgrounds. The independent variables are tangibles, reliability, assurance, empathy and responsiveness taken from the SERVQUAL model, meanwhile, the dependent variable is customer satisfaction. The population of this study was 1 160 respondents and the sample size was 288 respondents were returned the questionnaire. The data was analysed using SmartPLS 3.2.1 software. Overall, all hypotheses were accepted and supported at a significant value of  $p < 0.01$ . It can be concluded that all constructs have strong direct relationships with customer satisfaction. In conclusion, all hypotheses were accepted in this research.

**Keywords:** Assurance, Customer Satisfaction, Empathy, Reliability, Responsiveness, Tangible.

### Introduction

In today's competitive business world, customer satisfaction has become a critical indicator of an organization's ability to compete. According to Doriza (2019), service quality has a direct positive effect on customer satisfaction. Academic Affairs is one of the units at higher learning institutions responsible for providing the highest quality service to customers in the education field. Academic Affairs is the department of a university that manages a range of academic programs and departments. Academic concerns have become the beating heart of most students and faculty at most higher education institutions. This unit has evolved into a primary resource for both students and academic staff seeking references for any

academic concerns. To be part of the learning institution, academic affairs need to make sure their service quality can have a good impact and increase customer satisfaction. Providing the highest level of service quality has become a must for most businesses nowadays. In many aspects, service quality is perceived quality, service quality resembles an attitude, yet it differs from customer satisfaction (Lee & Hwan, 2005). Service quality, according to Parasuraman et al (1994), is one of the foundations of customer satisfaction.

The study of the relationship between service quality and customer satisfaction in the context of an Academic Affairs Unit is a crucial and relevant topic with profound implications for both educational institutions and their stakeholders. The importance of this study lies in its potential to enhance the overall quality of educational services, leading to improved satisfaction among students, faculty, and other stakeholders.

### **Problem Statement**

Due to the importance of customer satisfaction, many studies have been conducted that study in the field (Namin & Yavari, 2017). According to research conducted by Sapri et al (2009), the main clients in the education area are students, and the success or failure of an institution is primarily dependent on student satisfaction. They also identified from their research, that one of the issues that higher educational institutions face is providing services that meet the needs and expectations of customers, as these elements have an impact on their satisfaction. Academic Affairs, as a service provider, must be prepared to meet the diverse tastes and preferences of its clients in terms of service quality. Academic affairs services have become more diverse as student needs have varied dramatically by age, ethnicity, academic, social, and financial background (Falluca, 2007). Academic affairs divisions are under pressure to improve student success and demonstrate the effectiveness of programs and contributions to student outcomes (Ludvik, Henning & Roberts, 2016). Thus, the main purpose of this research is to identify the factors that influence service quality towards customer satisfaction at the academic affairs unit of higher learning institutions in Malaysia.

### **Research Questions**

1. What are the factors that influence service quality towards customer satisfaction at the academic affairs unit of higher learning education?
2. What are the relationships of tangible, reliability, assurance, empathy, and responsiveness with customer satisfaction at the academic affairs unit of higher learning education?

### **Research Objectives**

1. To identify the factors that influence service quality towards customer satisfaction at the academic affairs unit of higher learning education.
2. To identify the relationship of tangible, reliability, assurance, empathy, and responsiveness with customer satisfaction at the academic affairs unit of higher learning education.

### **Literature Review and Hypotheses Development**

Customer satisfaction is one of the most significant indicators in identifying service quality levels in the academic affairs unit. The service provided contributes to customer

satisfaction and customer loyalty towards a unit or institution and finally will lead to an increase in profit.

### **Customer Satisfaction**

According to Ali et al (2021), customer satisfaction is a metric that assesses the degree of likelihood between a company's product and a customer's belief. Customers who are satisfied with the quality and variety of products will demand more, resulting in increased profits for the company. Consumer satisfaction is a metric that determines how satisfied buyers or customers are with a company's goods (products), services, and capabilities. Customer feedback and ratings enable a company to enhance or adjust its products and services. Superior service quality and a positive brand image, according to Dam & Dam (2021), are essential factors in increasing customer happiness and loyalty. This is a critical issue in the service industry, which faces intense competition from competing enterprises. Customer satisfaction has a positive and significant association with customer loyalty, and managers should place a higher priority on customer happiness to increase customer loyalty.

Ali et al (2021) in their study on factors shaping customer satisfaction specified that consumer satisfaction can be improved by eliminating factors that negatively affect customer satisfaction. The regional government should put more effort into developing a program to increase residential satisfaction scores. Developers with repetitiously dissatisfied feedback or complaints complained should be blacklisted or banned on probation.

### **Service Quality**

Service quality can be described by comparing consumers for services that are received or obtained by the actual service expected or desired for the service attributes of a company. Service quality has a significant and positive effect on customer satisfaction (Hindarsah et al., 2021). According to Dam & Dam (2021), managers should improve service quality in the eyes of customers, such as improving facilities, customer commitments, staff-client interaction, readiness to address customer concerns, and readiness to resolve customer problems, because customers have a positive tendency for customer satisfaction and loyalty.

Mouzaek et al (2021) that investigate service quality and satisfaction indicate that all organizations need to be aware of the service qualities they offer to the customer and identify whether customers are satisfied with the service provided. Organizations also need to bargain more services to their customer to improve their services. Besides, service quality is more significant than before to assure the satisfaction of those who benefit from the services since the customers' awareness level and their expectations for a sufficient quality level are increased. Ali et al (2021) clarify that organizations should constantly adjust on factors that influence service quality to be able to provide their guests with the best values and also state the significant dimensions to lay more emphasis on to enhance service quality since service quality has been revealed as a key factor in the search for sustainable competitive advantage and fulfilling consumers' requests remains the greatest challenge.

### **Dimension of Service Quality**

In discussing service quality issues, five dimensions of service quality are significant to customer satisfaction including tangibility, reliability, responsiveness, assurance and empathy. Table 1 describes the five dimensions of service quality covered in this study.

Table 1

*Five Dimensions of Service Quality*

<b>Dimensions</b>	<b>Explanation</b>
Tangibility	By matching the tangible connection with the services given, tangible service leads attract customer attention to service quality.
Reliability	It is critical to maintain reliability to provide the promised service on a consistent and exact basis. Customers should work with business areas or organizations that keep their promises, particularly those regarding administration outcomes and centre-help properties.
Responsiveness	The tendency to support and assist clients with timely service is referred to as responsiveness. Companies that respond quickly to client requirements, questions, and other issues will attract customers.
Assurance	Assurance relates to a customer's confidence and trust, which means that any firm or market must have a great ability to inspire customers with good confidence and trust. Furthermore, client trust and confidence in the markets and their products lead to increased profitability.
Empathy	This dimension has two crucial points: trust and confidence, as well as attention. This indicates that empathy belongs to the customer's attention, encouraging them to believe that the market or business corporation is the finest for gratifying them with good loyalty through the issue of trust.

**Tangible**

Parasuraman et al (1985) identify tangibles as physical facilities (equipment, personnel, and communications materials). Customers will judge quality based on the physical appearance of the service. External appearance, counter services, overdraft facilities, business hours, and transaction speed and efficiency are all tangibles. The authors argue that the empathy component should include opening hours of operations, and the reliability dimension should include overdraft privileges. In the organisation, the tangibility dimension becomes an inherent in-service quality, such as equipment, physical facilities, and visual attractiveness. According to Ananth et al (2011), beauty, physical facility, and visual appeal are all favourable markers of tangibility in terms of consumer satisfaction. As a result of this statement, the following hypothesis emerges. H1: Tangible is positively significant with customer satisfaction.

**Reliability**

The term "reliability" refers to a company's ability to keep its promises, such as those regarding delivery, service provision, problem resolution, and price. Customers like to conduct business with organisations that follow through on their promises, particularly those related to service outcomes and fundamental service characteristics. Customer expectations of dependability must be understood by all businesses. Companies that do not provide the fundamental service that customers believe they are purchasing are the most likely to fail (Zeithaml et. al., 1990). The reliability component of service quality, according to

Parasuraman et al (1988), has a beneficial impact on customer satisfaction. Maintaining an error-free record is the epitome of dependability, and it has a significant impact on customer satisfaction. The amount to which customers can rely on the service given by the business is referred to as reliability. The financial sector in Jordan, for example, has been judged to be more reliable than in other countries. As a result of the foregoing literature, the following hypothesis has been developed. H2: Reliability is positively significant with customer satisfaction.

### **Assurance**

According to Van Iwaarden et al (2003), assurance is defined as employees' understanding of courtesy and the firm's and its employee's ability to inspire trust and confidence to develop bridges with consumers. Assurance entails informing and listening to clients in their local language, regardless of their educational level, age, or nationality. This factor is likely to be especially significant for services that customers consider to be high-risk and about which they are unsure how to evaluate. Customer satisfaction will be positively impacted by providing courteous customer support, precision in completing orders, quick access, maintaining correct records and estimates, employing an experienced professional team, and delivering promised services. Customer satisfaction is highly influenced by employees' capacity to inspire trust and confidence (Sadek et al., 2010). It leads to the creation of the following hypothesis based on the above literature. H3: Assurance is positively significant with customer satisfaction.

### **Empathy**

Empathy touches on the special care and commitment dedicated to the clients in the times when they need it (Parasuraman et al., 1988). A lot of studies have been conducted in various fields to explain the possible relationship between empathy and customer satisfaction. In the healthcare sector, for instance, a study was conducted in the biggest city of Kashmir and Jammu, Srinagar to measure the quality of the service provided by the privately-owned hospitals. The dimension of service quality that was put in use as assurance, empathy, efficiency, responsiveness and tangibility. According to the study, it was found that the least service quality gap was the tangibility dimension and the highest service quality was the doctor's empathy which could affect the patient's retention (Raina et al., 2018). In the education sector, the SERVQUAL model was utilized to assess the quality of service delivered by an undergraduate engineering course. In this study, dimensions such as reliability, assurance, tangibility, empathy and responsiveness were put in use to measure the quality of the service. It was found that empathy was the most significant factor influencing the service quality provided (Git & Sulaiman, 2012). Accordingly, the authors propose that H4: Empathy is positively significant in customer satisfaction.

### **Responsiveness**

Responsiveness emphasizes the obligations of the service provider to provide assistance and help to the clients and the capability to provide immediate service to them (Parasuraman et al., 1988). Similar to other dimensions of the SERVQUAL model, responsiveness also was a dimension that was utilized and adopted in a lot of fields of study to assess the aspect of service quality. In a study to measure the service quality of a Turkish airline, for instance, it was revealed that the most significant factor that influences the service quality was responsiveness while the least important factor was availability. This was due to the

differences in the level of education that impacted their preferences and behaviour (Pakdil & Aydin, 2007). In the education sector, based on a case study conducted at the University of Janabadra, Indonesia, the SERVQUAL method was put in use to determine the quality of computer-based test services. The study revealed that the responsiveness dimensions play the most significant part in influencing the quality of the test service while the tangibility dimension was the least contributor to the service quality (Fitriastuti et al., 2019). Accordingly, the authors propose that H5: Responsiveness is positively significant for customer satisfaction.

The proposed conceptual framework was modified from Parasuraman et al., (1985). In their original framework, they have illustrated ten (10) dimensions of service quality. However, since this paper only focused on five (5) dimensions, the framework of this study is shown in Figure 1. Certain modifications have been made to align the conceptual framework with the research hypotheses. Based on the thorough review of earlier research, a conceptual framework using hypotheses H1 – H5 is proposed to recognize the relationships as presented in Figure 1.

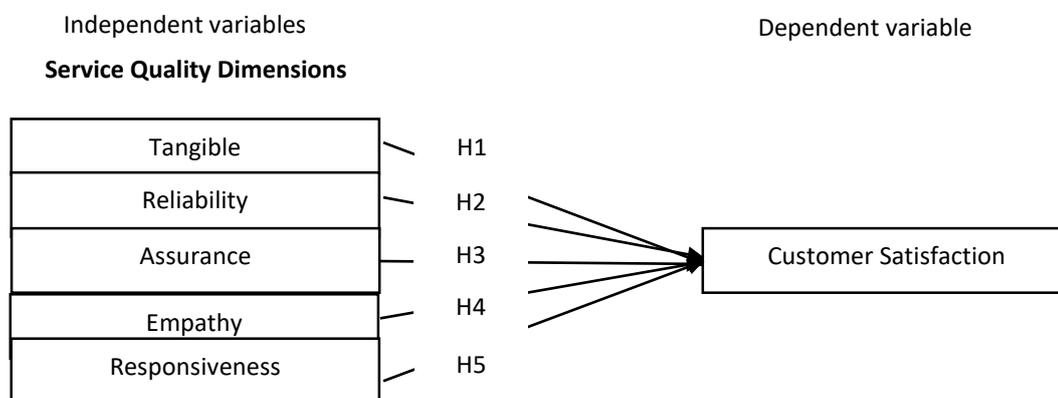


Figure 1. Conceptual Framework with Hypotheses Development Between Service Quality Dimensions and Customer Satisfaction

### Research Methodology

Research methodology is a mandatory component of any study in answering three basic questions; (1) how the study will be implemented, (2) how the questions will be answered and (3) how the answers from respondents will be analyzed. This study is an exploratory study that used a questionnaire as its survey instrument for the collection of data and information. Also, this study was a cross-sectional study, a type of observational study that analyses data from a population, or a representative subset, at a specific point in time. This study was conducted at University Teknologi MARA Kelantan Branch, Machang Campus (UiTMCK) with a total number of populations is 1 160 respondents. A simple random sampling is used in this study in this case each individual is chosen entirely by chance and each member of the population has an equal chance or probability of being selected. In record, UiTMCK had students from various faculties and programmes.

Thus, this study only focused on Business Studies Programme students from the Faculty of Business and Management. A total of 288 samples from Business Studies Programme students were received as respondents after 3 three (3) days duration were given to them to answer the questionnaire. The questionnaire was consisting of three (3) parts. Part A was about the profile of the respondents and consisted of three (3) questions such as gender,

programme and current semester. Meanwhile, Part B was about independent variables which cover five (5) components which are tangibles, reliability, assurance, empathy and responsiveness. Besides, Part C was about the dependent variable which is customer satisfaction. Part B and C were using the Likert Scale from 1 (Strongly Disagree) to 5 (Strongly Agree). The total number of items (questions) in this questionnaire is 40 items. The items used in this study were adopted from previous studies. Tangible, reliability and responsiveness, there were adopted by Setapa et al., (2020a) meanwhile assurance and empathy, there were adopted by Setapa et al., (2020b). To determine the exact number of respondents that were being selected as respondents, the researcher used G-Power software with a 95 per cent confidence level and 5 per cent margin of error, a total of 288 usable responses were analysed using the Structural Equation Modelling Partial Least Squares algorithm (SEM-PLS) SmartPLS 3.2.1 in examining the relationship between service quality and customer satisfaction.

## Result

### Profile of the Respondents

Based on analysis using SPSS, the demographic profile of the respondents in this study has been divided into three (3) categories. They are the gender, programme and current semester. Table 2 shows that from 288 responses analysed, 182 respondents (63.2 per cent) were female and 106 respondents (36.8 per cent) were male. Based on the analysis it was found that 121 respondents (42.0 per cent) were in Banking Studies (BA119), 111 respondents (38.5 per cent) were in Business Studies (BA111) and the balance of 56 respondents (19.5 per cent) were in Office Management Studies (BA118). Currently, 98 respondents (34.0 per cent) were in Semester 3, followed by 81 respondents (28.0 per cent) were Semester 5, 56 respondents (19.5 per cent) were in Semester 2, 46 respondents (16.0 per cent) were in Semester 4 and the rest 7 respondents (2.5 per cent) were Semester 1.

Table 2

#### *Profile Respondents*

<b>Item</b>	<b>Number of Respondents</b>	<b>Percentage of Respondents (%)</b>
<b><i>Gender</i></b>		
<b>Male</b>	106	36.8
<b>Female</b>	182	63.2
<b>Total</b>	<b>288</b>	<b>100</b>
<b><i>Programme</i></b>		
<b>BA111</b>	111	38.5
<b>BA118</b>	56	19.5
<b>BA119</b>	121	42.0
<b>Total</b>	<b>288</b>	<b>100</b>
<b><i>Current Semester</i></b>		
<b>1</b>	7	2.5
<b>2</b>	56	19.5
<b>3</b>	98	34.0
<b>4</b>	46	16.0
<b>5</b>	81	28.0
<b>Total</b>	<b>288</b>	<b>100</b>

### Measurement Model Evaluation

SEM-PLS (Smart PLS 3.0) was used to analyse the measurement model (Ringle, Wende & Becker, 2015). Factor loading, composite reliability, Cronbach's alpha, average extracted variance (AVE), and discriminant validity, as well as Heterotrait-Monotrait (HTMT), as proposed by Henseler et al (2015), were evaluated.

### Internal Consistency Reliability

Internal consistency reliability, which comprises Cronbach's Alpha and composite reliability, is the first criterion to be determined in the measurement model. To demonstrate the modest dependability applicable to the research, the composite reliability values should be higher than 0.70 (Hair et al., 2014).

Table 3

#### *Internal Consistency Reliability*

Construct	Item	Loading (>0.70)	rangeComposite Reliability (>0.70)	Cronbach's Alpha ( $\alpha$ ) (>0.60)
Tangible	6 items	0.766 – 0.951	0.961	0.951
Reliability	8 items	0.884 – 0.960	0.977	0.973
Assurance	6 items	0.751 – 0.949	0.997	0.945
Empathy	4 items	0.918 – 0.981	0.976	0.967
Responsiveness	5 items	0.934 – 0.960	0.977	0.971
Customer Satisfaction	6 items	0.837 – 0.962	0.964	0.955

Table 3 reports the SEM-PLS analysis that shows the loading range, composite reliability and Cronbach's Alpha values for the tangible, reliability, assurance, empathy, responsiveness and customer satisfaction respectively. From the table, the composite reliability value for tangible was 0.961, reliability was 0.977, assurance was 0.997, empathy was 0.976, responsiveness was 0.977 and customer satisfaction was 0.964. All of the constructs had strong composite reliability where values between 0.70 and 0.90 are considered strong and satisfactory (Nunnally & Bernstein, 1994).

The Cronbach's alpha values for the constructs were strong with the tangible reported as 0.951, reliability as 0.973, assurance as 0.945, empathy as 0.967, responsiveness as 0.971 and customer satisfaction as 0.955. The internal consistency of 0.60 is minimally acceptable and all these values were well above that (Nunnally & Bernstein, 1994). Therefore, this indicates that all the constructs had composite reliability greater than 0.70 and the Cronbach's alpha values were above 0.60, suggesting acceptable reliability.

### Convergent Validity

The loadings, average variance extracted (AVE), and composite reliability are commonly used to determine the measurement model's convergent validity (Gholami et al., 2013). The authors employed a factor loading value greater than 0.70, as indicated by Hair et al (2010) except for BEmpathy5 (0.651) and BEmpathy6 (0.630), the loadings were all more than 0.7, indicating that all items were approved. Aside from the loading values, the composite reliability and average variance extracted (AVE) are also factors to consider when establishing convergence validity. Table 4 displays the loading values. The composite reliability values, which show how well the construct indicators signal the latent construct, ranged from 0.961

to 0.997, which was higher than the recommended value of 0.7. (Hair et al., 2010). Because it is thought to explain more than half of the variance, the construct's AVE should be greater than 0.50. Meanwhile, AVE values less than 0.50 indicated that there are still more faults in the items that the construct has not yet explained. As a result, all of the AVE values at the construct level in Table 4 imply that the measurement model is convergently valid. The AVE ranged from 0.788 to 0.911.

Table 4

*Convergent Validity of Measurement Model*

<b>Construct</b>	<b>Loading range (&gt;0.70)</b>	<b>CR (&gt;0.70)</b>	<b>AVE (&gt;0.50)</b>	<b>Cronbach Alpha (<math>\alpha</math>) (&gt;0.60)</b>
Tangible	0.766 – 0.951	0.961	0.804	0.951
Reliability	0.884 – 0.960	0.977	0.842	0.973
Assurance	0.751 – 0.949	0.997	0.788	0.945
Empathy	0.918 – 0.981	0.976	0.911	0.967
Responsiveness	0.934 – 0.960	0.977	0.896	0.971
Customer Satisfaction	0.837 – 0.962	0.964	0.817	0.955

**Discriminant Validity**

Cross-loadings, the Heterotrait-Monotrait (HTMT) Ratio, and the Fornell-Larcker (1981) criterion of comparing the correlations between constructs and the square root of the AVE for that construct are all common ways of assessing discriminant validity. Discriminant validity is determined using this method when an item's loading on a construct is greater than all of its cross-loading with other constructs. The results demonstrate that the first tangible construct is made up of six (6) components, all of which have significant loadings in this construct. Eight (8) things were found to have considerable loadings for reliability, while six (6) items were found to have significant loadings for assurance. In addition, four (4) elements in the empathy category have large loadings. Meanwhile, the responsiveness is made up of five (5) components that have considerable loadings as well. Furthermore, six (6) of the customer satisfaction variables were discovered to have substantial loadings. All of the cross-loading values of the items are shown in Table 5.

Table 5  
*Loadings and Cross-Loading of Each Item*

	Tangible	Reliability	Assurance	Empathy	Responsiveness	Customer Satisfaction
Btangible1	0.899	0.743	0.677	0.315	0.700	0.609
Btangible2	0.882	0.928	0.902	0.480	0.942	0.674
Btangible3	0.945	0.925	0.873	0.505	0.901	0.728
Btangible4	0.924	0.896	0.812	0.402	0.833	0.677
Btangible5	0.951	0.849	0.819	0.410	0.823	0.674
Btangible6	0.766	0.574	0.530	0.156	0.569	0.401
Breliability 1	0.829	0.886	0.808	0.415	0.758	0.652
Breliability 2	0.872	0.885	0.825	0.487	0.830	0.658
Breliability 3	0.927	0.932	0.793	0.427	0.837	0.627
Breliability 4	0.842	0.884	0.851	0.435	0.903	0.566
Breliability 5	0.820	0.926	0.853	0.446	0.850	0.653
Breliability 6	0.819	0.926	0.897	0.427	0.863	0.754
Breliability 7	0.857	0.960	0.905	0.484	0.889	0.758
Breliability 8	0.864	0.937	0.907	0.528	0.905	0.744
Bassurance1	0.704	0.735	0.883	0.284	0.865	0.638
Bassurance2	0.655	0.689	0.852	0.175	0.806	0.551
Bassurance3	0.755	0.896	0.947	0.434	0.886	0.757
Bassurance4	0.845	0.944	0.943	0.499	0.941	0.739
Bassurance5	0.801	0.914	0.934	0.396	0.865	0.805
Bassurance6	0.863	0.739	0.751	0.354	0.724	0.677
Bempathy 1	0.315	0.424	0.328	0.945	0.349	0.481
Bempathy 2	0.421	0.499	0.439	0.972	0.467	0.459
Bempathy 3	0.488	0.517	0.425	0.981	0.446	0.498
Bempathy 4	0.455	0.461	0.388	0.918	0.416	0.431

Bresponse 1	0.852	0.883	0.908	0.508	0.960	0.681
Bresponse 2	0.837	0.846	0.857	0.421	0.955	0.584
Bresponse 3	0.841	0.884	0.924	0.380	0.934	0.712
Bresponse 4	0.860	0.891	0.918	0.369	0.945	0.701
Bresponse 5	0.865	0.895	0.914	0.404	0.940	0.723
Bcs1	0.657	0.753	0.821	0.455	0.738	0.951
Bcs2	0.585	0.478	0.539	0.298	0.462	0.837
Bcs3	0.553	0.476	0.491	0.308	0.422	0.855
Bcs4	0.612	0.674	0.771	0.412	0.683	0.962
Bcs5	0.729	0.772	0.784	0.510	0.740	0.912
Bcs6	0.707	0.788	0.800	0.614	0.777	0.897

Discriminant validity is determined using this method when an item's loading on a construct is greater than all of its cross-loading with other constructs. The results demonstrate that the first tangible construct is made up of six (6) components, all of which have significant loadings in this construct. Eight (8) items were found to have considerable loadings in the reliability category, whereas six (6) things were found to have significant loadings in the assurance category. Furthermore, significant loadings were discovered in empathy, which consists of four (4) components. Furthermore, significant loadings were discovered in the responsiveness, which comprises five (5) elements. Finally, customer satisfaction consists of six (6) items and also was found to have significant loadings. Meanwhile, Henseler et al. (2015) suggested the Heterotrait-Monotrait (HTMT) ratio of correlations as a rigorous method of achieving discriminant validity. HTMT, as a criterion, involves comparing it to a predefined threshold. Gold, Malhotra and Segars (2011) proposed that a value of 0.90 shows a lack of discriminant validity. Hence, Table 6 shows that discriminant validity has been established.

Table 6

*Heterotrait– Monotrait (HTMT)*

Constructs	1	2	3	4	5	6
1. Assurance						
2. Customer Satisfaction	0.808					
3. Empathy	0.422	0.498				
4. Reliability	0.763	0.749	0.513			
5. Responsiveness	0.797	0.727	0.454	0.757		
6. Tangible	0.703	0.731	0.441	0.754	0.622	

The Fornell-Larcker criterion compares the square root of the AVE values to the latent variable correlations as the following technique. The square root of any AVE construct must be bigger than its highest correlation with any other construct to use this strategy.

Table 7

*Fornell-Larcker Criterion*

Constructs	1	2	3	4	5	6
1. Assurance	<b>0.888</b>					
2. Customer Satisfaction	0.792	<b>0.904</b>				
3. Empathy	0.414	0.491	<b>0.954</b>			
4. Reliability	0.834	0.743	0.498	<b>0.917</b>		
5. Responsiveness	0.857	0.723	0.439	0.931	<b>0.947</b>	
6. Tangible	0.873	0.713	0.439	0.828	0.800	<b>0.897</b>

Table 7 shows the results of the Fornell-Larcker criterion assessment with the square root of the AVE on the diagonal and the correlations between the variables in the lower left triangle. Overall, the square roots of the AVEs for the construct assurance (0.888), customer satisfaction (0.904), empathy (0.954), reliability (0.917), responsiveness (0.947) and tangible (0.897). Thus, this research paper fulfils those criteria on the cross-loading method, HTMT ratio and the Fornell-Larcker criterion, providing evidence for the discriminant validity of the constructs. In sum, both convergent and discriminant validity of the measures in this research were established.

**Structural Model Evaluation**

Path analysis was performed to evaluate the structural model. The primary evaluation criteria for the structural model are the R2 value and the level of significance of the path coefficient (Barclay et al, 1995; Hair et al., 2011). Figure 2 illustrates the structural model of the study consisting of five (5) independent variables which are tangibles, reliability, assurance, empathy, and responsiveness. Meanwhile, customer satisfaction is a dependent variable in this study.

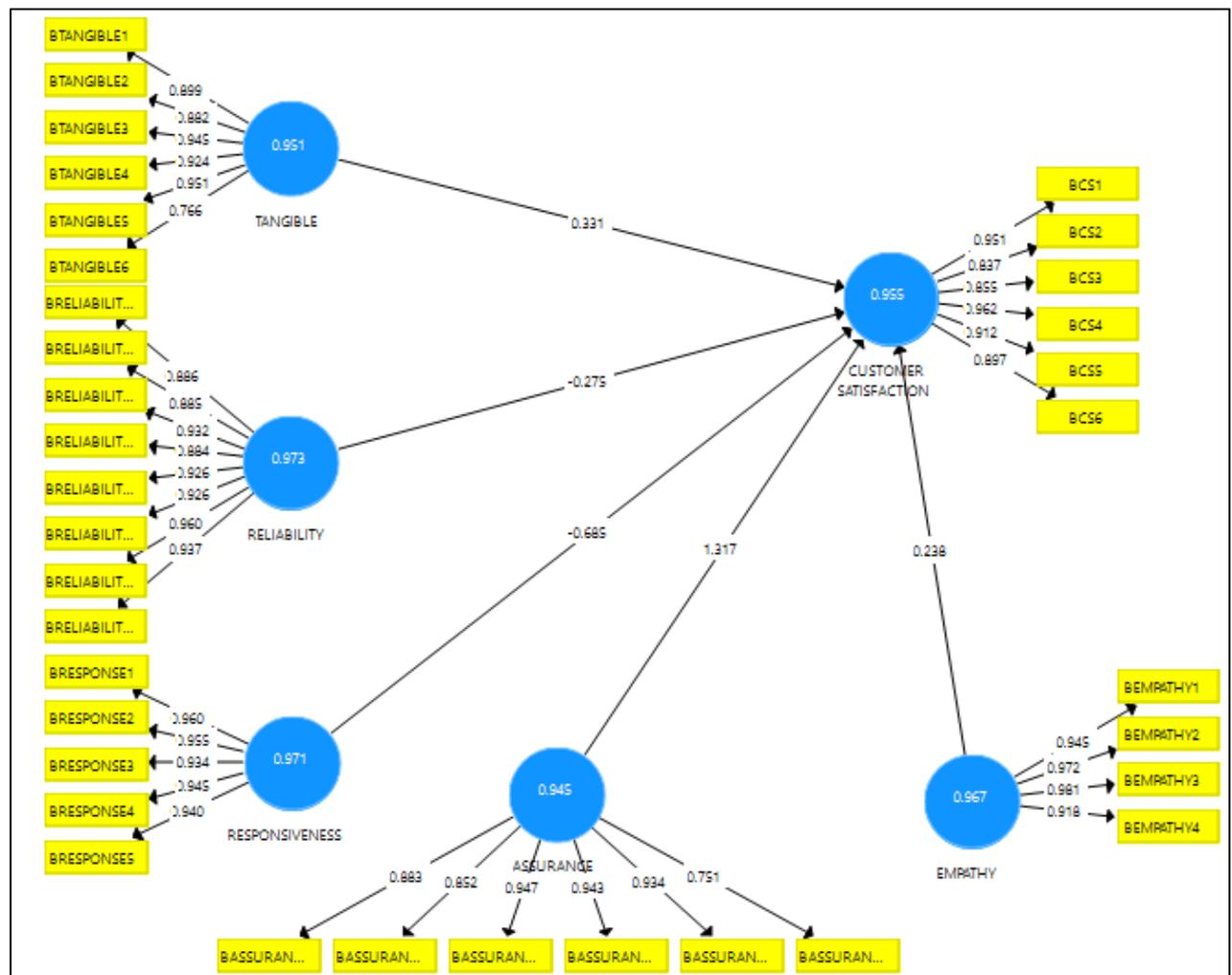


Figure 2. Structural Model

The structural model involves the analysis of the relationship between the latent variables or constructs. This includes the collinearity assessment, path coefficient, coefficient of determination (R<sup>2</sup>), effect size (f<sup>2</sup>) predictive relevance (Q<sup>2</sup>) and blindfolding (Hair, 2014).

### Assessment of Collinearity among the Constructs

The first step in evaluating the structural model is to examine collinearity issues between each set of constructs separately for each subpart of the structural model. Table 8 shows the Variance Inflation Factor (VIF) values of the analyses. It can be seen that all the VIF outputs are clearly below the threshold of 5. Therefore, collinearity among the constructs is not an issue in the structural model. Thus, the author can continue examining the default report such as path coefficient, R<sup>2</sup>, f<sup>2</sup>, and Q<sup>2</sup>.

Table 8

*Collinearity Assessment of the Constructs*

Construct	VIF
Tangible	4.126
Reliability	4.926
Assurance	3.220
Empathy	1.381
Responsiveness	3.403

**Assessment of Path Coefficients**

Path coefficients indicate that the strengths of the relationships and hypotheses are empirically supported. Surprisingly, all of the constructs had strong relationships with the dependent variable. As seen in Table 9, it is confirmed that all paths' relationship is significant. The exogenous constructs such as the tangible significantly contributed to explaining the variation in the endogenous latent variable namely the customer satisfaction with the  $\beta$  value of 0.331 (30%). Meanwhile, the relationships between reliability, assurance, empathy and responsiveness to customer satisfaction are also significant with the  $\beta$  values -0.275, 1.317, 0.238 and -0.685 respectively. The t-values of the parameter indicate the strength of the relationship represented by the parameter where the higher the t-value, the stronger the relationship. The bootstrapping procedure using a 5000 sample was used to obtain the t-values of each coefficient (Chin, 2010; Efron and Tibshirani, 1993).

Table 9

*Significant Testing Results of the Structural Model Path Coefficients*

Structural Path	Path coefficient ( $\beta$ )	t- value	P-value
Tangible → Customer Satisfaction	0.331	6.379	0.000
Reliability → Customer Satisfaction	-0.275	4.026	0.000
Assurance → Customer Satisfaction	1.317	14.266	0.000
Empathy → Customer Satisfaction	0.238	3.972	0.000
Responsiveness → Customer Satisfaction	-0.685	5.295	0.000

\* 1.645 - 2.32

\*\* 2.33 and above

\*\*\* $p < 0.01$ **Assessment of Coefficient of Determination (R<sup>2</sup>)**

The R<sup>2</sup> value is a measure of model prediction accuracy that is determined as the squared correlation between the actual and projected values of a certain endogenous component. When it comes to the R<sup>2</sup> value, there is no hard and fast rule. Chin (1998) proposed 0.67 (substantial), 0.33 (moderate), and 0.19 as threshold values for measuring the R<sup>2</sup> value (weak). The R<sup>2</sup> value for the endogenous construct that reaches the appropriate R<sup>2</sup> value is shown in Table 10. Overall, the model explains a "significant" percentage of what Chin suggests (1998). For the research model of this research, the R<sup>2</sup> values for the endogenous variable indicate that the proposed theoretical model explains 70% or 0.697 of the variance in customer satisfaction, which is a very satisfactory level of model predictability. Thus, this model is meaningful with strong predictive capacity.

Table 10

*Determination Coefficient (R<sup>2</sup>)*

Endogenous variable	R <sup>2</sup> value	Threshold
Customer Satisfaction	0.697	≥0.67 (substantial)

**Assessment of Effect Size (f<sup>2</sup>)**

The effect size (f<sup>2</sup>) is a metric for determining the relative impact of an exogenous (predictor) construct on an endogenous (endogenous) construct (Hair, 2014). To quantify the relative effect size of the exogenous construct on the endogenous construct, using Cohen's (1988) guidelines: f<sup>2</sup> values of 0.02 are regarded as small effects, 0.15 are considered medium effects, and 0.35 are considered large effects. Table 11 shows the final result. The exogenous constructs namely tangible, reliability, assurance, empathy and responsiveness explain the predictive value of an endogenous latent variable, namely customer satisfaction has an f<sup>2</sup> effect size of 0.045, 0.017, 0.376, 0.135 and 0.101 respectively. In summary, two (2) constructs had a small effect size, two (2) constructs had a medium effect size and only one (1) construct had a large effect size in producing the R<sup>2</sup> for customer satisfaction.

Table 11

*Effect Size (f<sup>2</sup>) of the Latent Variable*

Structural Path	Effect size (f <sup>2</sup> )	Rating
Tangible → Customer Satisfaction	0.045	Small
Reliability → Customer Satisfaction	0.017	Small
Assurance → Customer Satisfaction	0.376	Large
Empathy → Customer Satisfaction	0.135	Medium
Responsiveness → Customer Satisfaction	0.101	Medium

Note: The values of f<sup>2</sup>; 0.02=small, 0.15=medium, 0.35=large

**Assessment of Predictive Relevance (Q<sup>2</sup>) and Blindfolding**

The Q<sup>2</sup> score in SEM-PLS is a predictive relevance metric based on the blindfolding approach (Hair, 2014). A Q<sup>2</sup> score greater than zero for a reflecting endogenous latent variable in the structural model demonstrates the path model's predictive importance for this construct. The Q<sup>2</sup> value was acquired using the blindfolding procedure in SmartPLS3.2.1, as indicated in Table 12. The Q<sup>2</sup> value is significantly higher than zero, indicating that the model is predictive of the reflecting endogenous latent variables.

Table 12

*Predictive Relevance (Q<sup>2</sup>) of Endogenous (Omission distance=7)*

Endogenous variable	Q <sup>2</sup> >0
Innovative Behavior (IB)	0.521

**Overall Results of Structural Model Analysis**

The results of the hypotheses testing are summarized in Table 13. Overall, all hypotheses were accepted and supported at a significant value of p<0.01. It can be concluded that all constructs have strong direct relationships with customer satisfaction. In conclusion, all hypotheses were accepted in this research.

Table 13

*Results of the Structural Model Analysis (Hypotheses Testing)*

Hypotheses	Relationship	Standard Beta	Standard Error	t-value	f <sup>2</sup>	P-value	Decision
H1	Tangible Satisfaction → Customer Satisfaction	0.331	0.052	6.379	0.0450.000		Supported
H2	Reliability Satisfaction → Customer Satisfaction	-0.275	0.068	4.026	0.0170.000		Supported
H3	Assurance Satisfaction → Customer Satisfaction	1.317	0.092	14.266	0.3760.000		Supported
H4	Empathy Satisfaction → Customer Satisfaction	0.238	0.060	3.972	0.1350.000		Supported
H5	Responsiveness Customer Satisfaction	-0.685	0.129	5.295	0.1010.000		Supported

\* 1.645 - 2.32 \*\* 2.33 and above \*\*p<0.01

**Discussion and Conclusion**

This study has adopted the use of the SERVQUAL model, one of the most frequently used tools in measuring service quality. In this sense, the components of the model were investigated to determine whether it possesses any relationship with customer satisfaction in the academic affairs unit. Five (5) separate dimensions from the SERVQUAL model were carefully analyzed and it was found that only the empathy dimension has a strong direct relationship with customer satisfaction. Empathy is regarded as the strongest dimension influencing the satisfaction of the customer because they will get the attention of the academic affairs personnel to accommodate their issues related to academic matters and other matters of their concern. Thus, it can be said that the customer will feel valued when they are being entertained to assist them in something that may be difficult for them to operate or understand. This was consistent with the past study conducted by Rahim et al (2020) in which the study explained that empathy is the most influential dimension in preserving the customer in the contract manufacturing business model. It was also stated that contract manufacturing services should pay more focus to the element of empathy by retaining a good relationship with the clients by solving the customer's problem/issues, understanding the customer's needs and wants as well as ensuring various channels of communication. This indicates that empathy could be a strong dimension in influencing customer satisfaction, regardless of different fields and backgrounds.

The utilization of the SERVQUAL method was proven to be continuously relevant to measuring the extent of customer satisfaction. In terms of the managerial implications, the results of this study are beneficial for academic institutions to bring the level of satisfaction to a new high and reach. The context of this study revolves around the academic affairs unit and hence, for another study it is recommended that the SERVQUAL approach is also constructed for other areas of the academic institutions such as human resource units, examinations units, academic affairs units and other applicable areas that can be found in established educational institutions. Even though empathy has a strong direct relationship with satisfaction, other dimensions under the SERVQUAL such as tangibility, reliability, assurance and responsiveness still need to be improved and enhanced for future study. To enhance tangibility, for instance, the organization can enhance and improve the physical building, hardware and software available in the organization. By having a conducive

workplace, the academic affairs personnel could perform their tasks and responsibilities more efficiently thus improving the service quality.

Besides that, dimensions such as reliability, responsiveness and assurance can be greatly improved by providing more training to the academic affairs staff to add their knowledge and expertise on the products and services they are offering to their customers. Reliable and accurate service from the reliability dimension, faster service from the responsiveness dimension and trustworthy service from the assurance dimension can be further developed when the staff are well versed in the job scope they are currently undertaking.

The implication of this study would be beneficial for the institution and staff served in the Academic Affairs Unit or elsewhere. As service providers, they need to be alert about customer satisfaction especially when they are dealing in that particular unit. The study findings imply how tangible, reliability, assurance, empathy and responsiveness have a positive significant relationship with customer satisfaction or in this study, it refers to students' satisfaction.

### **Significance of the Study**

In conclusion, studying the relationship between service quality and customer satisfaction in the Academic Affairs Unit is not only academically relevant but also holds practical implications for the success, reputation, and sustainability of educational institutions. The findings of this research can guide institutions in making informed decisions to enhance the quality of services provided, ultimately benefiting students, faculty, staff, and the institution as a whole. The Academic Affairs Unit plays a pivotal role in shaping the educational experience of students. By understanding the relationship between service quality and customer satisfaction, institutions can identify areas for improvement and implement strategies to enhance the overall educational experience.

Besides, in an increasingly competitive educational landscape, attracting and retaining students is crucial. Satisfied students are more likely to remain enrolled, speak positively about their experiences, and contribute to a positive institutional reputation. This study can provide insights into the factors that contribute to student satisfaction, aiding in student retention efforts. The quality of services provided by the Academic Affairs Unit also affects the morale and job satisfaction of faculty and staff. A positive work environment, supported by effective service quality measures, can lead to higher levels of employee satisfaction and productivity.

Institutions that prioritize service quality and customer satisfaction gain a competitive advantage in the education sector. Positive word-of-mouth, satisfied alumni, and a reputation for excellence can attract new students and faculty, contributing to the overall success and sustainability of the institution.

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