

THE EFFECTS OF TEACHING QUALITY ON STUDENT SATISFACTION AND BEHAVIOURAL INTENTIONS FROM VIEWPOINT OF UNIVERSITY STUDENTS.

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ABSTRACT

This study focuses on the effects of teaching quality on student satisfaction and behavioural intentions, with an emphasis on students' experiences from university. Data were collected from 168 students of the university. Using partial least square structural equation modelling (PLS-SEM) tool, the hypothesized effects among the constructs were tested empirically. The results indicate that the path coefficients from tangible, empathy and outcome constructs are the key factors that influence student perception of service quality. Also, the path coefficient from service quality of student experience to student satisfaction was significant. In addition, students who are satisfied are more positive in their behavioural intentions toward university compared to the unsatisfactory students. The limitation of the study is due to the nature of the sample which only involved university students; the findings are limited to be generalized to other institutions. It is recommended that the similar study to be carried out at other higher educational institutions and the findings can be used by the private institutions to convince prospective students.

Keywords: Higher education institution, Service quality, student satisfaction, Behavioural intention.

INTRODUCTION

Customer satisfaction is a very important marketing concept. Strong competition in today's competitive educational market forces higher educational institutions in Malaysia to adopt market orientation strategy to differentiate their offering from those of their competitors (Sirat, 2005). Thus, the administrators of higher education institution need to understand the target customer needs in order to boost the customer satisfaction. In higher education, the term "customer" is different from that in other industries since groups such as students, employers, academic staff, government and families are all customers of the education system with a variety

of needs. However, students are the direct recipients of the service provided by the higher education institution. Continuous improvement in quality has become an extremely important issue for higher educational institution to enhance educational value and to increase satisfaction among students and stakeholders. As the core service provided by higher educational institution is teaching, the instructors or academic staffs are considered playing a vital role as service provider to the students as their customer. Thus, higher educational institution should put highest priority on effective teaching provided by instructors and engages student in the learning process. Student satisfaction is often used to assess quality of service provided by the institution (Standifird, 2008; and Qureshi *et al.* 2010).

Many studies had been conducted on the perception of teaching service quality at higher education level, however, the studies were mostly performed in the developed countries (Nasser and Abouchedid, 2005). There were no consensus on the factors that contributes significantly to service quality, student satisfaction or behavioural intentions is determined. The study on student evaluations of service encounters, technical and functional service quality, service satisfaction, and affects on behavioural intentions is not well documented. Very limited studies of such affect have been conducted in developing countries, including Malaysia. Therefore, the present study was conducted to determine the effects of teaching quality delivered by instructors/lecturers on student satisfaction and behavioural intentions, with an emphasis of the view from university students.

LITERATURE REVIEW

Customer satisfaction with service quality is a major goal in service organizations. Service providers cannot detach from this general concern, managers and practitioners must address quality and customer satisfaction issues as a priority. Service quality is basically difficult to define and measure and has been subject to much debate (Legčević, 2009). Thus, the concepts of perceived quality and related customer satisfaction are coined out. Service quality in general differs from product quality due to special characteristics including intangible, simultaneity and heterogeneity (Parasuraman *et al.* 1985). Service quality is more difficult for the consumer to evaluate than goods quality, moreover quality evaluations are not made exclusively on the outcome of service but rather they involve evaluations of the process of service deliver (Parasuraman *et al.* 1985). Intangible, this is principal feature of higher education since most quality attributes cannot be seen, felt, or touched in advance and the production and consumption of the service are performed simultaneously. That is, personal contact between students and instructors plays an important role in the service action. Consequently, the student contributes directly to the quality of service delivered, and to his or her satisfaction or dissatisfaction. Service quality in higher education especially instructors' teaching ability varied depend on many factors, most important service quality is context specific. Driscoll and Cadden (2010) in their research of teaching effectiveness found that instructor's teaching ability is influenced by the department that offers the course, course's requirement- core or elective, and the students' anticipated grade.

The development of quality management in the education sector still considered new compared with other sectors (Ramseook-Munhurrun, *et al.*, 2010). Attention on service quality in the education setting increasing due to the demand for excellence in education (Sahney *et al.* 2004). In recent years, numerous empirical studies on higher education have shown several examples of

the successful use of systematic quality management in education (Lagrosen *et al.* 2004; Stodnick & Rogers, 2008). Ling *et al.* (2010) conducted a study on 458 undergraduate business students from a private university to evaluate the determinants of perceived service quality of higher education institution and found that contact personnel, access to facilities, cost of courses offered, physical facilities of the tertiary institution and resource input model of education quality were positively related to the overall students' perceived service quality. However, according to Douglas *et al.* (2006) the most important aspects of service quality in HEI are those associated with teaching and learning.

Dimension of service quality

The quality dimensions can be classified into technical quality and functional quality (Gronross, 1998). The technical quality or outcome quality of the process can be measured objectively; it is practical result of service. The functional quality or process quality dimension is often perceives in subjective manner and is related to the interaction between service provider and customer (Gronross 2001). Functional quality can be divided into tangible and intangible; the intangible aspects of quality include reliability, responsiveness, assurance, and empathy (Banwet and Datta, 2003). The functional quality very much relate to higher education service where influence of interaction between instructors and students very significant. Due to the abstract nature of the concept of service quality and the characteristics of the service, measuring service quality appears to be a complicated and difficult evaluated (Sultan and Wong, 2010; Hoffman and Bateson, 2006; and Parasuraman *et al.* 1985).

Service quality is generally defined as a consumer's perceived or impress about superiority of an entity (Cronin and Taylor, 1992; Parasuraman *et al.* 1985, 1988; and Bitner and Hubbert, 1994). Moreover, service quality is context-specific (Dagger *et al.* 2007; and Sultan and Wong, 2010) such as it depends on nature of work, environment, and culture. Thus, it is attached to different meanings and inferences depend on contexts. There is no conclusive definition of service quality. In order to define service quality in the right perspective, it is vital to study in the context of service being study (Lagrosen *et al.* 2004). In complement to that, to comprehend the service quality in educational sector, we must have strong understanding of service quality attributes in other sectors and to do some adaptation as necessary.

Approach in measuring service quality

A number of researchers have provided lists of service quality dimensions, but the best known service quality dimensions is SERVQUAL developed by Parasuraman *et al.* (1985, 1988). The SERVQUAL is based on the assumption that customers are able to express their expectation of service quality and could distinguished these from their perception of the actual service quality being provided; the instrument is based on the different between perception and expectation (Parasuraman *et al.* 1985, 1988). While the SERVQUAL instrument has been widely used, it has been subjected to certain criticisms. SERVQUAL has been much criticised over the years

(Cronin and Taylor, 1992; and Asubonteng *et al.* 1996). Cronin and Taylor (1992) disagreed with the concept of perception minus expectation and propose alternative measurement, SERVPERF which utilize the perception only in the service quality model. Both of SERVQUAL and SERVPERF are based on the dimensional approach to service quality (Sultan and Wong, 2010); service dimensions are conceptualized as component of service quality construct. Whereas, Dabholkar *et al.* (2000) determine service dimensions as antecedents to overall service quality construct. However, the antecedents concept is more acceptable and being used lately (Dagger and Sweeney, 2006; and Dagger, Sweeney and Johnson, 2007). Accordingly, there seems to be consensus among researchers that satisfaction and service quality are two distinctive constructs; however, dissimilarity in their definitions are not always clear (Choi *et al.* 2004; Chen and Ting, 2002; and Spreng and Mackoy, 1996). Parasuraman *et al.* (1988) and Bitner (1990) argued that customer satisfaction is an antecedent of service quality. On the other hand, many researchers (such as Cronin and Taylor, 1992; Dabholkar *et al.*, 2000; and Dagger and Sweeney, 2006) believed that it is service quality that leads to customer satisfaction. As such, selecting a reliable method to assess the service quality is very important. There are many models and instruments developed and used in research to determine service quality in higher educational institution. Many researchers have adapted SERVQUAL scale (Parasuraman *et al.* 1985, 1988), SERVPERF (Cronin and Taylor, 1992), and HEdPERF (Abdullah, 2005) are among the service quality models that have been used to measure higher educational service quality by incorporating student satisfaction into their survey instrument.

The present study, as mentioned before sets out to diagnose the effects of service quality dimensions on perceived service quality (teaching), student satisfaction and behavioural intentions of the students in the classroom environment by using an integrated scale. The study takes the view, that perceived service quality is led to satisfaction, in agreement with the empirical research by Cronin and Taylor (1992); and Dagger and Sweeney, (2006). The following section discusses briefly the literature of the integrated model dimensions or constructs as developed by previous researchers.

Behavioural intentions

Studies showed that perceived service quality and service satisfaction have mixed impact on behavioural intentions. Many researchers (such as Cronin and Taylor 1992; and Dabholkar *et al.* 2000) have found that service quality is indirectly related to behavioural intentions through service satisfaction as mediating variable. However, Cronin, Brady, and Hult 2000 in their study found that service quality is directly impact on behavioural intentions. Accordingly, students' intention to re-attend or recommend lectures is dependent on their perceptions of quality and the satisfaction they received from attending previous lectures (Banwet and Datta, 2003).

Student satisfaction

Kim *et al.* (2008) describe customer satisfaction as results from customers having good experiences. Ott and van Dijk (2005) assert that customer satisfaction is an important indicator of the performance of an organization. According to Storbacka *et al.* (1994), a satisfied customer

creates a strong relationship with the provider and this leads to customer retention or customer loyalty and generates steady revenues and profit to the firm. When service quality increases, correspondingly, the satisfaction with the service will increase and intentions to reuse the service is also increase (Dagger, Sweeney, and Johnson 2007). Number of studies has confirmed that service quality is an antecedent to customer satisfaction (Cronin and Taylor, 1992; Dabholkar *et al.* 2000; and Dagger and Sweeney, 2006). Satisfaction is an affective, feeling-based, and subjective therefore, satisfaction is hard to measure accurately (Dabholkar *et al.* 2000).

Thus, customer satisfaction as mention above is a critical factor that determines the quality of the product or service. In higher education sectors, student satisfaction is considered to be an indicator of service quality delivered (Wiers-Jenssen *et al.* 2002). Wiers-Jenssen *et al.* (2002) conducted a study in Norway to determine student satisfaction in relation to learning experience. They found that the academic and pedagogic quality of teaching are important factors in determining student satisfaction. Banwet and Datta (2003) in their study believed that satisfied students are likely to attend another lecture delivered by the same instructor or opt for another module or course taught by the instructor. However, social climate, aesthetic aspects of the physical infrastructure and the quality of services from the administrative staff are also influencing overall student satisfaction (Rapert *et al.* 2004; and Diamantis and Benos 2007).

Perceived service quality

Customers usually have some expectations of service provided by providers before receiving the actual service and this expectations will be compared to the actual perception of the provided service p. The degree and gap between service perception and customer expectations is defined as service quality (Parasuraman *et al.* 1985, 1988). Thus, perceived service quality in classroom teaching can be described when lecturer meets or exceeds students' expectation. Accordingly, Thai students place teaching and ability of lecturers to communicate skilfully is very important attributes in selecting international universities (Srikatanyoo and Gnoth, 2005). Meanwhile, student satisfaction with the services offered at a university is influenced by students' perceived service quality (Gruber *et al.*, 2010).

Service quality dimensions

Reliability

The reliability dimension is one the strongest effect on perceived lecture quality (Banwet and Datta, 2003). Reliability in teaching refers to instructors' ability to deliver the lecture dependably, accurately, and consistently (Stodnick and Roger, 2008). Accordingly, the ability of instructor to deliver lecture clearly, emphasis on the relevance and practicality of the subject, the punctuality of the instructor, and the instructor's sincerity and problem solving ability are rated as very important factors contributing to a superior teaching quality (Banwet and Datta, 2003).

Responsiveness

Instructor responsiveness is important dimensional of student perception toward teaching quality. Among the indicators of responsiveness that students expect from the instructors are: respond

promptly when needed; willing to go out of his or her way to help students; always welcomes student questions and comments; availability and approachability outside class hours (Stodnick and Roger, 2008; Banwet and Datta, 2003).

Empathy

The instructors or faculty members' empathy and understanding of students' problems and needs can greatly influence perceived service quality. Students are desired by the faculty members to be attentive and understanding towards them. According to Stodnick and Roger (2008) and Banwet and Datta (2003), the faculty member must be: genuinely concerned about the students; understood the individual needs of students; put the student's best long-term interests in mind; and encourages and motivates students to do their best. This reflects faculty members' empathy.

Tangibles

Physical evidence of the college or university will provide first impression of service quality and it is very important to student perceived service quality judgments. Generally, good appearance of the physical facilities, equipment, personnel and written materials create positive impressions. A clean and organized appearance of a college or university, its staff, its premises, restrooms, equipment, classrooms, workshops, laboratories, library, computer and information systems can influence students' impressions about the college or university. Jones *et al.* (1996) study on international business students attending colleges and universities in the United States and found that tangibles is one of the most important factors in their assessment of educational service quality. Tangibles aspect such as classroom environment, quality of presentations and the appearance of instructors are influenced on students' perception of teaching quality (Banwet and Datta, 2003; Markovic, 2006; and Hill and Epps, 2010). In numerous of studies students considered tangibles a very important factor to their satisfaction with educational service quality (Arambewela and Hall, 2006; Markovic, 2006; and Banwet and Datta, 2003).

Outcome

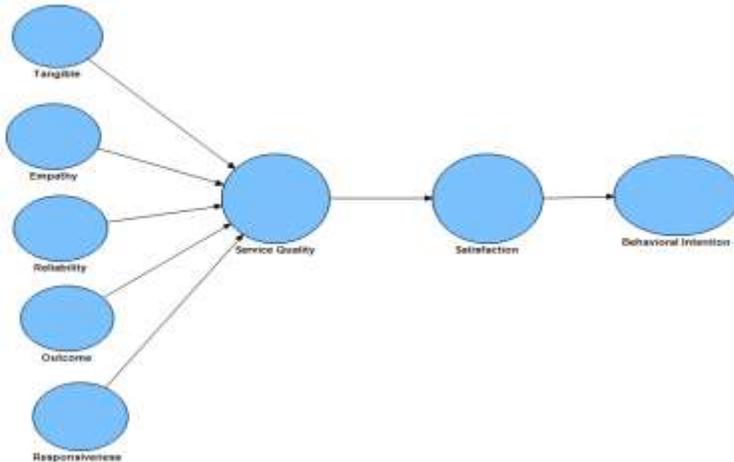
Outcome or technical quality is also a vital dimension that affects perception of service quality by students. The technical dimension is rated the most important factor contribute to perception of service quality by students in Banwet and Datta, (2003) study. In their survey of 168 students who attended four lectures delivered by the same instructors, they found that students placed more importance on the outcome of the lecture than any other dimension. The outcome or technical quality in this study refer to: knowledge and skills gained during lecture, availability of class notes and reading materials, instructor's feedback on assessed work, and coverage and depth of lecture (Banwet and Datta, 2003).

THEORETICAL FRAMEWORK

A theoretical framework for teaching service quality is developed based on literature review and discussions presented above. Figure 1 shows the service quality dimensions, namely, tangibles,

responsiveness, reliability, empathy, and outcome; perceive service quality construct; student satisfaction construct; and behavioural intentions construct. All the constructs/dimensions have been explained in the above section.

FIGURE 1: TEACHING SERVICE QUALITY FRAMEWORK



Source: adapted from Dabholkar *et al.* (2000).

Hypotheses

Prior discussion has led to a brief examination of the existing literature and the resultant research gaps led to the development of the hypotheses in this research. The eleven hypotheses are:

- H1: Tangibles dimension is positively related to the students' perceived service quality.
- H2: Responsiveness dimension is positively related to the students' perceived service quality.
- H3: Reliability dimension is positively related to the students' perceived service quality.
- H4: Empathy dimension is positively related to the students' perceived service quality.
- H5: Outcome dimension is positively related to the students' perceived service quality.
- H6: Students' perceived service quality is positively related to student satisfaction.
- H7: Student satisfaction is positively related to behavioural intentions.
- H8: Student satisfaction mediates the relationship between perceived service quality and behavioural intentions.

METHODOLOGY

Instrument

Basically the instrument was adapted from Dabholkar *et al.* (2000). The instrument has been modified in order to suit the context of the study. However, the service quality dimensions: that is functional quality aspects of service for this study have been adopted from SERVQUAL (Parasuraman, 1988); and a technical dimension, that is, outcome has been adopted from Banwet and Datta (2003). The perceived service quality, student satisfaction, and behavioural intentions constructs have been adopted from Dabholkar *et al.* (2000). All the items in this study adapted or adopted from previous studies, namely, Stodnick and Roger (2008), Banwet and Datta (2003), Markovic (2006), and Dabholkar *et al.* (2000). To establish support for content validity a panel of lecturers reviewed the constructs and the initial set of measure items. Based on their suggestions few items were changed in the wording and no item deleted. This study adapted 7-point Likert-type scale to assess the model. All constructs were reflective since the items reflect the meaning of the construct. Reflective indicators mean they are measured the same underlying phenomenon (Chin, 1998).

Sample

The population for this study was students enrolled in the university. The sampling unit was included all the current full-time students at the university. The university is one of the newly established universities in Malaysia; with an estimated student population of 3,000 pursuing 20 programs in five faculties. Students who have completed at least one semester of their study were selected as sample because they are familiar with the teaching style and services provided at the university as compared to the first semester students. The general rule for the minimum number of respondents or sample size is five-to-one ratio of the number of independent variables to be tested. Hair *et al.* (2010) suggested that the acceptable ratio is ten-to-one. Since there are 7 independent variables in this study, a minimum sample size of 70 respondents would be appropriate.

The self-administer surveys questionnaire were randomly distributed to the students during class hours by research team. The time allocated for the students to answer the questionnaire is 15 minutes. The verbal consent from each student was requested before they answer the survey questionnaire. The confidentiality of each set of questionnaire was guaranteed with diligence; the questionnaires do not contain any of the names of the students. Consequently, this study was able to collect 168 samples. Therefore, the response rate achieved was considered adequate for the study.

Results and Data analysis

This study used partial least square structural equation modelling (PLS-SEM) tool to evaluate the manner in which the constructs presented in Figure 1 might relate to each other. The PLS-SEM technique is statistical method that has been developed for the analysis of latent variable structural models involving multiple constructs with multiple indicators. PLS-SEMs have a number of potential strengths, including ability for the testing of the psychometric properties of

the scales used to measure a variable, as well as the strength and the direction of relationships among the variables (Akter *et al.* 2011).

The PLS-SEM is consisted of two sets of testing equations: first, the assessment of measurement model, which is the process of calculating the item reliability, validity; the second, the assessment of the structural model, which is the method of determine the appropriate nature of the relationships (paths) between the measures and constructs. The estimated path coefficients indicate the sign and the power of the relationships while the item's weights and loadings indicate the strength of the measures (Hair, Ringle and Sarstedt, 2011). The confirmatory factor analysis was first conducted to assess the measurement model; then, the structural relationships were examined (Anderson and Gerbing 1988; Hair *et al.*. 2010).

Measurement Model

The two main criteria used for testing measurement model are validity and reliability. The reliability of a research instrument concerns the extent to which the instrument produces consistency results in repeated measurements, whereas validity is the degree to which a test of how well an instrument that is developed measures and what is supposed to measure (Sekaran and Bougie 2010). To validate our measurement model, three basic approaches to validity were assessed: content validity/construct validity, convergent validity, and discriminant validity.

Construct validity

Construct validity refers to whether the instruments correlates with the theories around which the test is designed (Sekaran and Bougie 2010). Construct validity is assessed, first, by looking at the respective loadings and cross loadings if there are problems with any particular items (Table 1). The cut off value of 0.5 for loadings is considered significant (Hair *et al.*. 2010). Item which has loading value of higher than 0.5 and having cross loading was deleted. In this current study, four items were deleted due to low loading value and cross loading (Hulland, 1999). Two items from Tangible construct and one item from Service Quality construct were deleted due to low loading value and one item from Satisfaction construct was deleted due to cross loading. As the result Table 1 shows all the items measuring a particular construct loaded highly on that construct and loaded lower on the other constructs thus confirming construct validity.

TABLE 1 LOADINGS AND CROSS-LOADING

Item	1	2	3	4	5	6	7	8
T1	0.762	0.244	0.116	0.156	0.148	0.380	0.350	0.393
T3	0.857	0.336	0.177	0.246	0.228	0.453	0.416	0.392
T4	0.655	0.285	0.239	0.111	0.274	0.302	0.237	0.236
E1	0.300	0.729	0.349	0.232	0.394	0.358	0.226	0.166
E2	0.364	0.817	0.396	0.247	0.517	0.418	0.298	0.264
E3	0.250	0.812	0.443	0.364	0.489	0.408	0.428	0.385

E4	0.206	0.780	0.553	0.433	0.599	0.382	0.384	0.255
E5	0.339	0.754	0.489	0.290	0.494	0.479	0.449	0.319
REL1	0.328	0.543	0.864	0.565	0.688	0.511	0.504	0.293
REL2	0.207	0.549	0.876	0.545	0.637	0.421	0.434	0.257
REL3	0.126	0.492	0.908	0.598	0.702	0.371	0.372	0.165
REL4	0.063	0.438	0.825	0.556	0.664	0.354	0.347	0.129
REL5	0.178	0.416	0.799	0.467	0.499	0.412	0.339	0.163
OC1	0.191	0.371	0.548	0.758	0.433	0.409	0.298	0.207
OC2	0.213	0.235	0.523	0.845	0.392	0.437	0.397	0.271
OC3	0.176	0.357	0.573	0.898	0.454	0.563	0.466	0.239
OC4	0.202	0.364	0.494	0.824	0.453	0.592	0.488	0.303
RES1	0.250	0.580	0.615	0.450	0.856	0.361	0.385	0.234
RES2	0.164	0.574	0.625	0.439	0.866	0.381	0.318	0.178
RES3	0.153	0.472	0.658	0.461	0.830	0.343	0.310	0.128
RES4	0.337	0.551	0.643	0.430	0.849	0.494	0.419	0.282
SQ1	0.383	0.469	0.448	0.534	0.410	0.888	0.587	0.393
SQ3	0.495	0.468	0.404	0.537	0.402	0.930	0.611	0.482
SQ4	0.478	0.497	0.479	0.584	0.467	0.887	0.653	0.521
S1	0.264	0.417	0.412	0.371	0.353	0.473	0.835	0.630
S2	0.464	0.367	0.300	0.395	0.308	0.610	0.899	0.726
S3	0.430	0.419	0.421	0.478	0.363	0.712	0.889	0.640
S5	0.330	0.376	0.523	0.483	0.454	0.481	0.734	0.421
BI1	0.393	0.250	0.168	0.230	0.172	0.497	0.655	0.862
BI2	0.491	0.330	0.225	0.252	0.221	0.472	0.696	0.915
BI3	0.373	0.410	0.353	0.349	0.348	0.423	0.655	0.867
BI4	0.307	0.252	0.129	0.243	0.155	0.412	0.563	0.854
BI5	0.402	0.332	0.174	0.273	0.181	0.456	0.602	0.862

Bold values are loading of items which are above the recommended value of 0.5

Convergent validity

When multiple items are used for an individual construct, the researcher should be concerned with the extent to which the items demonstrate convergent validity. The measurement model was tested for convergent validity which is the degree to which multiple items to measure the same concept are in agreement. Anderson and Gerbing (1988) stated that convergent validity is established if all factor loadings for the items measuring the same construct are statistically significant. According to Hair et al. (2010) convergence validity should be accessed through factor loadings, composite reliability and average variance extracted. The loadings for all items exceeded the recommended value of 0.5 (Hair *et al.* 2010). Composite reliability (CR) values (see Table 2), which is a measure of internal consistency, the value ranged from 0.805 to 0.932

which exceeded the recommended value of 0.7 (Hair *et al.* 2010). The average variance extracted (AVE) measures the variance captured by the indicators relative to measurement error, and it should be greater than 0.50 to indicate acceptability of the construct (Fornell and Larcker, 1981; Henseler, Ringle, and Sinkovics, 2009). Table 2 shows that the average variances extracted range from 0.582 to 0.813, which are above the acceptability value.

TABLE 2 RESULTS OF MEASUREMENT MODEL

Construct	Items	Loading	CR¹	AVE²
Tangible	T1	0.762	0.805	0.582
	T3	0.857		
	T4	0.655		
Empathy	E1	0.729	0.885	0.607
	E2	0.817		
	E3	0.812		
	E4	0.780		
	E5	0.754		
Reliability	REL1	0.864	0.932	0.732
	REL2	0.876		
	REL3	0.908		
	REL4	0.825		
	REL5	0.799		
Outcome	OC1	0.758	0.900	0.693
	OC2	0.845		
	OC3	0.898		
	OC4	0.824		
Responsiveness	RES1	0.856	0.913	0.724
	RES2	0.866		
	RES3	0.830		
	RES4	0.849		
Service Quality	SQ1	0.888	0.929	0.813
	SQ3	0.930		
	SQ4	0.887		
Satisfaction	S1	0.835	0.906	0.709
	S2	0.899		
	S3	0.889		

	S5	0.734		
Behavioural Intention	BI1	0.862	0.941	0.761
	BI2	0.915		
	BI3	0.867		
	BI4	0.854		
	BI5	0.862		

Note:

1. Composite reliability (CR) = (square of the summation of the factor loading)/
 {(square of the summation of the factor loading) + (square of the summation of the error variances)}

2. Average variance extracted (AVE) = (summation of the square of the factor loadings)/
 {(summation of the square of the factor loadings) + (summation of the error variances)}

Table 3 summarizes the results of the measures in our research model. The results show that all the constructs, i.e., tangible, empathy, reliability, outcome, responsiveness, service quality, satisfaction, and behavioural intention are all valid measures of their respective constructs based on their parameter estimates and statistical significance (Chow and Chan 2008). All measures are significant on their path loadings at the level of 0.001

TABLE 3 SUMMARY RESULTS OF THE MODEL CONSTRUCT

Construct	Items	Standardized Estimate	t-value
Tangible	T1	0.762	13.05
	T3	0.857	29.28
	T4	0.655	8.24
Empathy	E1	0.729	14.02
	E2	0.817	26.62
	E3	0.812	22.86
	E4	0.780	17.28
	E5	0.754	17.70
Reliability	REL1	0.864	35.82
	REL2	0.876	33.26
	REL3	0.908	37.37
	REL4	0.825	21.93
	REL5	0.799	19.17
Outcome	OC1	0.758	14.27
	OC2	0.845	22.80
	OC3	0.898	47.93
	OC4	0.824	29.01
Responsiveness	RES1	0.856	26.12
	RES2	0.866	26.28
	RES3	0.830	18.25

Service Quality	RES4	0.849	37.60
	SQ1	0.888	38.55
	SQ3	0.930	78.00
	SQ4	0.887	33.14
Satisfaction	S1	0.835	18.98
	S2	0.899	59.56
	S3	0.889	50.54
	S5	0.734	14.83
Behavioural Intention	BI1	0.862	41.10
	BI2	0.915	77.76
	BI3	0.867	31.40
	BI4	0.854	29.86
	BI5	0.862	30.41

Discriminant validity

Next we validated the discriminant validity of our instrument. The discriminant validity is represented the extent to which measures of a given construct differ from measures of other constructs in the same model. In a PLS context, the most important criteria for adequate discriminant validity is that a construct should share more variance with its items than it should shares with other constructs in a given model (Hulland, 1999). It was assessed by examining the correlations between the measures of potentially overlapping constructs. Items should load more strongly on their own constructs in the model, and the square root of the average variance extracted for each construct is greater than the levels of correlations involving the construct (Fornell and Larcker, 1981). As shown in Table 4, the square root of the average variance extracted for each construct is greater than the items on off-diagonal in their corresponding row and column, thus, indicating adequate discriminant validity. The inter-construct correlations also show that each construct shares larger variance with its own measures than with other measures. In sum, the measurement model demonstrated adequate convergent validity and discriminant validity.

TABLE 4 DISCRIMINANT VALIDITY OF CONSTRUCTS

Construct	1	2	3	4	5	6	7	8
1. Tangible	0.763							
2. Empathy	0.378	0.779						
3. Reliability	0.224	0.575	0.855					
4. Outcome	0.233	0.401	0.639	0.833				
5. Responsiveness	0.277	0.642	0.747	0.522	0.851			
6. Service Quality	0.503	0.531	0.492	0.613	0.474	0.902		

7. Satisfaction	0.449	0.466	0.475	0.506	0.427	0.685	0.842
8. Behavioural Intention	0.455	0.362	0.244	0.309	0.250	0.519	0.872

Diagonals (in bold) represent the square root of the average variance extracted while the other entries represent correlations.

Reliability analysis

To analyse the reliability/internal consistency of the items, we used the Cronbach's alpha coefficient. Table 5 shows all alpha values are above 0.6 as suggested by Nunnally and Berstein (1994). Another way to determine internal consistency is by looking at composite reliability values. The composite reliability values also ranged from 0.805 to 0.932 (Table 2). A composite reliability of 0.70 or greater is considered acceptable (Fornell and Larcker 1981). As such we can conclude that the measurements are reliable.

TABLE 5 RESULT OF RELIABILITY TEST

Construct	Cronbachs Alpha	Number of items
Tangible	0.638	3(5)
Empathy	0.838	5(5)
Reliability	0.908	5(5)
Outcome	0.853	4(4)
Responsiveness	0.874	4(4)
Service Quality	0.885	3(4)
Satisfaction	0.862	4(5)
Behavioural Intention	0.921	5(5)

Note: Final items numbers (initial numbers)

The method variance is identified as a potential issue in this study due to the self-report nature of the survey. The instrument was also organised into various sections by separating the variables in an effort to reduce single-source method bias (Podsakoff, *et al.* 2003). A further Harman's one-factor test was also performed for common method bias. The test revealed the presence of six distinct factors with eigenvalue greater than 1.0. The six factors together accounted for 68.15 percent of the total variance; the first (largest) factor did not account for a majority of the variance (38.91%). Thus, our analysis showed that no general factor was present. While the results of these analyses do not preclude the possibility of common method variance, they do suggest that common method variance is not of great concern and thus is unlikely to confound the interpretations of results.

Hypotheses testing

The standardized PLS path coefficients for testing the structural model are shown in Figure 2. Table 6 present the results and hypothesis testing. The findings support the hypotheses H1 and H4 to H8; hypotheses H2 and H3 were not supported (Table 6). Responsiveness and reliability were not significant predictors to service quality (H2 and H3). The R^2 value of service quality construct was 0.554 suggesting that 56.8% of the variance in service quality can be explained by tangible, empathy, reliability, outcome and responsiveness. The H1 and H4 to H8 were supported with t -value range from 2.956 to 18.419. The R^2 value of satisfaction construct was 0.470 suggesting that 47% of the variance in satisfaction can be explained by service quality and behavioural intention. The H8, student satisfaction mediates the relationship between perceived service quality and behavioural intentions was supported because the relationship between service quality and satisfaction, and satisfaction with behavioural intention were significant. In order to assess if there is full or partial mediation, we also used the method suggested by Baron and Kenny (1986). We found that student satisfaction is fully mediated the service quality and behavioural intention.

FIGURE 2 RESULTS OF THE PATH ANALYSIS

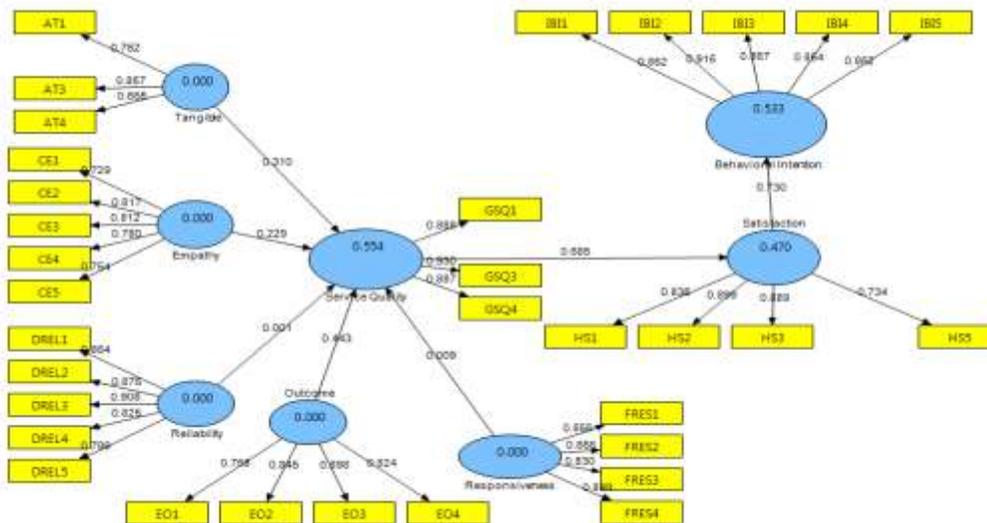


TABLE 6 PATH COEFFICIENT AND HYPOTHESIS TESTING

Hypothesis	Relationship	Beta	t-value	Supported
H1	Tangible-→Service Quality	0.310	4.675, $\rho < 0.01$	Yes
H2	Responsiveness → Service Quality	0.009	0.094, $\rho > 0.05$	No
H3	Reliability → Service Quality	0.001	0.013, $\rho > 0.05$	No
H4	Empathy → Service Quality	0.229	2.956, $\rho < 0.01$	Yes
H5	Outcome → Service Quality	0.443	5.106, $\rho < 0.01$	Yes
H6	Service Quality → Satisfaction	0.685	16.176, $\rho < 0.01$	Yes
H7	Satisfaction → Behavioural Intention	0.730	18.419, $\rho < 0.01$	Yes
H8	Service Quality→Satisfaction→B. Intention			Yes

DISCUSSION AND CONCLUSION

Higher education institutions (HEI) in Malaysia are facing competitive market challenges, customers or students are evaluated the services provided by the HEI. In this competitive environments, student perceptions of service quality and their satisfaction level of teaching process have become very important in order to attract and retain them. Thus, the main purpose of this paper is to look at the relationship between behavioural intention and related constructs; more precisely the relationships between antecedents of service quality, perceived service quality, student satisfaction and behavioural intention. Behavioural intention is perceived as being the ultimate dependent variable of the research model.

The empathy dimension indicates the lecturers' willingness to help and motivate the students. It is also reflects the sensibility and cautions to students' needs. The smallest beta value ($\beta = 0.229, t = 2.866$) shows that students still not satisfied with quality of this dimension. The results of analysis on this dimension indicate that student not satisfied with lecturer supportive behaviour toward fulfilling their needs. That is, student perceived that the lecturers did not put the interest on student development and did not encourage them to do their best in the study. Accordingly, the empathy dimension was found to have positive impact on student perception of teaching/service quality and satisfaction with the instructor/lecturer (Standifird *et al.* 2008; Hancock, 2000). The tangible dimension focuses on lecturer appearance and physical facilities available in the classroom. From the analysis the dimension generated the β value equal to 0.310 and t value equal to 4.639 that show the dimension is still not adequate to fullfil student

needs; the students learning process were affected by classroom comfort. However, we did not find that the lectures/instructors attire and appearance affected student learning process. The tangible dimension is very important in teaching and learning process, that is modern, fully equip and clean classroom would give positive perception of teaching/service quality provided by instructor/lecturer (Hill and Epps, 2010). The outcome dimension is highlighted the technical part of service quality. Student evaluate the lecturer/instructor in term of knowledge and skills gained, the availability of class note and reading materials, instructor's feedback on assessed work, and the coverage and depth of the lecture. From the analysis, we found that the dimension was paramount in determine service quality (with $\beta = 0.443$ and $t = 4.959$). That is, in an educational context, the lecturer/instructor performance during the teaching or service transactions is very important.

Our final conclusion was that the reliability and responsiveness constructs were not very important in determining perceived service quality from student perspective. The β values of the two dimensions were not significant. It was apparent also that the two constructs were perceived by student being delivered effectively.

The results demonstrate the student satisfaction was the most influential factor, directly and strongly related to behavioural intention. The service quality construct has only indirect relationship to service quality via student satisfaction. This study revealed that the service quality, satisfaction and behavioural intention are distinct concepts. Taking into consideration the significance levels of the path coefficients, satisfaction and behavioural intention dimensions have the highest degree of association with service quality either directly or indirectly. That shows the service quality and satisfaction dimensions are very important in determining student behavioural intention, thus academic leaders should emphasis more on the dimensions. Such insight can help the leaders when making decisions concerning the allocation of scarce resources.

We suggest that students should be viewed as customers because higher education institutions are facing great competitions in attracting students and thus, they are moving towards marketing approach to draw student interest toward their institutions (Sultan and Wong, 2010). Satisfying students is important for positive word of mouth and referral decisions. From the analysis techniques presented here, tangible, empathy and outcome (technical quality) can be the source of help to instructors/lecturers. They should identify the components and subcomponents that are important in increasing teaching quality and eventually student satisfaction. If the constructs (tangible, empathy, and outcome) are improved, this improvement will benefit other constructs as well.

Due to the diversity of courses offered in other higher education institutions and having different facilities, equipment, staff and faculty members, thus, the results of this study are contributed very limited to be generalized to other institutions. Hence it is recommended that every institution carry out a similar study so that a model with more conformity will be produced for planning to improve teaching services quality.

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