Student Perception towards Higher Education Service Quality: A Case Study at Research and Non-Research Universities in Malaysia

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ABSTRACT

In determining the service quality in public and private universities or Higher Education Institutions (HEIs), customer satisfaction (for service-oriented organizations) or, in this case of quantitative research, students' satisfaction evaluation and assessment is very significant. Universities constantly gain, sustain, and develop deeper relationships with their students to stay competitive. The purpose of this research paper is, first and foremost, to examine the relationship between Parasuraman's SERVQUAL model service quality dimensions (which are tangibility, reliability, responsiveness, assurance, and empathy) and students' satisfaction. Secondly, this study aims to identify critical factors in Parasuraman's SERVQUAL model service quality dimensions (tangibility, reliability, responsiveness, assurance, and empathy) that contribute the most towards students' satisfaction. This study used a set of questionnaires (online survey) for 200 respondents (students pursuing bachelor's degrees) from two public universities in Selangor, randomly chosen from the list of public universities available in Selangor. The two public universities are Universiti Kebangsaan Malaysia (UKM as a research university) and Universiti Islam Antarabangsa Malaysia (UIAM as a non-research university). A simple random sampling is used in this research. This empirical finding analyzed by correlation and multiple regression provides evidence for Parasuraman's SERVQUAL model in an academic context, which was related to the factors that contribute towards students' satisfaction, thus attracting more students to the respective university or higher education institutions in the future.

Keywords: Service quality, SERVQUAL, Public higher education institutions.

INTRODUCTION

Background of the Study

People view education from tertiary education, like Higher Education Institutions (HEIs), as important as they view one's needs. Whether private or public universities, tertiary education has become important for people as it helps students gain knowledge and become more competent and skilful in their field (Kahl, 2014). The learning methods in higher education institutions are also different compared to 10 to 20 years ago. Nowadays, students are more mobilized. Students (whether they are from private or public universities) want a perfect learning environment in higher education. This includes learning support, learning and teaching qualities, and excellent service quality provided by the university.

Private universities have been viewed as pioneers in terms of service quality in the education industry in Malaysia. Some parents and students expect better qualities in private universities than in public universities, as private universities tuition fees are more expensive than those public universities, which the Government of Malaysia subsidizes. With more funds, private universities can use the extra allocated funds to improve their service qualities, such as investing more in updated or advanced facilities for the benefit of students and staff or improving the communication skills of academic and non-academic staff by making them attend seminars (borne by the university), so they become more competent in delivering excellent service quality to the students.

However, the service quality for public higher education institutions like public universities is improving yearly.

This is because today's public universities differ from 10 to 20 years ago. In today's competitive market, public universities have shifted their service quality delivery to par with other standards of high-performing international universities, such as Vanderbilt University in the United States and Lancaster University in the United Kingdom, both of which are in the top 200 (QS World University Ranking 2021). Public universities in Malaysia need to compete (in terms of service quality) with other universities, such as public universities, private universities, and international universities (that have branch campuses in Malaysia), to attract more students to the university.

Students have several choices in today's dynamic academic world to select suitable universities. This has required public tertiary education institutions such as Universiti Kebangsaan Malaysia (UKM) and Universiti Islam Antarabangsa Malaysia (UIAM) to maintain their reputation for providing excellent quality services and knowledge delivery. There should be a profound analysis of the factors that allow tertiary institutions to spark interest in new students while at the same time maintaining the number of its current students. For service-oriented organizations such as public universities that pledge to provide better knowledge or gain to their students, providing excellent service quality will be the primary priority (Bigné, Moliner, & Sánchez, 2003). Through excellent service quality, tertiary institutions indirectly entice new students and retain the satisfied current students. From the perspective of long-term, outstanding service quality performance would help to bring a positive image to tertiary education institutions and become well-known as more and more students want to further their studies there (Azoury, Daou, & Khoury, 2014). Service quality is a crucial principle that helps students determine which colleges or universities to enrol in. Service organizations like higher education institutions are under relentless pressure to outperform their rivals to preserve excellent service quality (Shekarchizadeh, Rasli, & Hon-Tat, 2011). This may be one factor that separates a university in one's favour from the rest. Most public universities must compete with other public and private universities to achieve better rankings in a country or the world (Naidu & Derani, 2016). Some universities might focus too much on their research and thus ignore performing better service quality for the students. Public universities must coordinate the delivery of their services and ensure that a coherent strategy is effectively executed to maintain a high standard of service quality, thereby benefiting students (A. Parasuraman, Zeithaml, & Berry, 1985).

Because students are classified as their real clients, many experts view high-quality services in tertiary education as products that can be commoditized. According to (Chapman, Tan, & Tan, 2010), it is critical to enhance students' needs as they could become potential valued human resources, thus contributing significantly to the development of a country like Malaysia. (Kotler & Armstrong, 2018) View a delighted person towards service by a service-oriented organization like higher education institutions as services that exceed one's expectations. (Marra, 1989) view that the fulfilment of an individual needs, wants, expectations, and demands is also part of one's satisfaction. According to (Hasan, Ilias, Rahman, and Razak, 2009), the key principle for withdrawing student applications for a higher education institution is the expectation that the institutions cannot meet or that what was promised is not fulfilled. Most of Malaysia's higher education institutions attach great importance to meeting student standards, which are similar to what a business or a company is also doing; among the workers in the higher education institutions, they still lack an understanding of the customer point of view, and it has become a common disadvantage for majority of tertiary education institutions (Tambi, Ghazali, & Yahya, 2008). (Ollin, 1996) states that the level of educationists equipped with professional ethics and outstanding certificates of qualifications could positively impact educational institutions in the long run. Academicians and fellow professors still have much room for improvement, which shows that fellow academicians also have a significant role in developing an organization's growth (Naidu & Derani, 2016).

As the world of academics is changing nowadays, satisfaction is vital in students' eyes, especially regarding the degree of service quality in educational institutions (Zeithaml, Berry, & Parasuraman, 1996). According to (Berry and Parasuraman, 1991), the primary predictor for success in a service-oriented business is to outperform the service quality beyond what a customer can imagine (in this case, it is the students). Therefore, this paper intends to examine the aspects of service quality and student satisfaction, respectively, from the perspective of public university students.

Statement of the Research Problem

Some public universities' teaching curricula are not competitive enough for the Malaysian market (Rasdi, 2018).

This is because most lecturers focus more on academic writing and research for journal publication purposes (Abedin, Taib, & Jamil, 2014). In addition, some lecturers are being pushed by upper management to write a minimum of 25 to 30 articles per annum as they want to improve their global university rankings, images, and achievements (Alatas, 2020). This has led to many lecturers underperforming in their academic teaching, especially during class learning sessions with the students. There would be a situation where the lecturer might neglect students due to his or her full commitment to perfecting the research paper to satisfy the universities' annual key performance index (KPI) requirements (Othman, Mujir & Ibrahim, 2010). Due to lecturers' tight schedules for completing articles, lecturers did not have time for students' appointments or personal consultation with students, especially for assignments or group projects and improvement in character building with their respective pupils or assigned mentees (J. Douglas, McClelland, & Davies, 2008). Therefore, lecturers do not give individualized attention to students, which affects the students' service experiences (Gamage, Suwanabroma, Ueyama, Hada, & Sekikawa, 2008).

Apart from that, the high unemployment rate among university graduates proves a disconnect between what the students have learned in the universities and what the employers want from them (Alatas, 2020). This is due to a skewed view of the objectives of tertiary institutions along with the quality of educators (Hanapi & Nordin, 2014). As the world is shifting towards technological innovation, non-competent educators are likely not to possess the fundamental skills of communication and information technology (IT), and this group of people does not even bother to learn new skills that might be useful shortly (Wan Kamaruddin & Ibrahim, 2010). Thus, educators might face difficulty during their lectures in class.

Shortage of non-academic staff also contributes to the low quality of service performance towards the students in the university. According to (Rafidi, 2020), the university's non-academic staff are burdened with many tasks, from student welfare to university management. This will make non-academic staff tired and unsatisfied with their job. (Che Nawi et al., 2016) They believe that non-academic staff who are not satisfied with the tasks and working environment in the university might affect the productivity of the university's human resources; thus, non-academic staff may not perform well regarding service quality towards the students. This will make students dissatisfied because of the service quality performed by the non-academic staff, thus creating a more significant gap in the service quality and students' satisfaction.

Furthermore, some of the university facilities are not in good condition. According to (Abdullah and Mohamad, 2016), some female students are unwilling to share university facilities with male students for moral and social reasons. Sharing a gymnasium, tennis court, badminton court, and other recreational areas with male students will create a general discomfort for female students. This is because male students use most of those facilities almost every evening. Similarly, the facilities offered by public universities may not be as good as those offered by their private counterparts (private universities). This is because private universities have huge, allocated funds (which they earn through expensive student fees) to purchase expensive sports and advanced leisure centres. Public higher education institutions tend to ignore the efficiency of their facility's operations, particularly the maintenance and cleanliness of the existing facilities. At the same time, excessive bureaucratic procedures such as booking arrangements will create challenges and issues in terms of usefulness and effectiveness.

All these factors lead to poor quality of service and dissatisfaction among students in universities. Some lecturers and top management academics do not realize they have been tasked with preparing students for the outside world. Lecturers and top management academics need to give enough knowledge, tools, and practice to students for them to be efficient when they join the industry, which is when they are going to work in the corporate world.

This contradicts the government's aspiration, which is to see public higher education institutions provide better service quality to the students, thus producing a lot of competitive workforces that can contribute towards the development of society and economics of Malaysia and Asian regions (Making Malaysia a regional education hub, 2020). Malaysian public universities need to change in line with current imperatives and the needs of higher education institutions (HEIs) to meet the growing demands (Nordin, 2017). Flexibility, speed, efficiency, excellence, service quality, and effectiveness are the required attributes for Malaysian higher education institutions. The Malaysian Qualification Agency (MQA) should play a pivotal role in ensuring the quality of higher education meets the international accreditation and curriculum standards, covering private and public universities that will ensure the loyalty of students. Ali et al. (2024) also raised the importance of service quality

to ensure students' loyalty and retain students in an educational context.

Former Minister of Education, Tan Sri Muhyiddin Yassin, has previously commented on students' incompetency in public and private universities (Gooch, 2011). This is because employers have long argued that undergraduates from both public and private universities in Malaysia lack critical abilities such as communication skills. Most of the time, lecturers explain the knowledge from chapter to chapter, while students only sit and listen to their lectures. There is a lack of two-way communication between the lecturer and students. There is also a situation where some universities and lecturers might not possess excellent knowledge-delivering skills, thus making students not understand what is being delivered in classes. This is because students' learning approaches should be different and vary according to the learning environment on display in the classroom (Ramsden, 1984). For instance, for business students, universities should not focus only on classroom learning; they should also allow for outdoor learning, such as field trips, to give some exposure to the business environment. This is why higher learning institutions, especially public universities, should improve their service quality, especially in the teaching or knowledge-delivering services. Not only that, parents and students are paying vast amounts of money or, in other cases, through education loans offered by financial institutions to give their children a good quality of education services in the country. Therefore, as customers, these groups have the right to demand a better education service for their children, as parents believe their children could have a better future through education. The Malaysian government wishes and always encourages public tertiary institutions to provide better service quality to their pupils, which is one of the steps to meet international education standards and align with the modern trends in the education market.

There have been many studies by previous researchers such as (de Jager & Gbadamosi, 2013), (Chui, Ahmad, Bassim, & Zaimi, 2016), (Mustaffa, Bing, Rahman, & Wahid, 2016), (Patiar, Ma, Kensbock, & Cox, 2017), (Danjum & Rasli, 2012), (Cardona & Bravo, 2012) and (Hasan et al., 2009) which emphasize on the efficiency of the service delivery which influences positively and substantially affects the understanding of students' expectation from the services experience that they get. This is why public higher education institutions should study more about providing excellent service quality to students, thus increasing students' satisfaction. Of course, the one that keeps improving its service quality will get a high university image and be recognized globally. More and more students will want to study at that university. Hence, it is proven that positive service delivery quality will improve customer satisfaction (Hartline & Ferrell, 1996).

The purpose here is straightforward and well-made, but the issue is that, compared to private universities, people's expectations of public universities seem skewed in quality terms (Choy, Yim, & Tan, 2017). This is because more and more private universities are getting recognized by global entities and bodies, such as Taylor University, which got recognition from Quacquarelli Symonds (QS World Ranking) for being Top 50 young universities (under 50 years old) in the world (Low, 2020) and UCSI University who got global recognition by Quality Assurance Agency for Higher Education, United Kingdom (UCSI Awards & Recognition, 2020). Thus, the competitiveness between public and private higher education institutions is fiercer. Even the government is worried that public universities will become a "last-hope" place for the people, especially the non-Bumiputeras, as their perception is that if the children do not get into a university, then their children will not have a bright future (Chang Da, 2007). Therefore, if non-Bumiputras cannot enter a public university, their parents will send them to study abroad or directly enter a private university like Sunway University or Taylor University. Higher education institutions (public and private) try to demonstrate their excellent service quality towards the students as they want to pull new scholars while encouraging them to enrol in their university over the rest and, simultaneously, hold the existing pupils.

Research Objectives

This study aims to determine the relationship between service quality dimensions and student satisfaction in two public universities. Several factors in service quality will be discussed and analyzed, including tangibility, reliability, responsiveness, assurance, and empathy.

RO1: To discover the relationship between Parasuraman's SERVQUAL model dimensions (tangibility, reliability, responsiveness, assurance, and empathy) and satisfaction among the students in two public higher education institutions.

RO2: To identify significant variables in service quality that contribute most to the student's satisfaction.

Significance of the Study

Service-oriented markets like higher education institutions have been one of the major sectors contributing to the development of human resources and society in Malaysia. Public higher education institutions like Universiti Kebangsaan Malaysia (UKM) and Universiti Islam Antarabangsa Malaysia (UIAM) have been the number one priority for the Ministry of Higher Education of Malaysia in alignment with the Malaysia Education Blueprint 2015-2025 (Higher Education) (Menon, 2020). As the number of public universities increases, the competition to attract customers (students) has become the number one target for these organizations. One of the strategies is to enhance its service quality towards the students, thus creating satisfaction among the students. This will allow public universities like UKM and UIAM to create a competitive advantage to champion quality services for their students; thus, these universities will be able to attract new applicants while holding current pupils. It is an important path to competitive advantage for a service-oriented organization like public universities. Suppose public universities fail to improve their service quality. In that case, it will become a significant drawback relative to its competitors, as part of its income comes from students' enrolment and tuition fees. Thus, it will affect the university's financial condition (Zammuto, Keaveney, & O'Connor, 1996). Apart from that, public universities also receive specific allocation funding from the government. Unlike private universities, they should be able to utilize their resources wisely, especially regarding service quality enhancement (Ahmad & Farley, 2014).

Regarding educational quality services, the customers for higher education institutions are not only students but also parents, government and scholarship agencies, financial institutions, and future employers of students and society (Quinn, Lemay, Larsen, & Johnson, 2009). These groups are the real stakeholders for universities and higher education institutions responsible for checks and balances (Fooladvand, Yarmohammadian, & Shahtalebi, 2015). According to (Becker, Berry, and Parasuraman, 1992), the crucial element to achieving favourable outcomes in service quality relies primarily on the service delivered to increase customer or student satisfaction. As the current market is customer-oriented and market-oriented, students can demand well-performing service quality in public universities because students are also customers in higher education institutions, and it is a university's job to fulfil those demands (Guilbault, 2016). This paper is significant because it will examine the degree of service quality and the degree of satisfaction among students through several dimensions (Parasuraman, Zeithaml, & Berry, 1988).

Previous studies such as (Hasan et al., 2009) focus on service quality and student satisfaction in private universities, whereas (Hanaysha & Mohanachandran, 2012) focus on international students' perspectives. In this research, all respondents in the sample size consist of local and international students from different faculties and campuses. Therefore, this research is expected to contribute towards a significant perspective from UKM and UIAM students (regardless of their background) regarding the relationship between service quality and student satisfaction. Public universities need to regularly assess the extent of their quality of service to maintain their competitive advantage in addressing emerging higher education sector challenges. In addition, this study hopes to help public universities or higher education institutions understand the expectations of their clients about the service provided and what they can expect in the long run.

In conclusion, the group management of UKM and UIAM must able to receive reliable data on its service quality performance towards the students so that every service performance can be reviewed and enhanced if any dissatisfaction is identified. Similarly, excellent service quality performed by public universities would generate blue ribbons and competent graduates and indirectly positively impact the institution, society, economic development, and the country's prosperity (Said, Ahmad, Yusof, & Jusoh, 2015).

LITERATURE REVIEW

The literature review is presented. The literature review begins with the options of other researchers on how the quality of service in higher education institutions like Universiti Kebangsaan Malaysia (UKM) and Universiti Islam Antarabangsa (UIAM) could affect student satisfaction from a broad perspective. This section discusses the related literature on service quality and student satisfaction, the dimensions of service quality, and their relationship. This study describes and evaluates students' satisfaction and service quality dimensions (1985 of

Parasuraman's SERVQUAL) in the two public universities (UKM and UIAM). There is no question that some higher education institutions will win if they can provide their clients with a high standard of services, and in this case, the customers and clients are referred to as students (Liu, Duan, & Li, 2010).

Student Satisfaction

In marketing research papers and literature, customer satisfaction has long been considered a key question. Many researchers (Churchill & Surprenant, 1982), (Valarie A. Zeithaml, A. Parasuraman, Leonard L. Berry, 1990), and (Fornell, Johnson, Anderson, Cha, & Bryant, 1996) have been studying the related topic. Customer satisfaction can be defined as a person's sense of pleasure or disappointment resulting from comparing the perceived performance or outcome of a product or service performed by one party to another party against his or her expectations (Kotler & Keller, 2016). Satisfaction is a function of the relative expectations and perception of success. Perceived performance is the customers' belief or view regarding the product or service experience that they experience themselves. Next, buyers' expectations, on the other hand, are influenced by services that were promised, what the company and their rivals have said about the product or service, word of mouth, peers' recommendations or reviews, and the performance of the service or product in the recent past (Krishna Naik, Gantasala, & Prabhakar, 2010). From the university perspective, the students are the real customers and one of the stakeholders in the higher education institutions industry (Guilbault, 2016). (Palacio, Meneses, & Pérez, 2002) highlighted that the student's expectations start well before he or she even applies for the university. This has led to the suggestion that universities should fully understand what students expect from them and how they should address this problem before students even apply for that university. In this study, it was important to determine the variables that can affect students' satisfaction with the provision of service from the perspective of the higher education sector.

From the research studies conducted by (Lin & Yi, 1997) and (Soutar & Mcneil, 1996), it can be concluded that the overriding factors that affected undergraduates' decision before applying for admission into a public university were the image of the institution, the academic environment, the size of the school, the employability, specific academic programs, the availability of financial aids, the student population and the social atmosphere, the geographical location and the quality of academicians and lecturers.

Specific work has given more definitions of customer satisfaction throughout the comparison. Consumers are rarely happier when service output exceeds expectations (Kotler, 2012). On the other hand, according to (Y. F. Kuo, Wu, & Deng, 2009), it is very critical in the market setup because when customers are happy with the services performed, the organization will gain significant surplus (monetary form) from the customers (through overwhelming supports). Through comparison, (Islam, Jalali, and Ku Ariffin, 2011) realize that academic-oriented organizations are more significant than non-academic ones in their findings to determine factors influencing students' satisfaction in a tertiary education institution in Malaysia. Academic practices are not limited to the classroom because anything that can build positive beliefs, attitudes, characters, and strong personalities must be included. (J. Douglas, Douglas, & Barnes, 2006), Their research on assessing students' satisfaction at universities in the United Kingdom (UK) also discovered that significant critical factors are associated with teaching- and learning-oriented and will influence students' satisfaction. If the university can deliver excellent service quality and exceed the average, students will be much happier, as it is beyond their expectations (Farahmandian, 2013). Customer fulfilment can be defined as purchasing a service by one party and the benefits they obtain from the service performed by the other party (Subrahmanyam, 2017).

Some are more concerned about the university image as it represents students' perception of the tertiary academic sector (Sung & Yang, 2008). Researchers on student satisfaction, such as (Y. C. Kuo, Walker, Schroder, & Belland, 2014), also discuss the quality of programs offered and teaching methods. There is no question that this measure of student satisfaction is essential for universities as it tells the university, especially the administration group, what they need to know and understand about students' needs and demands such as investigations should be considered as the basis of optimal features of the universities' service (Arambewela & Hall, 2008). Even the government has created a plan to use several foreign and international students in a university as one of the Key Performance Indicators (KPIs) for "check and balance" for the betterment of service quality delivery (Hanaysha, Kumar, Abdullah, & Hilman, 2012). Nguyen et al. (2024) reveal five dimensions of higher education service quality: academic aspect, nonacademic aspect, programming issues, facilities and industry interaction. Most of

these factors have a positive influence on student satisfaction.

Service Quality

Marketers view service quality as the degree to which a service needs to be accepted by the customers (Azoury et al., 2014). Based on (Ramseook-underrun, Lukea-bhiwajee, and Naidoo, 2010), service quality revolves around the notion that quality must be measured by the customer or consumer's service evaluation. Other researchers (1999) defined service quality as a system that focuses on service delivery measurement parallel to a certain level of customer expectation. Satisfied customers would spread positive word of mouth regarding the service they received, thus grabbing potential customers with low marketing costs (Jiewanto, Laurens, & Nelloh, 2012). Rasheed and Rashid (2024) also emphasised the importance of word of mouth to ensure students' satisfaction with the service quality in an academic context. According to (A. Parasuraman et al., 1985), service quality or SERVQUAL, for better terms, can be defined as the judgment made by the consumers regarding the excellence or superiority of the service given by a party to another party. Regardless, secondary school students in Malaysia are looking forward to the quality of service that the universities will provide. This is because the students have reasonable expectations of the service quality that a university will provide, especially in academic terms (Mustaffa et al., 2016).

Because of the intense competition in the service sector, many organizations have shifted their primary focus to satisfying their stakeholders' needs (consumers, employees, suppliers, business partners, and shareholders) (Zammuto et al., 1996). This means that public universities should follow the same practice as the happiness and satisfaction of students to determine their sustainability, productivity, and reputation based on the government's aspiration for progress in education (Malaysia Education Blueprint 2013 – 2025). To achieve competitive advantages, public universities and higher education institutions in Malaysia have pushed their service quality performance to a higher level to perform well and deliver better services for their customers, which is the students (Sadiq Sohail, Rajadurai, & Azlin Abdul Rahman, 2003). According to El Ahmad and Kawtharani (2021), service quality significantly influences student happiness. Osman et al. (2024) exhibited that service quality, institutional image, and the intake quality of students are significant predictors of student satisfaction.

Service Quality Model

Quality in a service-oriented business such as a higher education institution measures whether the services exceed the student's expectations (Yousapronpaiboon, 2014). One will expect excellent service quality before enrolling in a university of their choice (Raheem Mohamad Yusof Senior Lecturer, Hassan Associate Professor, Abdul Rahman Professor MARA, & Mujahid Ghouri, 2012). SERVQUAL by Parasuraman (1985) is one of the best benchmarks for service quality assessment and is currently used widely by researchers, especially in the service industry sector, such as higher education institutions (Ismail & Abiddin, 2009). This instrument tests the service quality dimensions and helps researchers differentiate which are most significant to customers' expectations. The five-dimensional characters are tangible, reliable, responsive, assurance, and empathetic. The quality of service is a multi-dimensional concept by integrating five dimensions in SERVQUAL (A. Parasuraman et al., 1985). If a service exceeds students' expectations, the students overwhelmingly accept the service quality. Meanwhile, if the students' expectations are more significant than the services performed, then it is not well-accepted by the students, and the university needs to take further corrective approaches.

i. Tangibility

Tangibles can be defined as the presence of physiological property aspects such as tools and machinery used by higher education institutions and communication materials such as publications, websites, and press events advisories, as well as the presence of service quality performed by the institution's human resources (Yousapronpaiboon, 2014). Tertiary education institutions need to consider that the conditions of physical factors highlight this service quality dimension. If the physical factors, such as students' accommodation, are not reasonable, students will be disappointed as their expectations are beyond reality. Some students might get uncomfortable if the condition is below average regarding the acceptable level (Abari, Yarmohammadian, & Esteki, 2011). However, other researchers have different opinions, such as (Liu et al., 2010), who stated in their research paper that only three dimensions (tangible, responsiveness, and empathy) out of five of SERVQUAL

have a crucial correlation with students' satisfaction. It includes contact content, personnel, facilities, and physical structures of the universities and faculties that students can access (Manea, 2014). Therefore, the hypothesis is developed:

H1: Tangibility of service quality could influence students' satisfaction.

ii. Reliability

Reliability or reliability can be defined as the university's capacity to deliver the promised service precisely and consistently (Yousapronpaiboon, 2014). A tertiary institution can deliver service to its students without making significant errors within the agreed period (Akhlaghi, Amini, & Akhlaghi, 2012). Reliability is regarded as the most crucial dimension of SERVQUAL (Parasuraman et al., 1988). However, (Liu et al., 2010) discovered that reliability and assurance in the SERVQUAL dimensions produce an insignificant relationship against students' satisfaction. Therefore, the hypothesis is developed:

H2: Reliability of service quality could influence students' satisfaction.

iii. Responsiveness

Based on the literature (Galeeva, 2016), responsiveness is the ability or willingness of tertiary education institutions to assist students by providing excellent quality and efficient service. It means the degree of readiness of the university's staff and human resources to cater to and respond to students' demands (Đonlagić & Fazlić, 2015). If one service is not available, then the service provider (university) needs to find an alternative for a quick recovery and professionally deal with the problems, thus creating positive perceptions towards the service provider (university) (Yousapronpaiboon, 2014). However, some researchers such as (Tan & Kek, 2004) come into disagreement as they discover that the schools mostly have excellent scores for "tangibles" in terms of students' satisfaction and usually worst for "empathy" and have an insignificant correlation with satisfaction in accordance to their research on Chinese business schools. These findings indicate that only "reliability" and "responsiveness" correlate favourably with students' satisfaction. Still, advances in computer technology such as instant messages or tweets, blogs, and digital customer service or AI chat boxes (Artificial Intelligence) have been able to boost reactivity by the service provider, especially for the use of government-related agencies (Kaura, Datta, & Vyas, 2012). Therefore, the hypothesis is developed:

H3: Responsiveness of service quality could influence students' satisfaction.

iv. Assurance

Assurance is the competence, courtesy, and credibility of higher education institutions' academic and non-academic staff to convey trust and confidence in their service quality to the students (Akhlaghi et al., 2012). This dimension touches on employees' proficiency and professional practices, such as providing services with smiles, politeness, respect, and adequate attitude toward the students (Green, 2014). Competency and professionalism refer to knowledge, proficiency, and skill used by the organization in adequately performing services. These skills help to inspire confidence in an organization and the teams and self-esteem (Xiao & Wilkins, 2015). However, some researchers, like (Abari et al., 2011), did not use the 'assurance' terms. Instead, they use 'guarantee' terms with the same meaning. Therefore, the hypothesis is developed:

H4: Assurance of service quality could influence students' satisfaction.

v. Empathy

Empathy can be defined as tertiary education institutions giving individualized attention or caring manners and achieving students' fulfilment of needs and demands (Yousapronpaiboon, 2014). Higher education institutions must identify, understand, and solve problems through approaches students favour the most (Akhlaghi et al., 2012). Empathetic higher education institutions should not lose touch with their students. As such, good higher education institutions that emphasize empathetic values will be able to appreciate their customers' needs and think of innovative approaches that win over students while ensuring additional services are available to them

(Lafferty & Colgate, 2001). Therefore, the hypothesis is developed:

H5: Empathy of service quality could influence students' satisfaction.

Service Quality in Public Higher Education Institutions

Regarding the commercial sector, service quality research in higher education is relatively new and is regarded as a highly potential business (Sultan & Wong, 2010). The literature of (Hanaysha et al., 2012) describes the service quality in the tertiary education sector as the discrepancy between the expectations and perceptions of students from their experience in college. In particular (J. A. Douglas, Douglas, McClelland, & Davies, 2015) indicated that the perceived quality of service in public universities by students is precedent for the students' satisfaction. This study will use Parasuraman's (1988) 5 dimensions of SERVQUAL technique. (Hoffman & Bateson, 2001) express 1985 Parasuraman's SERVQUAL as a standpoint established by continually evaluating overall service performance. Service quality is about outstanding service towards the students or meeting their expectations (Tahar, 2008). The same policy applies to universities that try to build long-lasting relationships by improving their service delivery quality to the students even after they graduate from the university and become alums (Aldridge & Rowley, 2001).

In other cases, (O'Neill & Palmer, 2004) express their thoughts and views on the service quality of education as something difficult to define. Some researchers (Quinn et al., 2009) considered service quality challenging to explain. Because of this, experts believe there is no perfect way to identify the standard of definition for service quality (Clewes, 2003). However, in early 2005, there were numerous efforts to make a coherent definition of service quality in education (Wang & Shieh, 2006), elucidating that service quality is the contrast between the perceptions of students and the actual performance of services delivered by an institution.

Service Quality And Students' Satisfaction

Service quality and customer satisfaction are generally contrasting matters but can sometimes be interdependent from the authors' point of view (Hanaysha et al., 2012). In the meantime, quality is a general interpretation, while satisfaction is correlated to a distinct activity (Hemsley-Brown et al., 2010). Previous studies such as (Farrell, Souchon, and Durden, 2001) describe expected quality as a precursor towards customer fulfilment and satisfaction, while other authors like (Parasuraman et al., 1988) perceived customer satisfaction as an antecedent (factors that correlate with one another) to service quality. Hence, numerous recent publications surmise that service quality is an antecedent and correlates to customer satisfaction (Carrillat, Jaramillo, & Mulki, 2007).

Researchers like (Hemsley-Brown et al., 2010) stated in their literature that students would have a better quality experience during their time of study if tertiary institutions concentrated on their students and fully recognized how students view the services provided by the higher learning institutions, learning institutions will be able to identify its weaknesses and thus have opportunities to enhance the quality of services, especially in the academic terms. Higher learning institutions should look at the student's perspectives regarding the service quality they provide. According to (Wiers-Jenssen, Stensaker, & Grøgaard, 2002), tertiary institutions' support amenities, such as computer labs, teaching halls, and revision rooms, are important in students' satisfaction appraisal. Owing to a highly competitive environment today, service quality and student satisfaction have undeniably become the two fundamental principles at the heart of marketing philosophy and higher education institutions' practices. Therefore, the primary key to a competitive advantage for higher education institutions is to deliver excellent service to the students, thus resulting in positive student satisfaction.

Likewise, according to (Kotler & Keller, 1997), satisfaction can be evaluated as a determinant of the respective degree of expectations and perceived service execution of an organization for a particular duration. According to (Palacio et al., 2002), students' expectations start before the students even enter the university. This is because students will first find information regarding the university service qualities before they enter the university, either through primary or secondary sources. This is because students wanted to prepare for what to expect as this decision might affect their university life experience for the next three to four years. This suggests it is important for the researchers to determine first what the students expect before they enter a university. For instance, some students may expect that they will have good lecturers in terms of academic teaching. Thus,

lecturers can contribute their vast knowledge and experiences to the students. Conversely, satisfaction requires knowing and perceiving the students' experiences for three to four years (Carey, Cambiano, & Vore, 2002). This means that whatever the students experience in the service quality provided during their study period, the universities have huge responsibilities. Although most student satisfaction analysis focuses on the customer viewpoint, researchers face the problem of establishing a common concept of student satisfaction, thus presenting a need for customer satisfaction theory to be selected and updated to clarify the sense of student satisfaction (Hom, 2002). Although treating students as customers is inappropriate and sometimes is viewed as unprofessional or unethical, given the current marketplace, especially in the education sector, there is a new norm of rights that students have become "customers" and thus can reasonably demand their views to be heard and take into consideration as students are the fee payers in the present education environment (William, 2002).

Additionally, some researchers have suggested new and comprehensive variables for the identification of attributes in the study of the image of tertiary education institutions' image, known as nineteen comprehensive variables or attributes (Carney, 1994), (Golden & Sirdesai, 1992), and (Clemes, Gan, & Kao, 2007). For instance, student satisfaction in academics, student qualities in self-development characters, efficient faculty-to-student intercommunication, the quality of instructors and teaching staff, number of programs available, university reputation, the size of classrooms, career insights preparation, sports, and youth programs, student activities in curricular and social services, community service, the number of amenities and facilities available, friendly environment, courteous staff and efficient workforce, significant emphasize on character development, and the availability of instruments in terms of applying financial aid. Since these variables were established from the perspective of the public tertiary education institutions, most of these variables are potentially relevant for the students' appraisal in terms of service quality.

Meanwhile, other researchers have proposed and used eight characteristics to examine university education services (Athiyaman, 1997). For instance, the quality of teaching and delivering knowledge, the number of staff (academics and non-academics) available for student consultation, the services provided by the department of library, computing facilities including a computer lab and information technology centres, sports and recreational facilities such as the conditions of the gymnasium, badminton courts and football field, the size of class, the level of difficulty for the content of subject and the number of students' workload, assessments and assignments. The authors also stated that students' satisfaction is almost like students' attitudes. The difference is that students' satisfaction is short-term and involves evaluation of the experience of the service delivered by the higher education institutions themselves, while external factors can influence attitude. In predicting overall satisfaction, the two significant total variables, i.e., 'overall impression of the school' and 'overall impression of the quality of education,' are the determinants, according to (H. Lee, Lee, & Yoo, 2000). Meanwhile, (Brooks, 2005) clarify in their research that the service quality assessment should comprise more university activities, for instance, the reputation of the universities in the recent decade, the productivity of research materials produced by the faculties, the students' outcomes, and the student's experiences such as evaluation of learning and the availability of character development.

The main reasons for the withdrawal of students are due to students' expectations that cannot be met by higher education institutions (Aldridge & Rowley, 2001). Some researchers share their opinions on the current circumstances of the education sector in Malaysia. For instance, according to researchers like (Kanji, Tambi, and Wallace, 1999), most institutions highlighted the eminence of meeting the students' perception, which is almost identical to regular business entities (prioritizing their customers first). Unfortunately, some of the learning institutions' employees and human resources lack the consciousness or understanding of what the students want and demand. This has become a repeated downside for many institutions. Therefore, the hypothesis is developed:

H6: Service quality in public universities will influence students' satisfaction.

METHODOLOGY

Research Methodology

This research targeted the bachelor's degree students at Universiti Kebangsaan Malaysia (UKM – research

university) and Universiti Islam Antarabangsa Malaysia (UIAM – non-research university) to understand the relationship between service quality and student satisfaction in both public universities in Selangor. This study was adopted from the SERVQUAL dimensions of Parasuraman (Parasuraman et al., 1988). The experimental variables or independent variables in this study are the service quality in public tertiary education institutions that evaluate the degree of satisfaction with the service performed. The dimensions of SERVQUAL are tangibility, reliability, responsiveness, assurance, and empathy. Meanwhile, the dependent variable for this study is the students' satisfaction, which is measured by the overall satisfaction in both public higher education institutions using the method of correlation coefficient analysis.

Sample

The samples in this study were chosen randomly from two public higher education institutions in Selangor. The two public universities chosen randomly are the bachelor's degree students at Universiti Kebangsaan Malaysia (UKM) and Universiti Islam Antarabangsa Malaysia (UIAM). For that purpose, a directory from https://www.studymalaysia.com/education/top-stories/list-of-universities-in-malaysia is being used to find the correlated public universities in Selangor that may have the possibility to become respondents for this analysis. This is because Universiti Kebangsaan Malaysia (UKM) can be a potential representative of a research university in Selangor. Universiti Islam Antarabangsa Malaysia (UIAM) can potentially represent temporary universities specializing in Islamic education. Thus, both universities can become great examples for further research. The sample consisted of 200 respondents from both public universities and was recorded accordingly based on gender, ethnicity, age, semester of study, and household income. Besides, the sampling respondents will be taken randomly from a variety of bachelor's degree students and random faculties in both public universities.

Instruments

This study used electronic questionnaires or e-surveys via online Google Forms as a channel to obtain the data needed. There will be three sections in the questionnaires. First and foremost is Section A, known as the demographics factor, which contains information regarding respondents' gender, ethnicity, age, salary range or income range, and their semester of study. The variables in Section A were adapted from (Hasan et al., 2009). The second part is Section B, which measures service quality in higher education institutions. This section will contain information regarding the service quality or service performed by the learning institutions based on the five dimensions (tangibility, reliability, responsiveness, assurance, and empathy). Each SERVQUAL dimension will have ten questions. The variables in Section B were adapted from (Valarie A. Zeithaml, A. Parasuraman, and Leonard L. Berry, 1990). The third part is section C, which is known as the measurement of students' satisfaction. The students' satisfaction will have seven questions. Section C will contain information regarding the students' satisfaction level. The variables in Section C were adapted from (LeBlanc & Nguyen, 1997). In Section B, service quality measurement, the research will use the 5-Likert scale, from 1 for very dissatisfied to 5 for very satisfied. Meanwhile, in measuring Section C or student satisfaction, the research will use the 5-Likert scale from 1 for very dissatisfied to 5 for very satisfied, which was adapted from (Hasan et al., 2009) and (Athiyaman, 1997).

Data Collection and Analysis Procedures

The quantitative approach was used to collect primary data to assess the study target (research objectives). Online Google Forms will be distributed to 200 respondents with 57 questions (excluding demographic in Section A) based on the research framework. The online Google form will be posted through the internet, mainly the social media platforms of the targeted respondents, i.e., the student's official Facebook, WhatsApp, Instagram, and Telegram groups, for 3 months to collect the primary data. This study will be carried out as a correlation study. Thus, all data collected will be presented in Microsoft Excel and analyzed using the statistical package for the social sciences or SPSS tools to discover the objective of this research. Therefore, the customer satisfaction model is used to determine the relationship between the dimensions of service quality and students' satisfaction in two public tertiary education institutions and to identify crucial factors or forces in service quality that contribute the most to students' satisfaction.
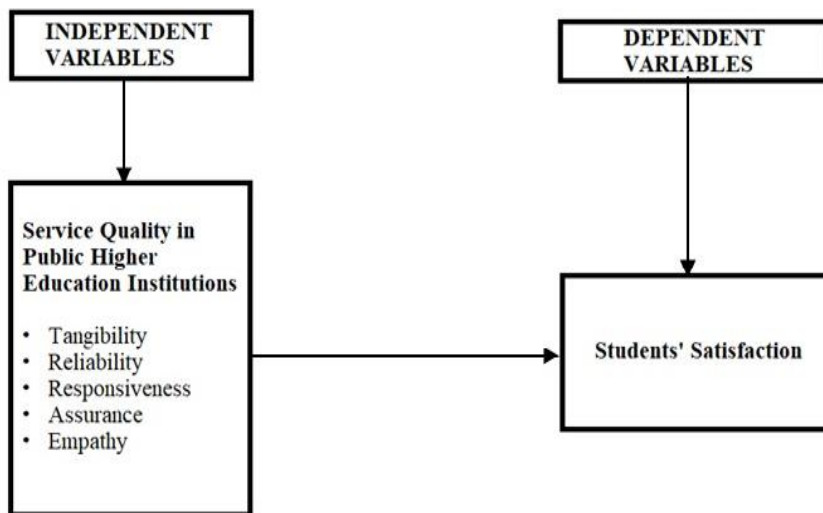
Research Framework

Figure 3.5 Research Framework

A quantitative research approach is used to collect the data based on the research model. The customer satisfaction model is taken to discover the relationship between the dimensions of service quality and students' satisfaction in two government-funded universities and to discover significant factors or forces in service quality that contribute the most towards students' satisfaction (Hasan et al., 2009). Presumably, there are five service quality (SERVQUAL) dimensions based on the previous discovery by (Berry, Zeithaml, & Parasuraman, 1990). The independent variables or experimental variables for the research framework are service quality in public higher education institutions (tangibility, reliability, responsiveness, assurance, and empathy), and the dependent variable for the research framework is students' satisfaction. By referring to (Hasan et al., 2009), these five variables will determine the relationship between service quality and students' satisfaction and identify critical factors in service quality that contribute most to the students' satisfaction in two public higher education institutions.

FINDINGS

Profiles of the Respondents

The data contains the following profiles of respondents or answerers. It starts with demographic questions asking the students which university they belong to, semester of study, age, gender, race and ethnicity, and household income range. The respondents' data and detailed information are represented in Table 4.1 based on frequency distribution (n), percentages (%), valid percentages (%), and cumulative percentages (%).

Variables	Frequency (n)	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Student of				
Universiti Kebangsaan Malaysia (UKM)	107	53.5	53.5	53.5
Universiti Islam Antarabangsa Malaysia (UIAM)	93	46.5	46.5	46.5
Semester of study				
Semester 1	45	22.5	22.5	22.5
Semester 2	11	5.5	5.5	28.0

Semester 3	35	17.5	17.5	45.5
Semester 4	10	5.0	5.0	50.5
Semester 5	30	15.0	15.0	65.0
Semester 6	23	11.5	11.5	77.0
Semester 7	22	11.0	11.0	88.0
Semester 8	10	5.0	5.0	93.0
Semester 9	7	3.5	3.5	96.5
>Semester 10	7	3.5	3.5	100.0
Age				
19	17	8.5	8.5	8.5
20	27	13.5	13.5	22.0
21	29	14.5	14.5	36.5
22	25	12.5	12.5	49.0
23	35	17.5	17.5	66.5
24	22	11.0	11.0	77.5
25	14	7.0	7.0	84.5
26	12	6.0	6.0	90.5
27	5	2.5	2.5	93.0
28	6	3.0	3.0	96.0
29	5	2.5	2.5	98.5
30	3	1.5	1.5	100.0
Gender				
Male	95	47.5	47.5	47.5
Female	105	52.5	52.5	100.0
Race				
Malay/Bumiputera	85	42.5	42.5	42.5
Chinese	47	23.5	23.5	66.0
Indian	36	18.0	18.0	84.0
Others	32	16.0	16.0	100.0
Household Income				
RM0 – RM2,000	60	30.0	30.0	30.0

RM2,001 – RM4,000	40	20.0	20.0	50.0
RM4,001 – RM6,000	35	17.5	17.5	67.5
RM6,001 – RM8,000	28	14.0	14.0	81.5
RM8,001 – RM10,000	22	11.0	11.0	92.5
>RM10,001	15	7.5	7.5	100.0

Table 4.1 Profile of Respondents

Of the 200 respondents in this digital survey, 107 (53.5%) are Universiti Kebangsaan Malaysia (UKM) students, and the remaining 93 (46.5%) are Universiti Islam Antarabangsa Malaysia (UIAM) students. Furthermore, out of 200 answerers, 95 (47.5%) are male and the remaining 105 (52.5%) are female. From the data above, it can be concluded that the computation means that the age of the answerers (students) is 24.5 years old, with most of the students are on their 23-year-old (17.5%). In addition, most of the students are in the first semester of their study (22.5%), followed by third semester (17.5%) and fifth semester (15%). The majority of the answerers are Bumiputra-descent/Malay-descent with 85 out of 200 (42.5%), followed by Chinese-descent, 47 out of 200 (23.5%), and Indian-descent 36 out of 200 (18%) and other ethnicity contributing about 32 out of 200 (16%), this including some international students.

Descriptive Statistics of the Variables in the Model of the Study

For the experimental or independent variables, i.e., service quality, each dimension starts with tangibility, reliability, responsiveness, assurance, and empathy and consists of 10 items or questions for each variable. The dependent variable, i.e., the student's satisfaction, contains seven items or questions. Thus, there are 50 items for independent variables and seven for dependent variables.

Variable Type	Variable Name	N	No. of Items	Minimum Score	Maximum Score	Actual Study Means
Dependent Y	(Student Satisfaction)	200	7	1.29	5	4.3229
Independent Service Quality						
X1	Tangibility	200	10	1	5	4.2815
X2	Reliability	200	10	1	5	4.2905
X3	Responsiveness	200	10	1	5	4.2865
X4	Assurance	200	10	1	5	4.3055
X5	Empathy	200	10	1	5	4.2915
Overall Service Quality		200	57	1	5	4.2911

Table 4.2.1 Descriptive Statistics of Measures

The data in Table 4.2.1 shows that the mean score for students' satisfaction was (4.3229 on a 5-point Likert scale) followed by SERVQUAL dimensions. For each dimension, assurance scores the highest (4.3055 on a 5-point scale), followed by empathy (4.2915 on a 5-point scale), reliability with (4.2905 on a 5-point scale), responsiveness with (4.2865 on a 5-point scale) and the lowest scores is tangibility with (4.2815 on a 5-point scale). Furthermore, the minimum score for student satisfaction is 1.29, indicating that some students feel more disappointed with the service quality performed by the respective university than what he or she expected. The

maximum score is 5.00, indicating that some students' satisfaction is more excellent than expected or perceived. This means that the university is performing at an excellent level of service quality and is beyond the students' expectations. The overall service quality also positively correlates with the means of (4.2911).

Descriptive Statistics			
	N	Mean	Std. Deviation
TANGIBILITY			
1. The appearance of lecturers	200	4.26	.977
2. The layout of classrooms	200	4.33	.828
3. The layout of faculties, building and grounds	200	4.33	.791
4. The overall cleanliness	200	4.25	.951
5. The degree to which classrooms and study rooms are comfortable	200	4.30	.868
6. The degree of parking available for students	200	4.21	1.005
7. The number of courses offered to students	200	4.29	.969
8. The degree to which the curriculum or syllabus is up to date	200	4.33	.845
9. The availability of Internet access for students	200	4.31	.822
10. The availability of computer access in the lab for students	200	4.20	.999
RELIABILITY			
1. The efficiency and error-free registration for students	200	4.25	.948
2. The university keeps its records accurately	200	4.32	.825
3. Do lecturers and non-academic staff provide one-to-one consultation on character development for students	200	4.25	.955
4. Does the university produce good quality research that helps to improve the quality of academic services	200	4.33	.821
5. Do the lecturers always deliver knowledge on a promised time and does not cancel classes	200	4.32	.849
6. The degree of capabilities and proficiency for lecturers to deliver knowledge in classes	200	4.28	.936
7. Does the university provide efficient services at a promised time and date	200	4.27	.901
8. Are the overall services provided by the professional supporting staffs are considered as reliable services	200	4.33	.826
9. Do students feel comfortable with the overall services provided by the university	200	4.24	.958
10. Does the university's website provide in-depth information regarding activities for students to participate in a semester	200	4.32	.844
RESPONSIVENESS			

1. The availability of personnel to assist students	200	4.32	.826
2. The availability of lecturers to assist students	200	4.25	.955
3. Lecturer capacity to solve problems when they arise	200	4.35	.813
4. Non-academic staff's capacity to solve problems when they arise	200	4.33	.826
5. Students rarely get the "run-around" when seeking information on this University	200	4.23	.967
6. The availability of channels for students to express their complaints	200	4.28	.903
7. Students queries are dealt with efficiently and promptly	200	4.32	.860
8. Both academic and non-academic staff inform students exactly when services will be performed	200	4.23	.995
9. Students' problems will be solved within an acceptable time	200	4.26	.942
10. Readiness to respond to students' requests	200	4.30	.851
ASSURANCE			
1. Does the university have friendly and courteous staff	200	4.23	1.001
2. Does the university have friendly lecturers	200	4.33	.816
3. Does the university have efficient productivity among its lecturers	200	4.34	.786
4. Does the university have good academic credentials among its lecturers	200	4.29	.944
5. Are the lecturers viewed as agents of change and innovation in the eyes of students	200	4.34	.824
6. The degree of which the university participates and is involved with the surrounding community (social service)	200	4.33	.833
7. The university's staff's knowledge of rules and procedures	200	4.26	.948
8. The security measurement in the university	200	4.32	.849
9. What are the communication skills between lecturers and students? Are students well-understand of what was taught in classes	200	4.33	.828
10. The lecturers are well-equipped with vast knowledge and have the ability to answer students	200	4.26	.948
EMPATHY			
1. Does the university's administration/management prioritize students' best interest	200	4.27	.917
2. Access to computer facilities is accommodated with students' convenient	200	4.31	.841
3. Access to study rooms is accommodated with students' convenient	200	4.26	.948
4. Academic and non-academic staff are willing to give students individual attention	200	4.32	.837
5. Academic and non-academic staff (including the university's administration/management) understand the specific needs of students	200	4.32	.837
6. The university is fair and unbiased in its treatment of individual students	200	4.21	1.015

7. Staff professionally handle students' problems in a caring fashion	200	4.31	.853
8. The extent to which lecturers are sympathetic and supportive to the needs of students	200	4.31	.859
9. The opening hour of the university offices for the students	200	4.31	.840
10. The opening hour for computer rooms for the students	200	4.30	.873
STUDENT SATISFACTION			
1. I am satisfied with my decision to attend this university	200	4.27	.950
2. If I had a choice to do it all over again, I would still enrol in this university	200	4.31	.882
3. My choice to enrol in this university is a wise one	200	4.33	.827
4. I am happy with my decision to enrol at this university	200	4.27	.940
5. I made the right decision when I decided to enrol at this university	200	4.31	.865
6. I am happy that I enrolled at this university	200	4.34	.865
7. Overall, I am satisfied with the services provided by the university	200	4.40	.845

Table 4.2.2 Questionnaire items

Based on the data presented in Table 4.2.2 above, it appears that the highest score for mean for the item under independent variables was "lecturers' capacity to solve problems when they arise" (mean=4.35; sd=0.813) and "Do the lecturers are viewed as agents of change and innovation in the eyes of students" (mean=4.34; sd=0.824) followed by "does the university have efficient productivity among its lecturers" (mean=4.34; sd=0.786) in the second place of high score and "the layout of classrooms" (mean=4.33; sd=0.828) in the third place of high score. The lowest scores were shared by three items, which are "university is fair and unbiased in their treatment of individual students" (mean=4.21; sd=1.015), "the degree of parking available for students" (mean=4.21; sd=1.005), and "the availability of computer access in the lab for students" (mean=4.20; sd=0.999). This means the lowest satisfaction toward service quality was related to empathy and tangibility. Meanwhile, the highest was related to responsiveness, assurance, and tangibility. However, it can also be seen here that the responsiveness item "lecturers' capacity to solve problems when they arise" had the highest overall score for all items (questions). For the dependent variable (student satisfaction), the item "Overall, I am satisfied with the services provided by the university" scored the highest with (mean=4.40; sd=0.845) while "I am satisfied with my decision to attend this university" (mean=4.27; sd=0.950) and "I am happy with my decision to enrol at this university" (mean=4.27; sd=0.940) score the lowest.

In conclusion, the highest score for mean for the items was related to responsiveness, assurance, and tangibility variables. At the same time, the lowest score for the mean for the items was related to variables of empathy and tangibility.

Reliability of the study

Variable Type	Variable Name	No. of Items	Actual Test (α)	(Hanaysha et al., 2012)
Dependent	Y (Student Satisfaction)	7	0.92	0.791
Independent				
Service Quality				
X1	Tangibility	10	0.923	0.789
X2	Reliability	10	0.91	0.834

X3	Responsiveness	10	0.926	0.691
X4	Assurance	10	0.93	0.791
X5	Empathy	10	0.93	0.816

Table 4.3 Reliability Results

Based on the data presented in Table 4.3 above, all variables representing all service quality dimensions have alpha coefficient values of more than 0.75. Previous research done by (Hasan et al., 2009), (Hanaysha et al., 2012), and (Farahmandian, 2013) support this study, and it seems this instrument is reliable. For instance, tangibility for this research is (0.923) compared with (Hanaysha et al., 2012) study of tangibility (0.789), reliability for this research is (0.910) compared with (Hanaysha et al., 2012) study of reliability (0.834), responsiveness for this research is (0.926) compared with (Hanaysha et al., 2012) study of responsiveness (0.691), assurance for this research is (0.930) compared with (Rajab et al., 2011) study of assurance (0.791), empathy for this research is (0.930) compared with (Hanaysha et al., 2012) study of empathy (0.816). Also, for the dependent variable, the student satisfaction alpha coefficient value for this research is (0.920) compared with (Hanaysha et al., 2012) study of students' satisfaction (0.791).

In conclusion, the table shows that every item has an alpha coefficient value of more than 0.75, slightly higher than the study by Hanaysha et al. (2012). Therefore, this research is acceptable.

Correlations		Students Satisfaction	Tangibility	Reliability	Responsiveness	Assurance	Empathy	Overall Service Quality
Students Satisfaction	Pearson Correlation	1	.623**	.621**	.608**	.655**	.593**	.661**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	200	200	200	200	200	200	200
Tangibility	Pearson Correlation	.623**	1	.897**	.856**	.853**	.783**	.935**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	200	200	200	200	200	200	200
Reliability	Pearson Correlation	.621**	.897**	1	.906**	.863**	.821**	.955**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	200	200	200	200	200	200	200
Responsiveness	Pearson Correlation	.608**	.856**	.906**	1	.860**	.841**	.951**

	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	200	200	200	200	200	200	200
Assurance	Pearson Correlation	.655**	.853**	.863**	.860**	1	.832**	.940**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	200	200	200	200	200	200	200
Empathy	Pearson Correlation	.593**	.783**	.821**	.841**	.832**	1	.912**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	200	200	200	200	200	200	200
Overall Service Quality	Pearson Correlation	.661**	.935**	.955**	.951**	.940**	.912**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	200	200	200	200	200	200	200

Table 4.4 Correlation Results

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the data presented in Table 4.4 above, there is a significant and positive relationship between service quality (i.e., tangibility, reliability, responsiveness, assurance, and empathy) and overall service quality to students' satisfaction. From the output, assurance has the most substantial relationship with satisfaction, followed by tangibility, reliability, responsiveness, and empathy. The relationship between tangibility and student satisfaction is r=0.623, meaning that tangibility has a moderate relationship toward satisfaction similar to reliability (r=0.621), responsiveness (r=0.608), and empathy (r=0.593). Only assurance shows a stronger relationship with satisfaction with r=0.655. In addition, the relationship between overall service quality and student satisfaction is (r=0.661), meaning that the relationship is most substantial among the rest of the tested variables. Furthermore, the results also show that all dimensions are correlated and significant to one another.

Hypothesis 1: There is a significant relationship between tangibility and student satisfaction.

The relationship between tangibility and student satisfaction was investigated using the Pearson correlation coefficient. Table 4.4 shows a strong correlation (second strongest after assurance) between the two variables (r=0.623). This means that 0.623 of students' satisfaction is determined by tangibility. Thus, hypothesis 1 is accepted.

Hypothesis 2: There is a significant relationship between reliability and student satisfaction.

The relationship between reliability and student satisfaction was investigated using the Pearson correlation coefficient. Table 4.4 shows a strong correlation between the two variables (r=0.621). This means that 0.621 of students' satisfaction is determined by reliability. Thus, hypothesis 2 is accepted.

Hypothesis 3: There is a significant relationship between responsiveness and student satisfaction.

The relationship between responsiveness and student satisfaction was investigated using the Pearson correlation coefficient. Table 4.4 shows a strong correlation between the two variables (r=0.608). This means that 0.608 of students' satisfaction is determined by responsiveness. Thus, hypothesis 3 is accepted.

Hypothesis 4: There is a significant relationship between assurance and student satisfaction.

The relationship between assurance and student satisfaction was investigated using the Pearson correlation coefficient. Table 4.4 shows a strong correlation (the strongest out of the other dimensions) between two variables (r=0.655). This means that 0.655 of students' satisfaction is determined by assurance. Thus, hypothesis 4 is accepted.

Hypothesis 5: There is a significant relationship between empathy and student satisfaction.

The relationship between empathy and students' satisfaction was investigated using the Pearson correlation coefficient. Table 4.4 shows a strong correlation (the weakest out of the other dimensions) between two variables (r=0.593). This means that 0.593 of students' satisfaction is determined by empathy. Thus, hypothesis 5 is accepted.

Hypothesis 6: A significant relationship exists between overall service quality and students' satisfaction.

The relationship between overall service quality and student satisfaction was investigated using the Pearson correlation coefficient. Table 4.4 shows a very strong correlation (the strongest of all items) between two variables (r=0.661). This means that 0.661 of students' satisfaction is determined by overall service quality. Thus, hypothesis 6 is accepted.

Critical Factors in Service Quality

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.670a	.449	.435	.53720
a. Predictors: (Constant), Empathy, Tangibility, Assurance, Responsiveness, Reliability				

Table 4.5.1

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.575	5	9.115	31.584	.000b
	Residual	55.986	194	.289		
	Total	101.561	199			
a. Dependent Variable: Student Satisfaction						
b. Predictors: (Constant), Empathy, Tangibility, Assurance, Responsiveness, Reliability						

Table 4.5.2

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.179	.258		4.567	.000
Tangibility	.171	.133	.168	1.293	.198
Reliability	.085	.168	.078	.503	.615
Responsiveness	-.002	.147	-.002	-.015	.988
Assurance	.383	.130	.370	2.960	.003
Empathy	.095	.112	.092	.848	.397
a. Dependent Variable: Student Satisfaction					

Table 4.5.3

R=0.670

R2=0.449

Adjusted R2=0.435

F Change=31.584 Sig. F=0.000 N=200

Based on the data presented in Table 4.5.1, 4.5.2, and 4.5.3 above, the results show that R2=0.449 (adjusted R2=0.435), meaning 44.9% of the variance in students' satisfaction is explained by the five-dimension (tangibility, reliability, responsiveness, assurance, and empathy) provided in the output. The F statistics produced are (F=31.584) and are significant at 0.000. From this result, the conclusion that can be drawn from this Test are variables like responsiveness (unstandardized coefficients B is -0.002 at sign. T=-0.15), reliability (unstandardized coefficients B is 0.085 at sign. T=0.503), and empathy (unstandardized coefficients B is 0.095 at sign. T=0.848) are not crucially related to satisfaction.

The results show that only one dimension (assurance) is consistently more significant than the other dimensions (tangibility, reliability, responsiveness, and empathy). This means that assurance is the critical factor contributing most to students' satisfaction. It is also worth noting that assurance (unstandardized coefficients B is 0.383 at the sign. T=2.960) is crucially related to satisfaction.

DISCUSSION AND CONCLUSION

In this last section of the research, discussions on the study's important findings will be reviewed regarding their significance and support by other researchers. This study attempts to investigate the relationship between service quality dimensions (tangibility, reliability, responsiveness, assurance, and empathy) and student satisfaction, and secondly, to study the critical factors in service quality (tangibility, reliability, responsiveness, assurance, and empathy) that contribute most to the student's satisfaction.

Discussion

Research objective 1 (RO1) indicates that the 1985 Parasuraman's five service qualities (tangibility, reliability, responsiveness, assurance, and empathy) have a strong relationship (positive relationship) with students' satisfaction. The result is consistent with the findings by (Hasan et al., 2009), (Hanaysha et al., 2012), and (Khan & Nawaz, 2011), who found there is a positive relationship between service quality and student satisfaction. In this study, assurance (r=0.655) has the most substantial relationship, followed by tangibility (r=0.623), reliability

(r=0.621), responsiveness (r=0.608), and empathy (r=0.593), Seeing that assurance and tangibility have a stronger relationship than reliability, responsiveness and empathy bring the researcher back to what (Hasan et al., 2009) and (Hanaysha et al., 2012) have been stressing earlier, seeing it as a compliment to the services provided in higher education institutions in such to enhance satisfaction. In the (Hasan et al., 2009) study, the strongest dimension is empathy, followed by assurance, while in the (Hanaysha et al., 2012) study, the strongest dimension is responsiveness, followed by reliability. This is consistent with (Soutar & Mcneil, 1996). In their research, both emphasize that although all dimensions of service quality help explain students' satisfaction, that does not mean all dimensions are 100% significant (Soutar & Mcneil, 1996). Some of the dimensions might not be suitable for other higher education institutions. For instance, this study for research objective 2 (RO2) explains that assurance has the strongest relationship that contributes to students' satisfaction. Thus, students in higher education institutions are concerned with the knowledge, courtesy, and ability to inspire trust and confidence in their university or higher education institution, respectively (Hasan et al., 2009).

According to the study (Cuthbert, 1996), the most important contributor to satisfaction is the service encounter (Soutar & Mcneil, 1996). The author also concludes the same opinion by looking at it from the communication perspective. This finding corresponds with Jiewanto et al.'s (2012) finding that students expressed satisfaction with their college experiences, university image, and word-of-mouth intention (communication).

Conclusion

Eventually, Parasuraman's SERVQUAL dimension is the best measurement used to help determine student satisfaction and the quality of education given by higher education institutions or universities. In fact, in support of this, (Berry et al., 1990) (Shauchenka & Busłowska, 2010) mentioned that 'SERVQUAL is a universal method and can be applied to any service organization to assess the quality of services provided.' Therefore, it was also used in the literature review section of this dissertation to make it easier for all to know and understand what constitutes service quality. It is essential to validate here that from the regression analysis, one dimension of service quality (assurance) is the most critical factor in explaining students' satisfaction. Whatever is done to increase assurance in service quality will help students positively evaluate their satisfaction with public universities in Selangor.

Limitations And Recommendations

Service quality has been universally accepted as a step toward customers' satisfaction or students' satisfaction, and completely ignoring it can jeopardize the organization's competitiveness (especially in higher education institutions). It is noted that the competitiveness of service-related organizations is crucial and significant in the business industry, mainly when they correspond from one party to another. For that, denying or neglecting the importance of service quality is the same as compromising the continuation and the competitiveness of the service-oriented business because, according to researchers, by taking into account service quality, almost 48 per cent variation in satisfaction can be clarified (S. P. Lee & Moghavvemi, 2015).

(1) One limitation of this study is that the respondents' context is limited to only two public higher education institutions that offered bachelor's degree courses in Selangor. As these public higher education institutions offer courses for other levels, such as certificate courses, diplomas, master's, and even doctorate (PhD), and courses for international students, it should be fair to include them in future research.

(2) Future research suggests conducting a comparative study to explore whether there are differences in service quality and student satisfaction between public and private higher education institutions.

(3) Future studies should also pay deep attention to data delivery. The study was done in mid-2020 when the country and the world faced the Coronavirus (COVID-19) pandemic. Therefore, the data collection and distribution are focused solely on digital platforms such as social media through Google Forms. The researcher posts the Google form links on every social media account (Facebook, Instagram, and WhatsApp) the researchers only have; thus, it might not reach vast audiences. As the number of respondents is only 200 students, it might not fully represent all students in the respective universities in Selangor. The best way to do this is to utilize paper and digital surveys to get more accurate data shortly.

(4) Last but not least, there are four public universities in Selangor: Universiti Teknologi MARA (UiTM), Universiti Putra Malaysia (UPM), Universiti Kebangsaan Malaysia (UKM), and Universiti Islam Antarabangsa Malaysia (UIAM). The author only covered one research university (UKM) and one non-research university (UIAM)). Therefore, it cannot represent all public universities in Selangor. Future research purposes need to include public and private university students as respondents.

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