

Assessing the Causal Relationship of Service Quality, University Image, Student Satisfaction and Student Loyalty: A Structural Equation Modelling Approach

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Abstract

Scholars are progressively focusing on the service quality its impact of higher educational institutions, acknowledging that quality has become a foremost and persistent topic of discussion. The viewpoint on service quality stresses its growing importance in shaping student experiences and institutional reputations. However, the links between service quality, institutional image, on students' satisfaction and students' loyalty are still confusing and inconsistent. Thus, the study focuses on to understand the influence of service quality and corporate image on students' satisfaction and loyalty. the study employed a census survey using a structured questionnaire based on the Faculty of Management and Finance, University of Ruhuna, Sri Lanka. The study population comprised 2,400 undergraduates, and a census survey method was employed. Of these, 1,378 responses were considered for the final analysis. The study confirmed the existence of a positive and significant relationship of service quality on students' satisfaction, there is a positive and significant relationship of corporate image on students' satisfaction, there is a positive and significant relationship of service quality on loyalty, there is a positive and significant relationship of corporate image on loyalty, there is a positive relationship between students' satisfaction and loyalty. furthermore, a study established a partial mediation of students' satisfaction on the relationships between service quality-loyalty and corporate image-loyalty. the originality of this study has been confirmed that there are only a few studies that considered all these influences in a single study including indirect effect of students' satisfaction in the service quality field of education. This study offers more robust empirical evidence on the role of service quality and corporate image on student satisfaction and loyalty. It identifies the key quality dimensions within higher education institutions that significantly impact student satisfaction. Future researchers are stimulated to perform similar studies across other state universities and private universities to ensure the consistency and generalizability of the findings.

Keywords: *Corporate image, Service quality, Student loyalty, Student satisfaction*

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Introduction

Education is a primary need for everyone who lives in this 21st century, and knowledge is a key towards the success of an individual or a nation. To compete globally in today's era of globalization, all countries must improve the skills, knowledge, and capacity of their inhabitants (Moslehpour et al., 2020). As Sri Lanka is considered as an underdeveloped nation, it is high time to focus on service quality of higher education institutions which can gain more competitive advantages at the marketplace. At present Sri Lanka is currently making tremendous progress toward national development, which includes promoting economic empowerment, sustaining the rule of law, and rapprochement (Weerasinghe & Fernando, 2018). Thereby, generation to generation focused their attention on gaining and giving better education for them and their children respectively. Especially focusing on higher education of people focused on quality over quantity. Even the goal of most higher education institutions around the world is to adapt to changing market needs and be competitive (Pathmini et al., 2014). Hence that the attention of scholars moves towards service quality of educational institutions and emphasizes quality is a hot topic for discussion over time.

Higher education is essential to a nation's growth because it fosters social, cultural, and economic development, encourages engaged citizenry, and instills moral ideals in its populace (Annamdevula & Bellamkonda, 2016a). According to Fernando et al., (2017), higher education is regarded as one of the most crucial tools for the individual, social, and economic growth of a country. Therefore, service quality and corporate image of educational institutes are gaining much more attention within this VUCA environment. Higher education needs to

place a special emphasis on analyzing the problems linked to service quality and its measurement among the service sector (Annamdevula & Bellamkonda, 2016b). This study attempts to concentrate on the mediating effect of students' satisfaction on service quality, corporate image and students' loyalty through Structural Equation Modelling perspective and it is beneficial for Sri Lanka as the government is focusing to become one of the most demanding educational hubs in south Asian region (Chandramohan, as cited in Kumarage & Perera, 2017).

Some scholars hail from numerous disciplines have made significant conceptual contributions to the study of service quality measurement in higher education (Annamdevula & Bellamkonda, 2016b). Unfortunately, there are few studies conducted to discover the service quality and corporate image and their relationships on students' satisfaction and students' loyalty (Chandra et al., 2018). In the context of Sri Lanka, as mirrored in media and public dialogues, the quality of university education has frequently been criticized as unsatisfactory (Wijesiri, 2016). There is a noticeable gap in the level of service provided by Sri Lankan universities, which regularly falls short of meeting student expectations (Kumarage & Perera, 2017; Wijesiri, 2016). Subsequently, a significant inconsistency exists between what students expect from their universities and what they receive (Wijesiri, 2016). Besides, the literature shows inconsistencies regarding service quality, corporate image, student satisfaction, and student loyalty (Zainudin et al., 2023; Suhaily & Soelasih, 2023; Nguyen et al., 2024; Chandra et al., 2018). Therefore, empirical validation is mandatory to confirm the robustness of the study's findings in this regard. Students' satisfaction is identified as a missing link between service quality and corporate image in influencing students' loyalty (Har & Ramasamy, 2022;

Cahyono et al., 2020). This study is to investigate the effects of service quality, corporate image on students' satisfaction and students' loyalty through Structural Equation Modelling perspective. With this intent, this study focuses on presenting a model to explain the links among service quality, corporate image, students' satisfaction and students' loyalty in HEIs. Based on that, the study focused on to identify the relationship between Service quality and Students Satisfaction, to identify the association between corporate image and students' satisfaction, to identify the association between Service quality and students' loyalty, to identify the association between corporate image and students' loyalty, to identify the association between students' satisfaction and students' loyalty, to identify the mediating effect of students' satisfaction between service quality and students' loyalty, and to identify the mediating effect of Students' satisfaction between corporate image and students' loyalty.

Literature Review

Service Quality

Quality is an essential component of any product or service offered by an organization. Also, it is still considered as a concept that has produced significant interest and debate in the research literature (Kajenthiran & Karunanithy cited in Ananth et al., 2010). Moreover, measuring quality of a tangible product is easier in comparison to a service as service is an activity or series of activities which included more or less intangible nature which makes it more difficult to measure (Annamdevula & Bellamkonda, 2016a). Though service quality is measured with many popular models like SERVQUAL model some of the researchers criticized and argued whether those generic models are suitable to measure service quality of higher education and have developed alternative models (Annamdevula & Bellamkonda,

2016; Abdullah, 2006; Senthilkumar & Arulraj, 2011). Further, previous empirical studies about service quality have been primarily conceptualized based on customer's perspective and when it considers about higher education sector same approach has used by considering that students as the major customers in that field (Langstrand et al., 2015). The evidence gains through the previous studies revealed that focus on Service quality in the educational sector is useful due to its importance and consequences (Annamdevula & Bellamkonda, 2016). Though it is important, most of the researchers are unable to define service quality using common term/s especially in higher education (Annamdevula & Bellamkonda, 2016). Anyhow, Bellamkonda (cited in Annamdevula & Bellamkonda, 2016) created the HiEdQUAL, a framework for measuring service quality and they discovered that this new measurement tool, which consists of 27 questions separated into five dimensions, significantly improved how students perceived the overall quality of the services they received. Moreover, the model incorporated five factors of service quality in the higher education sector: administrative services, teaching and course content, academic facilities, support services, and campus infrastructure.

Corporate Image

Institutional image is a crucial feature for the overall competitiveness of an institution (Hwang & Choi, 2019). Further image can be identified that any person who is aware of an institution has a general impression of it in their mind, (Teeroovengadum et al., 2019). According to Eskildsen et al. (1999), corporate image variable has a significant impact on students' loyalty to higher education. At present student perception of service quality has grown significantly in recent years since it impacts student loyalty, an image of the university and



student satisfaction (Shurair & Pokharel, 2019). Moreover, a positive corporate image can be recognized as valuable asset which gives businesses a competitive edge by energizing potential customers (Ali & Abdullah, 2018). In some of the previous empirical studies corporate image is considered as a dimension of service quality. According to Gronroos (1978) there are three dimensions can be recognized under Services quality as “the technical quality of outcome”, “the functional quality of the service encounter” and “the corporate image”. Further Sultan and Wong (2012) also studied about SERVQUAL model in the higher education sector of Australia and able to identify that students’ trust, students’ satisfaction, and institutional image are the main factors of service quality in higher education institutes. Students give a professionally run campus a lot of attention, therefore universities need to focus on university image and work to keep enhancing the perception of a professional campus (Mulyono et al., 2020). According to Bapat, (2017) Service quality and corporate image are vital constructs in determining satisfaction. Moreover, corporate image covers a wide range of topics, including the institution's overall image, the image of its many departments, and its credibility or reputation (Kuo & Ye, 2009). In focusing on previous empirical studies can be identified that some of the authors pay attention to corporate reputation. But reputation and image are two different things as reputation is a more detailed version of the image that results from experience while image can be developed by an organization's image without the requirement for experience with the company (Barusman, 2014).

Students’ Satisfaction

Since the last few decades, student satisfaction has become a prominent fact to be research due to the competitiveness within the learning environment. Student

happiness is a multifaceted term that is influenced by a variety of circumstances, and several studies have revealed many correlates associated with various elements that influence student satisfaction levels (Weerasinghe & Fernando, 2018). Further it is high time to focus on the impact that it creates on the success of educational institutes and prospective student registration. In considering the real meaning behind the term satisfaction can be identified that different scholars provided variety of definitions from different perspectives. Among them customer perspective definitions are common. The term satisfaction can be described as the consumer's evaluation of the value of pleasure derived by level fulfillment from the customer's perspective (Oliver, 1981). Additionally, Kotler and Clarke (1987) defined satisfaction as an attitude experienced by an individual when the performance or outcome associates with his or her expectations. Through this study authors focused specially on students who engaged with higher studies. Therefore, in consideration about students’ satisfaction can be identified that it as a short-term attitude based on students' education (Elliott & Healy, 2001). In most of the definitions about satisfaction included about attitudes. Though satisfaction is strongly related to, but not identical to, the customer's overall attitude toward the service and the major difference between satisfaction and attitude is that satisfaction judgments are specific to individual transactions, whereas attitudes are more general (Wijesiri, 2016). Not only in business world but also in education field a huge competition can be identified among state universities, among state and private universities etc therefore to win from that competition need to focused on students’ satisfaction as well. Keeping a well satisfied customer is critical to gaining a competitive advantage in today's industry (Moslehpour et al., 2020). As students are the customers in an education



institute need to focused on their satisfaction in gaining such a cometitive advantage.

Students' Loyalty

Loyalty necessitates nurturing strong relationships with students, as they finally form the economic foundation for the educational institute's future operations, while concurrently enhancing the institution's brand image both on and off institute (Subrahmanyam & Shekhar, 2017). Moreover, studies which are based on student loyalty in higher education support university administrators in developing appropriate programs that promote, establish, develop, and maintain strong long-term connections with both current and former students (Annamdevula & Bellamkonda, 2016). According to Navarro et al. (2005), satisfaction in higher education can be considered as a positive forerunner of student loyalty toward educational institutions. Students' satisfaction and loyalty is the most important keys to determine the most appropriate strategic management to ensure successful long-term performance for public and private institutions (Teeroovengadum & Nunkoo, 2019). Higher education institutions that want to keep students till graduation and then draw them back must succeed by measuring student loyalty (Rojas-Méndez et al., 2009). Meanwhile students play a key role in educational institutes. To be loyal in the educational services industry, one must establish a strong rapport with the students who will ultimately be the source of funding for all future university operations (Rojas-Méndez et al., 2009). Students' satisfaction and loyalty are critical elements in formulating effective strategic management practices to ensure the long-term growth and success of both public and private institutions (Annamdevula & Bellamkonda, 2016). Austin and Pervaiz (2017) discovered a link between student satisfaction with college administration, amenities, and

faculty and student loyalty. Students frequently have the option to switch to other educational institutions throughout a study program, at least for some of the courses, therefore there is a possibility that they could take fewer classes or stop altogether and for that student loyalty is not just influenced by immediate results (Helgesen & Nettet, 2007). With the competition even among higher education institutes in both private and public sectors it is essential to pay much more attention toward students' loyalty. Because an educational institution benefits from having loyal students not just when students are official attendance; an educational institution's success is also dependent on the loyalty of former students (Annamdevula & Bellamkonda, 2016). Moreover it is important attract many students towards and educational institute as emphasized by the Abu-Elsamen et al.(2011) customer loyalty provides many benefits such as lowering the upfront costs of introducing and attracting potential customer, favorable word-of-mouth, increases in sales volume and sales value. Loyalty towards tangible products is emphasized by different authors but it is important to identify loyalty towards educational institutes like universities as they providing a service and even differ from one university to another. The majority of customer loyalty research has concentrated on brand or product loyalty, leaving service organization loyalty largely unexplored (Hussain et al., 1995). According to Helgesen & Nettet (2007), for higher education institutions, it is crucial to understand what factors affect student loyalty and further they need to focus on immediate consequences where student loyalty has a favorable impact on teaching quality through commitment and regular behavior. Moreover, previous empirical studies reveal different scales used to measure students' loyalty, among them Brown and Mazzarol (2008) developed a loyalty scale to assessed a student's



propensity to join the alumni, stay in touch with the professors, suggest a class or school to others, and return there for additional study. Nevertheless, Annamdevula & Bellamkonda, (2016) have tested student's loyalty by focusing on the way that students perceived or think about their educational institute and how they feel about it.

Service quality and Students Satisfaction

Service quality is considered as a crucial determinant of students' satisfaction in university education as universities are striving to boost their service aids to meet dynamic students' expectations. Service quality of university education encompasses different dimensions, including academic quality, facilities provided, administrative services, counselling services, and supportive services like career guidance activities and extracurricular activities (Nguyen & Le, 2023). These factors jointly stimulate the perceived value of the university education experience. Alam and Jahan (2022) affirm that responsive faculties, updated curriculum, and effective and efficient administrative practices and processes significantly impact on the level of students' satisfaction. Additionally, technological improvements and integration in education system have appeared as vital factors, which is blended learning environment claim more robust technical supports and flexibility (Rahman et al., 2023). Students' perception of service quality of the university education system is directly linked with the students' satisfaction, and it can affect to improve the retention rate, institutional reputation, and academic excellence and performance at large (Zhang & Liu, 2022). Those who feel the university education is supportive in academically and administratively, more likely to recommend their university for newcomers as well as for their future studies. Providing tailored services to

cater students in diverse fields of studies are becoming important components to maintain higher level of students' satisfaction (Singh & Gupta, 2024).

Study carried out by Kim (2011) emphasized that there is a significant influence of service quality on customer satisfaction. Satisfaction is generally referred to as the perceived performance of customers (Tse & Wilton, 1998).

H1: There is a positive and significant relationship between Service quality and Students Satisfaction

Corporate image and students' satisfaction

Corporate image plays a crucial role in determining the student's satisfaction in the circumstance of higher educational institutions. A strong corporate image of universities including university reputation, brand perception, and public relations are positively correlated with the student's satisfaction (Nguyen et al., 2023). Some universities are working towards creating favorable image, academic excellence, strong leadership, and attractive environment, which tend to attract more students and provide increased overall experience (Ahmad & Jan, 2022). Also, the image of the institution identifies as a critical factor which leads to retain students and their inclination to recommend the institution for others as well as for their postgraduate degrees in future (Nguyen et al., 2024). Studies that have concerned the relationship between corporate image and students' satisfaction asserted that university image is not only influence on prospective students but also it impacts on the perception of existing students (Nguyen et al., 2024; Chandra et al., 2019). If the students feel their university as a prestigious and reputable, satisfaction of students will be higher as the association between their expectations and the institution's image is high

(Hemsley-Brown & Oplatka, 2021). Moreover, factors such as modern facilities provided by the university, transparent communication platforms available in the university, and positive alumni supports may positively contribute to enhance the corporate image, which in turn enhance the students' pride and loyalty about the institution (Zainudin et al., 2023).

H2: There is a positive and significant relationship between corporate image and students' satisfaction

Service quality and students' loyalty

Service quality of higher educational institutions is identified as a crucial factor determining the student's loyalty. If the universities are delivering high-quality services to their students continuously, ensures the loyal students toward university programs in the long run. The relationship between service quality and students' loyalty has been extensively studied, and findings are suggesting that highly satisfied students are more likely to become reliable advocates for their institutions (Khan et al., 2023). As Parasuraman et al., (1988) pointed out, key factors of service quality such as reliability, tangibility, empathy, responsiveness, and assurance are contributing substantially to create positive students' experience. These dimensions of service quality are not only improving the students' satisfaction but also enhance the students' loyalty towards their university (Teeroovengadum & Nunkoo, 2019). Scholars have pointed out that institutions that have invested more on service quality improvement programs are more likely to maintain long-term relationships with their students, subsequent in increased loyalty (Rahman et al., 2022). Loyal students are more prone to recommend their university to peers, colleagues, and future students positively. As well as they would like to join with alumni works in future to

enhance the institutions reputation. Thus, the connection between service quality and student loyalty is well-recognized, with high service quality preceding to improved loyalty (Seng & Ling, 2023). Universities that prioritize service excellence not only benefit from increased student satisfaction but also cultivate a loyal student body, which is key to sustaining institutional growth and reputation in a competitive higher education market (Kumar & Sharma, 2023).

H3: There is a positive and significant relationship between Service quality and students' loyalty

Corporate image and student loyalty

Corporate image plays a crucial role in promoting students' loyalty in universities. A strong and positive corporate image, which includes the institution's perception, brand, and public recognition, are extensively affect students' commitment and loyalty to their higher educational institution (Nguyen et al., 2023). Higher educational institutes which have created a prestigious and reputable image in students' minds are more like to gain trust and loyalty, as university image often align with the students personal and professional expectations (Zainudin et al., 2023). When students understand their higher educational institute as a reputable and successful entity, they are more persuaded to increase a sense of pride and emotional bond, which directs to improved loyalty (Ahmad & Jan, 2022). The relationship between corporate image and students' loyalty can be strengthen through the ways of students perceive the institutions values, leadership, and achievements etc. A well-maintained university image can increase students' willingness to recommend for the university, contribute to alumni conducts, and advocate the institution to forthcoming students (Suhaily & Soelasih, 2023). Contrary, a

poor university image can negatively affect students' loyalty to the institution, even if the university services are adequate (Hemsley-Brown & Oplatka, 2021).

H4: There is a positive and significant relationship between corporate image and students' loyalty

Student satisfaction and student loyalty

Students' satisfaction is extensively recognized as a key determining factor of student loyalty in universities. Several studies have confirmed a strong positive relationship between students' satisfaction and students' loyalty (Chandra et al., 2018). this confirms that satisfied students are more like to remain loyal to their higher education institutes, proactively participate in alumni programs, and advocates the institution for prospect students (Khan et al., 2023). Quality of academic programs, quality of administrative services, facilities provided by the university, and over all teaching learning experience are some of the key determinants of the students' satisfaction that generate loyalty. loyalty is expected to be reinforced when these factors can meet the student expectations which is leading to long-term student commitment (Nguyen et al., 2023). The relationship between student satisfaction and loyalty is frequently described in the lens of services marketing, where satisfaction play as a key determinant to loyal behaviors such as positive word-of-mouth and retention (Ali et al., 2022). Students who are highly satisfied with the current university practices may be passionate to their institution, increasing their willingness to stayed engagement with the university even after graduation (Suhaily & Soelasih, 2023). Furthermore, student satisfaction has a mediating role in the relationship between service quality and loyalty where satisfied student powered by high-quality services lead to improved loyalty, whereas displeasure can result in student

detachment and negative word-of-mouth (Zainudin et al., 2023). Consequently, student satisfaction is a fundamental factor of student loyalty, and universities targeting to improve student retention and engagement necessity to arrange strategies that enhance the overall student experience, from academic sustenance to university life. Loyal students are not only impacting the institution in terms of image and retention but also influence to its prestige through encouragement and positive recommendations.

H5: There is a positive and significant relationship between students' satisfaction and students' loyalty

Indirect effect of students' satisfaction

The mediating effect of student satisfaction in the relationship between service quality and student loyalty has been extensively investigated in the higher education context. Literature indicates that when service quality has a direct influence on loyalty, this relationship is frequently increased through the mediating role of satisfaction (Annamdevula & Bellamkonda, 2016b). When higher educational institutes provide improved quality service to their students in the areas of academic support, administrative support, and facilities, students are more likely to experience higher level of satisfaction, which, in turn, improves their loyalty toward the institute (Nguyen et al., 2023). Satisfaction assists as a bridge, linking the experience of quality services with students' long-term commitment and positive behaviors, such as advocates the institution and contributing to alumni activities (Ali et al., 2022). Several studies have exhibited that satisfied students are more willing to remain loyal, although several characteristics of service quality vary. Annamdevula and Bellamkonda (2016b) found that satisfaction significantly mediates the relationship between service quality and loyalty. although, some minor

service provided by the university fails to perform as expected, it may not significantly affect student loyalty if overall satisfaction remains high. This indicates that universities or any other higher educational institutes should not only focus on increasing the service quality but also on ensuring student satisfaction to promote loyalty (Suhaily & Soelasih, 2023; Khan et al., 2023).

Additionally, student satisfaction is identified as a key mediator in the relationship between corporate image and student loyalty in higher education institutions (Nguyen et al., 2023; Suhaily & Soelasih, 2023; Annamdevula & Bellamkonda, 2016). Corporate image, which contains the reputation, brand, and public perception, is significantly influence on student loyalty. Conversely, this relationship is frequently intensified through the mediating effect of student satisfaction (Nguyen et al., 2023). An institute which has a strong corporate image can attract more students in line with their expectations, but to improve loyalty, the institution must guarantee high levels of satisfaction. When students recognize the university's image positively and their educational experience meets or exceeds their expectations, they are more likely to foster loyalty (Suhaily & Soelasih, 2023). Scholars have pointed out that though a university or any other educational institute has a respected corporate image, the ability to transfer that prestigious image into student loyalty is depending on their overall experience. Zainudin et al. (2023) found that student satisfaction performs a critical role in improving the positive effects of corporate image on loyalty. it further elaborates that a strong image is not sufficient to secure long-term loyalty unless ensuring the student satisfaction. Likewise, Annamdevula and Bellamkonda (2016) mentioned that satisfaction play as a mediating variable, where students who are satisfied with the

service provided by the university tend to remain loyal, particularly when they understand the university's image positively.

H6: Students' satisfaction mediates the relationship between service quality and students' loyalty

H7: Students' satisfaction mediates the relationship between corporate image and students' loyalty

Theoretical Lenses

The Disconfirmation Theory (Oliver, 1980) asserts that satisfaction happens when there is a positive disconfirmation between customers' expectations and their actual experience. in higher education, this theory suggests that students experience satisfaction when the university's services surpass their expectations. Therefore, student satisfaction acts as a mediating factor between service quality and student loyalty, as positive experiences foster ongoing loyalty to the university (Weerasinghe et al., 2017). Also, the corporate image theory highlights the importance of a positive reputation and brand image in promoting customer loyalty. In higher education, corporate image relates to the university's public image, its reputation for academic superiority, and its ability to attract students. Corporate image strongly impacts student satisfaction, which in turn affects student loyalty (Nguyen & LeBlanc, 2001). Relationship Marketing Theory advises that companies should focus on creating long-term relationships with customers to retain their loyalty (Berry, 1983). In higher education, the quality of the relationship between a university and its students plays a critical role in nurturing student loyalty (Helgesen & Nasset, 2007). Ajzen's Theory of Planned Behavior (TPB) (1991) is applicable in identifying how attitudes, subjective norms, and perceived

behavioral control influence students' intentions and behaviors. TPB suggests that students' loyalty to an institution is affected by their satisfaction with service quality and corporate image, as these shape their attitudes toward the organization. As students recognize the university positively, their loyalty intents are reinforced, preceding to actual loyal behaviors (Hennig-Thurau et al., 2001).

Methods

The positivist research study was followed by the study as it focused on identifying the relationships among study variables using empirical data. The study adopted the deductive research approach. Existing theories and literature were applied to develop the conceptual model and

hypotheses of the study. A quantitative research strategy was employed, using a survey method. The cross-sectional time horizon was followed by the study capturing study data from a single point in each time to assess the causality among study constructs.

The population of the study was considered all undergraduate students enrolled to the Faculty of Management and Finance, University of Ruhuna, Sri Lanka in 2024. As per the faculty records there are 2400 students enrolled to the Faculty of Management and Finance, University of Ruhuna. The Faculty of Management and Finance was selected to carry out this study as it is the faculty which has the second largest student population at the University of Ruhuna.

Table 1: Profile of Respondents

Demographic Factor	N	Percentage
Gender - Male	447	32.44%
Female	931	67.56%
Degree Type – Accounting	294	21.34%
Business Management	263	19.09%
Entrepreneurship	203	14.73%
Finance	148	10.74%
Human Resource Management	277	20.10%
Marketing	193	14.00%

Following the Census sampling technique, it was able to receive 1378 of responses from respondents. The google form comprised with all questions of the questionnaire shared among all students using their WhatsApp groups. None of the questionnaires had to be eliminated as it is mandatory to fill all questions to proceed in the google form. Accordingly, all 1378 questionnaires were considered for the study. The demographic profile of the respondents comprised the gender, and degree type, as can be seen in Table 1. A structural path model was applied to measure the study reflected in hypotheses which is aimed to determine the effect of service quality and university image on

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The structural model proposed for the study is illustrated in the figure 1.

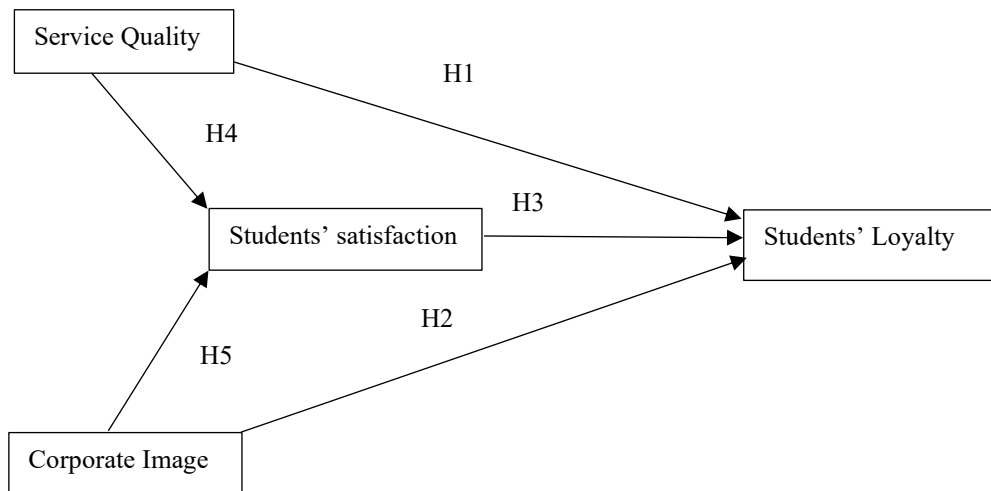


Figure 1: Conceptual Framework

The study was employed a structured questionnaire developed based on previous studies. The research instrument comprised with five sections. The first section covered the profile of the respondents while the second, third, fourth and fifth sections addressed service quality, students satisfaction, corporate image, and students loyalty, respectively. The construct of the service quality consisted with 16 indicators. This was adapted and modified from the research carried out by Annamdevula and Bellamkonda (2016). The students

satisfaction construct was measured using 7 indicators pointed out by Subrahmanyam and Shekhar (2016). Corporate image was measured using 8 items designed by Helgesen and Nesset (2007) and Arpan, et al., (2003). Lastly, the variable of Students loyalty was consisted with 4 indicators taken from Subrahmanyam and Shekhar (2016) and Annamdevula and Bellamkonda (2016). All these indicators were assessed using a five-point Likert scale scoring which was ranged from 5-Strongly agree to 1-strongly disagree.

Table 2. Operationalization of Study Variables

Variable/Dimension	Indicators	Source
Service quality	- Syllabuses are completed on time - Course instruction form is strictly followed - Lecturers are following good teaching practices - Lecturers treat all students in equal manner - Administration staff provide promised services - Administration staff are polite - Administration staff can easily contact during office hours	Annamdevula and Bellamkonda (2016)

	• Lecturers respond adequately • Department has sufficient academic staff • The library has adequate resources • University provided enough internet facilities • University has adequate Computer Lab facilities • University sports facilities are adequate • Security measures taken by the university is satisfactory • Medical services provided by the university is satisfactory • Hostel facilities provided by the university is adequate	
Students' satisfaction	• Quality of equipment & facilities available in the university is adequate • Quality of security system available in the university is adequate • Quality of student affairs services available in the university is adequate • Overall maintenance of the university is satisfactory • Hygiene facilities available in the university is adequate • Canteen facilities available in the university is adequate • Quality of administration Services of the university is satisfactory	Subrahmanyam and Raja Shekhar (2016)
Corporate image	• The university offers diverse degree programs • University has well-known professors • The university has an attractive environment • The university is committed to academic excellence • The university is committed to athletic excellence • The university follows nationally recognized academic programs • The university is committed to social services • The university is well respected by colleagues and friends	Helgesen and Nettet (2007), Arpan, Raney and Zivnaska (2003)
Students' loyalty	• I always feel proud to study at this University • I always care about my university • I will usually refer my university to my Friends/Family	Subrahmanyam and Raja Shekhar (2016), Annamdevula and

	I usually prefer to follow postgraduate Studies in this University	Bellamkonda (2016)
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Structural Equation Modelling (SEM) approach was applied to analyze the data collected for the study using the Smart-PLS software. SEM approach was employed to assess the effect of service quality, university image on students' satisfaction and students' loyalty based on the structural model developed in figure 1. Meanwhile, SPSS software was also used to analyze the demographic variables of the study including age and degree type of the students.

Data Analysis

Measurement Model Assessment

Initially, the path model was tested for the model fitness of the measurement model as a prerequisite of the structural model assessment (Hair et al., 2019). The fitness of the measurement model was confirmed using reliability, discriminant validity, and convergent validity. Outer loadings were measured to estimate how well the observed variables reflect their respective latent constructs. Table 3 explains the outer loadings of the measurement model and ensures that the indicators used in the measurement model are reliable and contribute meaningfully to the latent constructs, improving both the quality and validity of the PLS model (Hair et al., 2019). Cronbach's alpha and composite reliability were considered to quantify the reliability of the data, and the

corresponding results are accessible in Table 3. The measurement model is reflected reliable if both Cronbach's alpha and composite reliability values exceed 0.7 for all latent variables (Hair et al., 2019). Convergent validity was established (table 3) to confirm that the question items used to assess the latent variables were closely related, so that the items jointly measured the same concept. The threshold for convergent validity was satisfied if the average variance extracted (AVE) for each latent variable exceeded 0.5 (Hair et al., 2019). The equivalent AVE results shown in Table 3 confirm that convergent validity is established.

Additionally, multicollinearity was measured to identify the relationship issues between two or more independent variables (Sekaran & Bougie, 2010). The nonexistence of multicollinearity is confirmed if the variance inflation factor (VIF) values are below 5 (Hair et al., 2019). As the VIF values in this study were below (table 3) the recommended threshold, the nonexistence of multicollinearity was confirmed. Table 4 explains that the AVE extracted for each construct is higher than the obligatory level of 0.5 (50%). Fornell & Larcker (1981) highlighted that each construct has a capability to explain more than half of variance in measuring items on average. Thus, the convergent validity is established.

Discriminant validity was assessed using multiple criteria: (1) cross-loadings, where each item should load highest on its

each construct to exceed its highest correlation with other constructs (Fornell

& Larcker, 1981); and (3) the Heterotrait–

Table 3. Operationalization of study variables

Variable/Dimension	Item Code	Outer Loadings	Cronbach's Alpha	Composite Reliability	AVE	VIF
Service Quality (SQ)	SQ1	0.841	0.891	0.789	0.671	3.278
	SQ2	0.834				3.694
	SQ3	0.862				2.347
	SQ4	0.724				2.436
	SQ5	0.865				2.870
	SQ6	0.745				2.157
	SQ7	0.747				2.450
	SQ8	0.788				3.133
	SQ9	0.721				2.358
	SQ10	0.823				1.689
	SQ11	0.835				1.750
	SQ12	0.847				1.802
	SQ13	0.813				2.168
	SQ14	0.755				2.353
	SQ15	0.798				1.745
	SQ16	0.820				2.092
Students Satisfaction (SS)	SS1	0.821	0.824	0.862	0.574	2.249
	SS2	0.823				2.177
	SS3	0.835				2.660
	SS4	0.846				2.629
	SS5	0.832				2.968
	SS6	0.864				3.279
	SS7	0.822				1.920
Corporate Image (CI)	CI1	0.766	0.853	0.857	0.690	2.083
	CI2	0.815				2.399
	CI3	0.835				2.166
	CI4	0.860				2.463
	CI5	0.810				2.382
	CI6	0.777				1.992
	CI7	0.741				2.416
	CI8	0.817				2.221
Students Loyalty (SL)	SL1	0.723	0.942	0.943	0.593	2.565
	SL2	0.845				2.101
	SL3	0.798				2.382
	SL4	0.793				2.950

respective construct (Hair et al., 2019); (2) the Fornell–Larcker criterion, which requires the square root of the AVE for

Monotrait (HTMT) ratio, where values should be less than 0.9 for each construct (Hair et al., 2019). The results presented in Tables 4, 5, and 6 confirm that all

discriminant validity criteria were satisfied.

Table 4. Discriminant Validity – Fornell and Larcker Criterion

Variable	SQ	SS	CI
SS	0.684	0.831	
CI	0.636	0.805	0.831
SL	0.617	0.719	0.777

Table 5 presents the HTMT values derived from the measurement model using the PLS algorithm. All values are below the threshold of 0.9, indicating an acceptable

level of discriminant validity. Therefore, based on the HTMT results in Table 5, discriminant validity is confirmed for this measurement model.

Table 5. Heterotrait-Monotrait Ratio (HTMT)

Dimension	SQ	SS	CI
SS	0.874		
CI	0.865	0.884	
SL	0.921	0.931	0.912

To ensure discriminant validity, item-level assessment was conducted using cross-loading analysis (Chin, 1998). Each indicator is expected to exhibit a loading value greater than 0.70 and exceed all

corresponding cross-loadings (Hair et al., 2019). As shown in Table 6, all item loadings meet these criteria, thereby confirming discriminant validity.

Table 6. Cross Loadings

Dimension	SQ	SS	CI	SL
SQ1	0.820			
SQ2	0.834			
SQ3	0.779			
SQ4	0.763			
SQ5	0.778			
SQ6	0.768			
SQ7	0.805			
SQ8	0.823			
SQ9	0.811			
SQ10	0.742			
SQ11	0.759			
SQ12	0.788			
SQ13	0.838			
SQ14	0.854			
SQ15	0.758			



SQ16	0.812	
SS1	0.808	
SS2	0.806	
SS3	0.819	
SS4	0.836	
SS5	0.766	
SS6	0.841	
SS7	0.795	
CI1	0.834	
CI2	0.821	
CI3	0.725	
CI4	0.867	
CI5	0.801	
CI6	0.821	
CI7	0.796	
CI8	0.776	
SL1	0.981	
SL2	0.894	
SL3	0.871	
SL4	0.823	

Structural Model Assessment

It was found that the measurement model assessment is adequate and acceptable, having undertaken multiple validation steps. To validate the structural model in PLS-SEM, several standard assessment criteria were applied as recommended by scholars. The study managed several assessments, including the coefficient of determination (R^2), the blindfolding-based cross-validated redundancy measure (Q^2), and the statistical significance and relevance of the path coefficients as proposed by Hair et al. (2019).

It is recommended that Q^2 values should be greater than zero for specific independent variables to demonstrate predictive accuracy for that construct in the structural model. Typically, Q^2 indicates a small effect where its value greater than 0, medium effect was shown

by the values greater than 0.25, and values greater than 0.5 indicate a large predictive effect in the PLS path model (Hair et al., 2019). Q^2 values shown in the table 5 below shows that all values are greater than 0.4, indicating medium (less than 0.5) to strong (greater than 0.5) predictive relevance in the PLS model.

Hair et al., (2019) pointed out that the R^2 value are ranged between 0 and 1, where higher values indicate greater explanatory power. Following that, values of 0.75 are considered substantial, 0.50 are moderate, and 0.25 are weak relative to predictive power (Hair et al., 2019). Table 6 indicates that, 72.4% of the variance in SL was explained by SQ, SS, and CI. Moreover, the model explains 89.1% of the variance in CI. All results exceed the recommended threshold of 50%, with values ranging from 72.4% to 89.1%, indicating moderate to substantial explanatory significance.

Table 7: Predictive Relevance and Coefficient of Determination

Endogenous Variables	Q ² predict	R ²
SQ	0.731	0.864
SS	0.691	0.731
CI	0.748	0.891
SL	0.823	0.724

Note: Q² predict: Predictive relevance; R²: Coefficient of determination

Hypothesis Analysis

Hypothesis 1 determined the relationship between service quality and students' satisfaction. As per the information given in the table 6, path coefficient between SQ and SS is significant and positive ($\beta = 0.699$, $p < 0.05$). this concludes that H1 is supported. H2 of the study was to understand the relationship between corporate image and students' satisfaction. Path coefficient between CI and SS indicated a significant and positive relationship ($\beta = 0.821$, $p < 0.05$) where H2 is supported. Third hypothesis (H3) of the study was to identify the relationship between service quality and student loyalty. The path model coefficient indicated that there is a positive and significant relationship between SQ and SL ($\beta = 0.725$, $p < 0.05$). Thus, H3 is supported by the path model. Corporate image and student loyalty was determined by hypothesis 4.

According to the survey results, there is a positive and significant relationship between CI and SL ($\beta = 0.783$, $p < 0.05$) where the H4 is supported. The final hypothesis of the study (H5) was the relationship between student satisfaction and student loyalty. The path model coefficient value ($\beta = 0.747$, $p < 0.05$) given in the table 6 confirms that there is a positive and significant relationship between SS and SL, hence the hypothesized relationship in H5 is

supported. Moreover, the study stresses the indirect effect of students' satisfaction on the relationship between SQ-SL and CI-SL. As shown in table 6, students' satisfaction positively and significantly mediates the relationship between service quality and students' loyalty ($\beta = 0.542$, $p < 0.05$) and relationship between corporate image and students' loyalty ($\beta = 0.476$, $p < 0.05$) where H6 and H7 are supported.

Table 8. Path Coefficients (β) and T-statistics

No	Effect	Coefficient	T statistics	P value	Result
H ₁	SQ->SS	0.699	14.811	0.000	Supported
H ₂	CI->SS	0.821	11.265	0.000	Supported
H ₃	SQ->SL	0.725	10.963	0.000	Supported
H ₄	CI->SL	0.783	12.568	0.000	Supported
H ₅	SS->SL	0.747	11.534	0.000	Supported
H ₆	SQ->SS->SL	0.542	11.324	0.000	Supported
H ₇	CI->SS->SL	0.476	10.541	0.000	Supported

Discussion



Results of the Path model analysis show that there is a significant and positive relationship between service quality and students' satisfaction. Scholars also have confirmed the similar results in their studies (Har et al., 2022; Chandra et al., 2018). These results stress the fact that it should be more focused on service quality as it directly affects students' satisfaction. It is imperative that enhancing service quality is highly important since there is a possibility to emerge new public and private universities in future. To keep the current demand and satisfaction of the students it is crucial to maintain the service quality offered by the university to students (Chandra et al., 2018). This study provides most important contributions to the current literature and practices in higher education of Sri Lankan context regarding the development of research outcomes and assessing the effect of exogenous variables of students' satisfaction and loyalty (Ngyuven et al., 2024). Based on the direct effect analysis, the study highlighted the role of academic facilities, services, and corporate image dimensions that significantly improved students' satisfaction and loyalty. Moreover, the study finds the role of the university image in increasing the relationship between students' satisfaction and students' loyalty. These results reinforced the views on the role of service quality and customer satisfaction and loyalty (Ngyuven et al., 2024; Chandra et al., 2018; Gong & Yi, 2018; Ali et al., 2018) in higher education. This study also provides evidence that, despite the established role of academics, programs, curricula, facilities, and non-academic support in student satisfaction (Har et al., 2022; Teeroovengadum et al., 2019), the relationship between service quality, university image, and student satisfaction in the context of industry interaction remains unclear (Nguyen et al., 2024). Student satisfaction play as a bridge between service quality and loyalty. When students recognize that the university

provides high-quality services, they are more likely to feel satisfied with their experience (Kuo & Ye, 2009). This increased satisfaction, in turn, fosters a sense of attachment and loyalty toward the university. Deprived of this mediate step of satisfaction, the direct impact of service quality on loyalty might be declined (Annamdevula & Bellamkonda, 2016b; Helgesen & Nettet, 2007). Likewise, corporate image has been identified as a considerable predictor of student loyalty (Brown & Mazzarol, 2008; Weerasinghe & Fernando, 2018). At the time students recognize that the university has a positive and reputable public image, they are more likely to be satisfied with their decision to enroll (Hwang & Choi, 2019). Hence, universities should guarantee that their image is corresponded by the service quality, thus improving student satisfaction and, subsequently, loyalty. It emphasizes that, beyond organizing workshops and industrial visits, higher education institutions need to promote internships and externship programs and integrate industry experts directly into the teaching process. The value gained from industry engagement would not only enhance service quality but also boost the university's image, leading to improved student satisfaction and loyalty. Ultimately, these interactions will give universities a competitive advantage, while students will gain access to the effective and efficient knowledge, skills, and attitudes required to meet labor market demands successfully.

Conclusion and Recommendations

This study attempts to disclose the relationships of service quality and corporate image on students' satisfaction and student loyalty. It is vital for universities to understand the current level of satisfaction and loyalty of students as they are facing tremendous demand issues in the marketplace. Emerging new public



sector universities and private sector universities threatening the conventional university system. Thus, traditional universities need to understand their existing level of demand, students' satisfaction and loyalty to meet the market pressure effectively. Accordingly, this study has resulted in some conclusions. First, the study confirms the existence of positive and significant relationship between service quality and students' satisfaction. Second, study validates the positive and significant relationship between corporate image and students' satisfaction. In third, the study concluded that there is a positive and significant relationship between service quality and students' loyalty. Additionally, it has concluded that there is a significant and positive relationship between corporate image and student loyalty. the current study affirms that there is a positive and significant relationship between student satisfaction and students' loyalty in the fifth. The study emphasizes more insights to the education system of the country. Enhancing the service quality of educational institutions is a key driving factor to achieve sustainable development goals of the United Nations (Nguyen et al., 2024). This study offers more robust empirical evidence on the role of service quality in student satisfaction and loyalty. It identifies the key quality dimensions within higher education institutions that significantly impact student satisfaction. Additionally, the study explores how corporate image influences both student satisfaction and loyalty. Consequently, universities must implement strategies to enhance service quality, corporate image, and student satisfaction to cultivate student loyalty, ultimately improving educational outcomes by equipping learners with knowledge, skills, and attitudes that contribute to an excellent higher education system. Finally, student satisfaction is a critical mediator in the relationships between service quality and student loyalty, and in between corporate

image and student loyalty. The findings of the study further affirms that universities should prioritize policies that improve both the quality of services and corporate image while confirming that these attempts lead to high levels of student satisfaction.

Future Research

Future researchers are stimulated to perform similar studies across other state universities and private universities to ensure the consistency and generalizability of the findings. Furthermore, they could investigate cultural and regional differences in the same study phenomenon. Other mediators, such as trust, emotional attachment, and perceived value, could also be investigated to achieve more robust findings. Additionally, investigating postgraduate students' loyalty could provide insights into the external effects of the study variables and extend the understanding of student loyalty beyond undergraduate experiences.

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