# The Role of E-service Quality in Shaping Students' Satisfaction in the Pandemic Context

Review of Integrative Business & Economics Research

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**ABSTRACT**

The pandemic necessitated universities and colleges worldwide to offer services that differed from the usual. This transformation requires improved performance levels in higher educational institutions (HEIs) worldwide. Identifying the areas operating well and those requiring development is crucial to achieving the necessary performance levels. A method to ascertain these areas is by surveying the students' satisfaction. One critical factor to satisfy students is the provision of high-quality services. The present research adds to the existing body of literature by examining the role of e-service quality on student satisfaction amidst the pandemic. Data was obtained from 703 participants using structured questionnaires and analyzed using structural equation modeling (SEM). The study's findings, conclusions, and recommendations are discussed.

Keywords: E-service quality, higher education, student satisfaction.

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## 1. INTRODUCTION

Student satisfaction surveys have been conducted worldwide at public and private colleges (Al-Otaibi *et al*., 2020; Moslehpour, 2020; Salles, 2020). However, student satisfaction during the pandemic has yet to be thoroughly investigated. This study fills a gap in student satisfaction research by examining how e-service quality affects student satisfaction during the pandemic. E-service quality impacts student happiness throughout the pandemic by influencing learning and well-being. The global pandemic's shift to remote and online learning has forced educational institutions to rely extensively on e-services to provide content, facilitate communication, and assist students (Quiachon & Paulino, 2023). Thus, student satisfaction and success are dependent on the quality of e-services. During the COVID-19 pandemic, internet-based lecture services transformed how professors and students interacted (Pizarro-Uy & Manapat, 2023). Their service quality is measured differently. E-service quality is the most recent form of service quality. Interactive information is an indicator of e-service quality. E-service quality determines a company's competitive advantage. It streamlines browsing, enhances purchasing, and broadens distribution. E-service excellence is a well-defined notion in e-commerce. However, e-service and service quality parameters are different. Globally, service quality


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and its reasons are critical. Despite its popularity in the literature, its dynamic and contextual nature make it a valuable research area. Although the current research was carried out in the Philippines, the findings may mirror the challenges experienced by most, if not all, higher education institutions worldwide.

## 2. LITERATURE REVIEW

### 2.1 Student Satisfaction

In the service industry, satisfaction is among the most frequently discussed subjects. Additionally, this concept has been considered multidimensional. Universities are increasingly cognizant of the importance of their student populations in academia. Consequently, student satisfaction has garnered exceptional research attention since the 1980s (Al-Otaibi *et al*., 2020). Student satisfaction has been the subject of extensive research for decades. It is defined in a variety of ways. For example, Kotler and Clarke (1987), as cited in Mestrovic and Zugic (2018), defined student satisfaction as an individual attitude and the perception of the discrepancy between expectations and perceived service consumption. Saleem *et al*. (2017) defined student satisfaction as the degree to which an institution's service performance aligns with the expectations of students. It is also defined as a short-term attitude from assessing a student's educational experience (Al-Sheeb *et al.*, 2018; Weerasinghe & Fernando, 2018). Most definitions of student satisfaction are associated with the experiences of students. Student satisfaction is "*a short-term attitude and a result of their experiences with educational services*" (Santos *et al*., 2020, p.4).

Similarly, Al-Otaibi *et al*. (2020) defined student satisfaction as the individual outcome of the diverse outcomes and experiences at a higher education institution. In the meantime, Ali *et al*. (2016), as cited in Moslehpour *et al.* (2020), revealed that student satisfaction is "*a cognitive or affective reaction to a single or prolonged set of services that students encounter*" (p.3). Although there were differences in the definitions, most scholars concurred that student satisfaction is a multifaceted concept with various antecedents (Weerangsinghe & Fernando, 2018; Al-Otaibi *et al*., 2020). Research and academicians have identified service quality as the most significant factor among its antecedents. Student satisfaction in higher education was discovered because of concerns regarding service quality, according to Al-Otaibi *et al*. (2020).

Student satisfaction is considered a dynamic construct in higher education because of its ongoing evolution and how it is explicated in theoretical discussions, research methodologies, and focus (Al-Sheeb *et al*., 2018). According to academics, student satisfaction encompasses more than the student's educational experience; it is a comprehensive response, a compilation of all the student's experiences, or an overall evaluation of service (Al-Otaibi *et al*., 2020). Cumulative satisfaction, the cumulative experience with a product or service provider to date, is the primary focus of recent studies on satisfaction (Al-Otaibi *et al*., 2020). Student satisfaction is the evaluation by students of the exceptional quality or superiority of the services offered by higher education institutions. In this study, student satisfaction refers to the student's comprehensive assessment of the quality of higher education services during the pandemic. The numerous advantages of student satisfaction render it a significant factor. Providing high-quality services to customers is contingent upon student satisfaction (Al-Otaibi *et al.*, 2020). Student satisfaction is a metric to evaluate online programs' quality and efficacy in online learning (Rajabalee & Santally, 2020). First and foremost, it enhances student registration, motivation, loyalty, and retention rates (Salles *et al*., 2020;


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Weerasinghe & Fernando, 2018). It is also crucial for the survival and success of an organization (Al-Otaibi *et al*., 2020; Moslehpour *et al*., 2020; Weerasinghe & Fernando, 2018). In the context of this study, student satisfaction is interchangeable with consumer satisfaction, as students are the primary customers of HEIs. Quality educational services are the primary business of HEIs to meet the educational requirements of students. Nevertheless, it is challenging to assess student satisfaction levels in the service industry, such as higher education, particularly in government universities (Weerasinghe & Fernando, 2018).

### 2.2 E-Service Quality and Service Quality

E-commerce success is contingent upon the distinctive character of e-services (Shankar & Datta, 2020). It is defined as the capacity of electronic services to meet customers' needs cost-effectively and efficiently (Shankar & Datta, 2020). The preceding definition is predicated on the notion that the quality of e-services is distinct from the perception of service quality. Consequently, the excellence of an e-service is the extent to which a website enables various transactions. Mohammed *et al*. (2016) define it as the customer's overall assessment of the quality and excellence of e-service offerings in the virtual marketplace. Enrollment, course delivery and support, and library services comprise e-services in higher education (Kim-Soon *et al*., 2014). The e-service quality of online higher education reflects the perceptions of the quality of online exchanges in various dimensions, including efficiency, privacy, system availability, and fulfillment, as per Kilburn *et al*. (2016). The emergence of internet-based lecture services during the Covid-19 pandemic has transformed how lecturers and students interact. Their level of service is evaluated in a manner that is distinct from the previous method. Electronic service quality, or e-service quality, is the most recent iteration of Service Quality. An interactive information service is electronic service quality (e-service quality). The excellence of its e-service determines a company's competitive advantage.

The distribution capabilities of e-service quality are expanded, purchasing activities are simplified, and purchases are made effectively and efficiently. An established construct in the e-commerce literature is e-service quality. Nevertheless, there are still discrepancies in the dimensions that constitute the quality of e-services. Kilburn *et al*. (2016) introduced the e-S-QUAL (e-Service Quality) scale, which comprises four dimensions: efficiency, system availability, privacy, and fulfillment. Kaur *et al*. (2020) concurrently devised, refined, and validated a scale to assess the quality of e-services. Information quality and usability, reliability, security and privacy, efficiency, system availability, and assurance comprise the scale's six dimensions. The scale was implemented in the banking sector; however, it was proposed that other service providers could employ it for benchmarking and assessing their performance over time. The scale is employed to bridge the discrepancy between the perceived quality and the expectations of customers.

### 2.3 e-Service Quality and Satisfaction

In general, there is no distinction between e-satisfaction and satisfaction. E-satisfaction is when a product or service exceeds the consumer's expectations (Ashiq & Hussain, 2024; Rodriquez *et al*., 2020). It is defined as consumer contentment derived from prior purchases of specific electronic services (Ashiq & Hussain, 2024). E-satisfaction is the degree of contentment customers experience when shopping online in a commercial environment (Ashiq & Hussain, 2024). It is an emotional state caused by the failure to confirm positive or negative original expectations for the experience of ownership or


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consumption (Rofiah *et al*., 2023). Electronic satisfaction is customer contentment derived from genuine purchasing experiences (Ashiq & Hussain, 2024; Rodriquez *et al*., 2020). The metric employed to evaluate customer satisfaction is the extent of consumer contentment with the products or services provided by online retailers. The efficacy of websites and the products they provide are the determining factors in online consumer satisfaction. The quality of e-services will be the determining factor in e-satisfaction (Ashiq & Hussain, 2024). The quality of e-services is a critical factor in evaluating the value of online consumers, as it considerably impacts e-satisfaction. E-service quality dimensions can be employed to forecast online consumer satisfaction. The quality of e-service is closely correlated with online consumer satisfaction, and a robust positive correlation between e-satisfaction and e-service quality has been demonstrated in numerous studies. The excellence of e-services in the context of online learning is the determining factor in students' e-satisfaction. Previous studies on the link between e-service quality and e-satisfaction show contradicting results. Some studies revealed that e-service quality has little impact on e-satisfaction (Ashiq & Hussain, 2024; Ratnasari e*t al*., 2021). Meanwhile, other studies found that e-service quality positively relates to e-satisfaction (Demir *et al.*, 2020; Rodriquez *et al*., 2020; Simbulon & Yanti, 2021).

### 2.4 Service Quality and Student Satisfaction

The service industry depends on student satisfaction and service quality (Moslehpour *et al.*, 2020). Most of the HEIs leverage service quality to establish a competitive edge. Numerous universities and colleges strive to exceed the service quality expectations of their students. Previous research has demonstrated a robust correlation between student satisfaction and service quality, as evidenced by Osman and Saputra (2019) and Subrahmanyam (2017) findings. Previous research has demonstrated that quality is primarily determined by the consumer's evaluation of the value they receive from the product/service or the extent to which an environment facilitates an individual's success (Datta & Vardhan, 2017; Osman & Saputra, 2019). Students are patrons of HEIs in the context of education (Osman & Saputra, 2019). Customer satisfaction results from service quality (Moslehpour *et al.*, 2020; Datta & Vardhan, 2017). According to Moslehpour *et al*. (2020, p.3), student satisfaction is "*an attitude that emerges from the evaluation of the quality of the student experience for service*." It is a sensation that a student experiences as a client when they are presented with benefits that align with their desires (Khan *et al*., 2018).

The relationship between service quality and student satisfaction has been investigated for a long time (Bawais *et al*., 2020). The findings are consistent; there is a direct and substantial relationship between service quality and student satisfaction (Afan Suyanto *et al.*, 2019; Al-Otaibi *et al*., 2020; Pedro *et al*., 2018; Bawais *et al*., 2020; Moslehpour *et al*., 2020; Oslan & Saputra, 2019). Service quality is an antecedent of students' satisfaction in higher education (Oslan & Saputra, 2019; Santos *et al*., 2020; Ushantha & Kumara, 2016). It plays a significant role in building student satisfaction. Increasing the service quality can increase student satisfaction (Afan Sayunto *et al*., 2019). Various authors agreed that service quality is positively related to student satisfaction (Afan Suyanto *et al*., 2019; Al-Otaibi *et al*., 2020; Oslan & Saputra, 2019). Service quality is essential to customer satisfaction in traditional and online environments. Service quality is the most critical purchase decision factor influencing the customers' buying decisions. In an educational setting, if the service quality improves, the students' satisfaction will increase (Afan Suyanto *et al.*, 2019). To attain true customer satisfaction, companies need to achieve service quality by eliminating the causes of direct complaints,


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but they also need to provide their products with excellent and attractive quality to delight them. Therefore, research on customer satisfaction is often closely associated with measuring service quality.

### 2.5 Mediating Effects Between e-Service Quality, Service Quality, and Student Satisfaction

Better service quality yields higher customer satisfaction (Moslehpour *et al*., 2020). Hence, examining the mediating role of service quality in the relationship between e-service quality and student satisfaction offers valuable insights into how traditional and digital service aspects influence overall student satisfaction. E-Service quality refers to the quality of digital or online services provided by an institution (Kilburn *et al*., 2016), characterized by factors such as ease of use, reliability, responsiveness, personalization, and accessibility of online platforms and resources. Meanwhile, service quality is the overall quality of services provided by an institution, including physical facilities, interpersonal interactions, reliability, responsiveness, assurance, and empathy in traditional (offline) settings. High e-service quality enhances the traditional service quality experience. For instance, efficient online administrative processes can lead to better face-to-face interactions, improving overall perceived service quality and student satisfaction. Students often perceive the quality of an institution's services holistically. Excellent e-service quality can elevate the perception of overall service quality, increasing student satisfaction. For example, an easy-to-navigate online portal might positively influence students' perceptions of the institution's overall service reliability and responsiveness. Effective e-services build trust and reliability, crucial components of traditional service quality. When students trust the institution's e-services, their confidence in its overall service quality increases, leading to higher satisfaction. High e-service quality can lead to better service delivery in traditional contexts. For instance, if students can efficiently schedule appointments or access online resources, in-person services become more streamlined and effective, enhancing overall service quality and satisfaction. High e-service quality platforms facilitate better feedback mechanisms, allowing institutions to improve their traditional services. Continuous improvements in response to feedback can enhance overall service quality and, consequently, student satisfaction.

## 3. METHOD

### 3.1 Survey and Sample Characteristics

For this research, 703 participants were gathered from twenty-four (24) educational institutions and universities in the Philippines through stratified random sampling. The data were collected through an online survey using Google Forms.

Following is a breakdown of the genders represented among the respondents: In terms of gender, there were 63.30 percent females and 36.70 percent males. Most respondents, which accounted for 96.84 percent of the total number of participants, were between the ages of 20 and 24 at the time of the survey (60.74 percent), and they were single (96.84 percent). On a nationwide scale, 67.40% of respondents are enrolled in public universities or colleges, and the vast majority (83.10%) have earned bachelor's degrees (refer to Table 1).


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Table 1. Demographic Data of Sample Population

| Demographics | | N | % |
|---|---|---|---|
| Gender | Female | 445 | 63.30 |
| | Male | 258 | 36.70 |
| Age | 20-24 | 427 | 60.74 |
| Marital Status | Single | 681 | 96.87 |
| Degree | Bachelor's Degree | 584 | 83.10 |
| University | Public | 474 | 67.40 |

N=703

### 3.2 Measurements

The e-Service Quality Scale, which was devised by Kaur *et al*. (2020), was employed in this investigation. The scale comprises six dimensions: assurance, reliability, security and privacy, efficiency, system availability, and information quality and usability. The 26-item scale is assessed using a 7-point Likert scale that ranges from 1 (strongly disagree) to 7 (strongly concur). The Overall Service Quality scale, adapted from He and Li (2010), was employed to evaluate service quality. The construct is assessed using a three-point Likert-type response, with 1 representing never, 2 representing sometimes, and 3 representing always. The construct consists of three items. In the meantime, the Student University Satisfaction Scale, devised and validated by Hussain and Bhamani (2012), was employed to assess student satisfaction. The scale is evaluated on a 7-point Likert scale, with 1 representing strongly disagree and 7 representing strongly agree. It consists of 32 items. The instrument comprises six indicators and facets: learning facilities, curriculum, teaching and learning, university climate, administrative facilities, and policies and procedures.

### 3.3 Data Analysis and Hypothesis Testing

The interrelationships of the variables under investigation were analyzed using Structural Equation Modeling (SEM), a path modeling approach, and WarpPLS 7.0 software. Sarstedt *et al*. (2014) define Structural Equation Modeling (SEM) as *"a method that allows researchers to model, estimate, and test complex theories with empirical data simultaneously"* (p.106). This method evaluates multiple relationships simultaneously, possibly moderating or mediating some. Structural Equation Modeling (SEM) determines whether the observed data is a suitable fit (see Paulino *et al*., 2021).

## 4. RESULTS

### 4.1 The Measurement Model

The measurement model presents the results of the construct reliability and validity (convergent and discriminant). The reliability, convergent validity, and discriminant validity of the measures associated with specific constructs are the foundations for assessing the measurement model for reflective indicators in PLS-SEM (Hulland, 1999). The theory of structural equation modeling serves as the foundation for this assessment. Construct reliability assessment can be employed to assess the degree to which a reflective item or group of reflective items is consistent in its intended measurement. Composite reliability and Cronbach's alpha are the two methods that are typically employed to assess construct dependability, as per Kock (2015). The construct reliability is considered satisfactory if the composite reliability and Cronbach's alpha are either greater than or equal to .70 (Fornell & Larcker, 1981; Nunnally, 1978; Nunnally &


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Bernstein, 1994; Kock, 2015) or greater than the more relaxed requirement of .60 (Nunnally & Bernstein, 1994; Kock, 2015). The variables that comprise the models in this investigation are reliable (please consult Table 2 for additional details). These variables consist of the Service quality (SerQual), E-Service (E-Serv), and Student Satisfaction (Sat). A conservative criterion is that the composite reliability and Cronbach's alpha coefficients must be at least 0.70, per Kock (2020). This is considered the minimum permissible value.

Table 2. Reliability Coefficients of the Latent Variables

| Variables | Cronbach's Alpha | Composite Reliability |
|---|---|---|
| Service Quality | .898 | .898 |
| E-Service Quality | .981 | .981 |
| Sat | .986 | .987 |

Table 3. Convergent Validity Statistics: Indicator Loadings, Cross-loadings, and AVEs

| Variables | Indicator Loadings | Range of Absolute Cross-Loadings | P-value of Indicator Loadings | AVEs |
|---|---|---|---|---|
| *Service Quality (SerQual) – Reflective Latent Variable* | | | | .897 |
| SerQual1 | 0.894 | .030-.220 | .000 | |
| SerQual3 | 0.912 | .027-.141 | .000 | |
| *E-Service Quality (E-Serv) – Formative Latent Variable* | | | | .799 |
| Information Quality and Usability | 0.935 | .016-.070 | .135 | |
| Reliability | 0.955 | .029-.124 | .206 | |
| Security and Privacy | 0.938 | .006-.126 | .158 | |
| Efficiency | 0.953 | .005-.120 | .222 | |
| System Availability | 0.935 | .012-.198 | .116 | |
| Assurance | 0.966 | .029-.054 | .197 | |
| *Student Satisfaction (Sat) - Formative Latent variable* | | | | .924 |
| Learning Facility | 0.977 | .002-.262 | .160 | |
| Curriculum | 0.988 | .016-.063 | .273 | |
| Teaching Learning | 0.965 | .013-.071 | .170 | |
| University Climate | 0.971 | .015-.119 | .233 | |
| Administrative Facilities | 0.923 | .001-.391 | .080 | |
| Policies and Procedures | 0.942 | .010-.088 | .106 | |

Table 4. Discriminant Validity Statistics

| | SerQual | E-Serv | Sat |
|---|---|---|---|
| SerQual | 0.903 | | |
| E-Serv | 0.759 | 0.947 | |
| Sat | 0.759 | 0.872 | 0.961 |


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The study variables were determined to have satisfactory convergent validity by applying the loadings-approach criteria outlined in Amora (2021). These criteria include the following: a) indicator loadings of.50 or higher (Kock, 2020; Kock, 2014); b) P-values associated with indicator loadings of less than .05 (Kock, 2020; Kock, 2014); and c) low cross-loadings in relation to indicator loadings. The analysis excluded indicators that did not meet these criteria. Only SerQual2 (the Service Quality indicator) was excluded from this paper. Since the p-values, indicator loadings, and cross-loadings are within the permissible ranges, all variables have satisfactory convergent validity except for the noted indicator. Convergent validity can also be evaluated using the average variance extracted (AVE). If the AVE is .50 or greater, there is evidence of convergent validity (Fornell & Larcker, 1981; Kock & Lynn, 2012; Kock, 2020). E-service is a formative latent variable; therefore, indicator weights are appropriate. The convergent validity of E-service is adequate, as all indicator loadings have p values of.000. The indicator loadings and cross-loadings are still provided for reference. The p-values of all indicator loadings are .000. Convergent validity can also be evaluated using the average variance extracted (AVE). If the AVE is.50 or greater, there is evidence of convergent validity (Fornell & Larcker, 1981; Kock & Lynn, 2012; Kock, 2020) (refer to Table 3).

Table 4 presents the discriminant validity statistics. The values on the diagonal reflect the square roots of the variable's AVEs, whereas the values on the off-diagonal represent correlations between variables. Fornell and Larker (1981) define convergent validity as the square roots of the AVEs being greater than the correlations.

## 4.2 Structural Model

Strong evidence that the estimates of the structural equation model could be trusted and accepted was demonstrated by the model fit and quality indices of the PLS-SEM model generated by the program known as WarpPLS 7.0. These indices were able to demonstrate that the estimates were accurate and reliable. It has been determined that the PLS-SEM model fit and quality indices fall within the acceptable range, taking into account the criteria described in Kock (2015). Evidence provides that the model's quality indices and goodness of fit coefficients are remarkable in their respective categories. The average path coefficient (APC=.366), the average R-squared (ARS=.870), and the average adjusted R-squared (AARS=.869) are all statistically significant ($p<.05$; Kock, 2020). In other words, the average path coefficient is significant. Furthermore, both the average block VIF and the average total collinearity VIF are below the acceptable range of 5 (Kock, 2020). This is a problem because the permitted range is 5. Additionally, the Tenenhaus Goodness of Fit (GoF=.865) is a substantial number, and both the Standardized Root Mean Squared Residual (SRMR=.025) and the Standardized Mean Absolute Residual (SMAR=.020) are below the threshold of .10, which is good (Kock, 2020). Both values are below the threshold.

The results of the study show that the quality of e-service has a significant influence on the quality-of-service delivery (e-service quality, ß=.919, SE=.035, $p<.01$). Furthermore, the findings suggest that the quality of the electronic service has a significant influence on the degree of contentment experienced by students (ß=.773, SE=.034, $p<.01$). The amount of evidence that suggests that the influence of e-service quality on service quality (f2=.598) and student satisfaction (f2=.892) is substantial. It has also been exhibited also that there is no significant association between the quality of service provided and the level of satisfaction experienced by students (ß=.068, SE=.037, $p>.05$). As to the mediating effect of service quality on the relationship between e-service quality and student satisfaction, the results show that the indirect effects are statistically


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significant (p<0.05), indicating that the effect of the e-service quality on student satisfaction is mediated by service quality (ß=.052, SE=.027, p<.05). The amount of evidence that suggests that the influence of e-service quality on student satisfaction through service quality (f2=.51) is large extent (refer to Table 5). For reference purposes, $f^2$ is based on Cohen's (1988) effect size: 0.02=small, 0.15=medium, 0.35=large.

Table 5. Relationships among service quality, e-service, and satisfaction

| Hypotheses | Path Coefficient (β) | Standard Error | p-value | Effect size ($f^2$) | Remarks |
|---|---|---|---|---|---|
| H1: E-Serv→SerQual | .919 | .035 | .000 | .598 | Supported. |
| H2: E-Serv→Sat | .773 | .034 | .000 | .892 | Supported. |
| H3: SerQual→Sat | .068 | .037 | .036 | .052 | Supported |
| H4: E-Serv→SerQual→Sat | .052 | .027 | .025 | .051 | Supported |

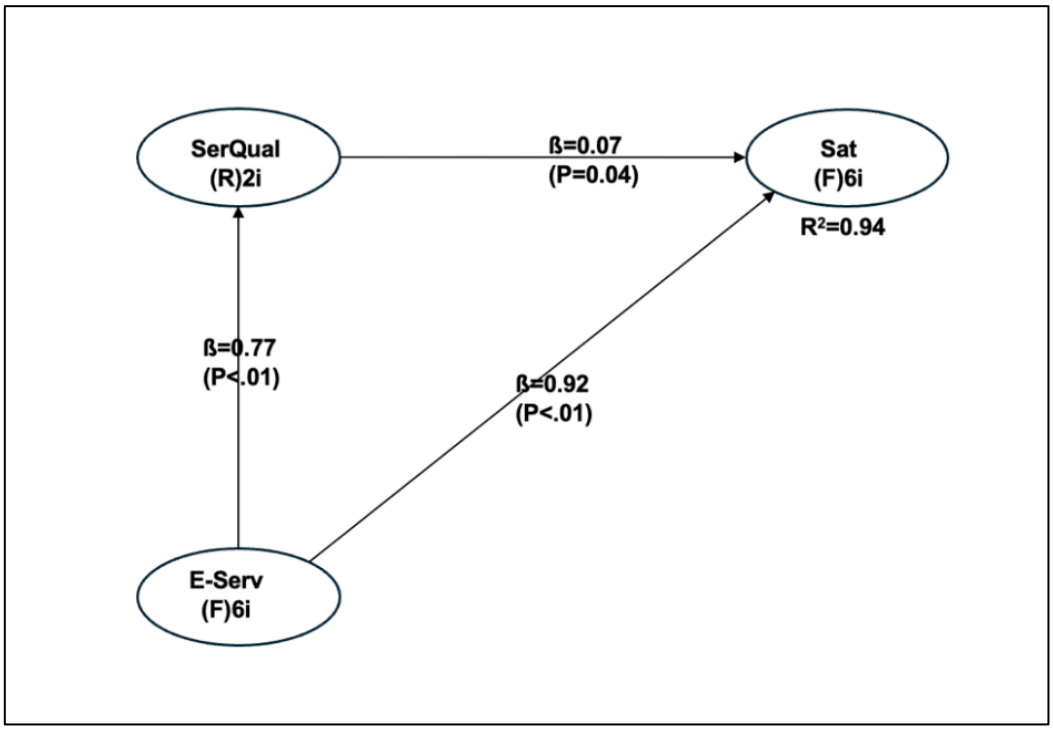


Figure 1. The Structural Model

## 5. DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

The study's findings show that e-service quality affects student satisfaction. The positive coefficient between e-service quality and student satisfaction denotes that student respondents with high perceptions about e-service quality tend to experience greater


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satisfaction. The study's findings confirm recent results of Demir *et al*. (2020) and Kaur *et al*. (2020) that e-service quality influenced student satisfaction. This result emphasizes that e-service quality is critical to student satisfaction during the pandemic. Electronic services could satisfy the needs of the student market effectively and efficiently. The finding also validates the concept that e-service quality is not like service quality perception since e-service quality is the range to which a website facilitates different school-related transactions. It is the overall evaluation and judgment of the students on the excellence and quality of e-service offerings by the HEIs. Previous studies agreed that e-satisfaction and satisfaction are not different in general. E-satisfaction occurs when a product or service exceeds consumer expectations. It is represented by customer satisfaction that comes from previous purchases of certain electronic services. In a business context, e-satisfaction is customer satisfaction with online shopping.

Electronic satisfaction is customer satisfaction that comes from previous real purchasing experiences. Customer satisfaction is measured by the level of customer satisfaction with products or services provided by online retailers. The performance of websites and products provided by websites are indicators of online customer satisfaction. E-service quality will drive e-satisfaction. E-service quality is a significant antecedent of evaluating the value of online shoppers, which affects e-satisfaction. E-service quality can be used to predict online consumer satisfaction. E-service quality is closely related to online customer satisfaction, and many studies have shown a strong positive relationship between e-service quality and e-satisfaction. In the context of online learning, e-service quality determines the e-satisfaction of students.

The study shows that service quality does not influence student satisfaction. These results may be largely attributed to the new set-up of service delivery in higher education. In contrast with the previous studies involving overall service quality and student satisfaction, the results of this study offer a new paradigm for service quality and student satisfaction. Previous studies emphasized the strong links between service quality and student satisfaction and overall service quality and student satisfaction (e.g., Osman & Saputra, 2019; Subrahmanyam, 2017). In the current study, though e-service was an essential antecedent of service quality and predictor of student satisfaction, service quality does not predict student satisfaction. The results suggest that not all previously identified antecedents of service quality are significant in the students' perception of quality service in the context of a pandemic.

The results also suggest that the student respondents' perceptions of e-service quality are linked to their perceptions of service quality provided by higher education institutions during the pandemic. For instance, the positive coefficient between e-service quality and service quality suggests that respondents with high perceptions of e-service quality expect to get the highest services. A positive path coefficient suggests a direct or linear relationship between variables, while a negative path coefficient suggests an inverse relationship among variables. This result suggests that system availability, information quality and usability, reliability, security and privacy, assurance, and efficiency are crucial in students' perception of HEIs service quality. The results suggest that students expect excellent online services to feel satisfied during the pandemic. The results corroborate with that of Yudiawan *et al*. (2021) as they highlight the role of digital system infrastructure and quality in online learning success during the COVID-19 pandemic. The ease of internet access is needed to ensure students' learning. This may affect their perceptions and evaluations of the quality of services provided by the higher institutions.


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Service quality is critical in the relationship between e-service quality and student satisfaction. Educational institutions can significantly improve student satisfaction by integrating and enhancing both e-service and traditional service quality. This holistic approach ensures that the benefits of high-quality e-services are fully realized in the context of traditional service delivery, creating a comprehensive and satisfying experience for students. This study offers some practical implications. For instance, institutions should ensure that e-services complement and enhance traditional service quality. An integrated approach to service delivery can create a seamless experience for students. HEIs should also focus on consistency or maintaining high standards in both e-services and traditional services. It is crucial since consistency across all service touchpoints ensures a positive overall student experience. Investing in training is also highly suggested. Training staff to efficiently use and support e-services can improve service quality. Well-trained staff can bridge the gap between e-services and traditional service delivery. Finally, HEIs must have efficient feedback mechanisms within e-services that can provide valuable insights into areas of improvement for traditional services, thereby enhancing overall service quality and student satisfaction.

The conclusions of this study, taken as a whole, are symptomatic of the issues that most, if not all, higher education institutions worldwide are confronted with. Modifying the way educational institutions deliver the services that they offer impacts the way in which the student market perceives the quality of the service, which in turn impacts the level of satisfaction that the students really obtain.

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