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Quality Improvement Strategies for State University-Public Sector Agency: Lessons from Student Satisfaction Study

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Abstract

Purpose – This study aimed to analyze the effect of service quality on student satisfaction as well as formulate quality improvement strategies for State University-Public Service Agency (SU-PSA) in Indonesia.

Methodology – The respondents included 290 students from 17 SU-PSA, and the Structural Equation Modeling and Smart PLS were used to analyze data and calculate Community Satisfaction Index (CSI).

Results – The results showed that three dimensions (tangibles, responsiveness, and empathy) had a significant effect on student satisfaction at SU-PSA, and two dimensions (reliability and assurance) had no significant impact. Furthermore, tangibles specifically exerted the most significant effect. These results contributed to SU-PSA management in quality improvement strategies and formulating policies for enhancing service completion time for student and addressing complaints, suggestions, and feedback. Improvement quality of educational staff regarding responsiveness and efficiency in serving student could be achieved through training, development, and public awareness efforts. Moreover, CSI provided by SU-PSA in Indonesia fell within the "Good" category.

Originality – This study provided valuable insights for enhancing service quality of SU-PSA using the SERVQUAL method, while also accommodating the nine elements of CSI in the context of Higher Education.

1. Introduction

State University is one of agency established to operate as State University-Public Service Agency (SU-PSA) in the educational field with flexible financial management. This flexibility comprises income and spending, cash management, accounts receivable and debt management, investment, procurement of goods and service, accounting, remuneration, surplus/deficit, as well as employment status (Juliani, 2018; Misneli, 2018). Public Service Agency in the educational sector is granted the flexibility required to optimize service to the community (Misneli, 2018). In the context of higher education, quality of educational service can be seen from the fulfillment of

consumer expectations, specifically student. Therefore, SU-PSA is expected to develop consistent strategies for quality improvement to remain competitive in the ever-evolving business environment (Widaryanti et al., 2016). Community satisfaction serves as a benchmark for evaluating the success or failure of program implementation in public service institution. Service is considered satisfactory when they effectively address the needs and expectations of users (Ernitati, 2016).

During the Covid-19 pandemic, SU-PSA was required to adapt to providing service to the community. Various methods were also adopted by state university to maintain service quality, including online or virtual learning, student admissions, graduation ceremonies, replacement of the Real Work Lecture projects in the regions with PKL Projects, and quota subsidies for student (Arfiyansyah, 2021). The transition to virtual learning was a significant transformation in the educational process (Chamorro-Atalaya et al., 2022; Ranjan et al., 2021). Moreover, the volatile economic conditions necessitated financial relief for student affected by the pandemic and the reallocation of study funds toward health and economic recovery (Arfiyansyah, 2021). The pandemic impacted the revenue of SU-PSA, as operational costs and learning expenses affected revenue targets and realization. According to Weerasinghe & Fernando, 2018), in a competitive learning environment, the level of student satisfaction has become a central focus due to the profound influence on university success.

The efforts of SU-PSA to adapt to the pandemic have had an impact on student satisfaction, with quality of service reflecting in the average value of Community Satisfaction Index. In 2018, prior to the Covid-19 pandemic, the average CSI score for PSA was 3.12, falling within the "Good" category on a scale of 1-5. According to the Public Service Agency Development Director, there were fluctuations in CSI over the last five years, ranging from 3.29 to 4.19 (Heriyanto, 2022). However, these results were not in line with the initial field observations conducted through interviews with 15 students from 3 SU-PSA regarding satisfaction with quality of service. The interview results showed that the level of student satisfaction remained in the low category. Therefore, the current study aimed to measure the effect of service quality on student satisfaction using the SERVQUAL Method as well as identify quality improvement strategies through CSI indicator. The measurement of service quality and student satisfaction in SU-PSA adhered to CSI as defined by Regulation of the Ministry of State Apparatus Utilization and Bureaucratic Reform Number 14 of 2017, replacing the Decree of the Ministry of State Apparatus Utilization and Bureaucratic Reform Number 25 of 2004. This method was used to evaluate the quality of public service based on public perception (Nesimnasi et al., 2019), and comprised nine indicators; 1) Condition, 2) Systems, Mechanisms, and Procedures, 3) Completion Time, 4) Fees/Tariffs, 5) Product Specification type of service, 6) Executor competence, 7) Executor behavior, 8) Handling Complaints, Suggestions, and Feedback, 9) Facilities and infrastructure. However, the existing CSI for this Public Sector Agency was quite general, necessitating adaptation in university context. Up to this point, specific strategies for improving service quality and student satisfaction at state university have not been formulated, rendering CSI inadequate as a reference for sustainable quality enhancement.

Several public organizations have investigated service user satisfaction using CSI. In the health sector, for instance, Fahamsyah, (2018) and Nesimnasi et al., (2019) used CSI ndicators to determine quality of service provided by Community Health Centers. Wulandari et al., (2023) used CSI assessment indicators, as consideration for the National Research and Innovation Agency (NRIA), to devise strategies for improving library service in the future. These indicators have also been applied to measure public perception and satisfaction of public service of the Sawan sub-district office, Buleleng Regency (Damayanti et al., 2019), and to determine the level of service

satisfaction at the Development Planning, Research and Tasikmalaya City Regional Development (Alimudin, 2021). In the context of higher education, Kurniawan & Sugiri, (2021) adopted the indicators to assess service performance of the Faculty of Social Sciences at SU-PSA of Yogyakarta State University (UNY). However, these studies were not aimed at confirming the results of other service user satisfaction measurement methods for the same objects, and there were no prior investigations utilizing CSI indicators to assess service quality in higher education. The current study was innovative by adopting the SERVQUAL Method, which incorporated nine indicators, identifying strategies for enhancing service quality.

The primary objective was to analyze the effect of SU-PSA service quality across the five dimensions of the SERVQUAL Method (Tangibles, Responsibilities, Responsiveness, Assurance, and Empathy) on student satisfaction. The study also aimed to determine quality improvement strategies using CSI indicator in the context of higher education.

1.1 Service Quality in Higher Education

According to Parasuraman, Zeithmal, and Berry (1994) as cited in Naveed Jabbar et al., (2020), service quality is fundamental to customer satisfaction, and is "a form of attitude related but not equivalent to satisfaction, including the comparison of expectations with perceived performance" (Parasuraman et al., 1986). The primary dimensions of the SERVQUAL model consist of tangibles, reliability, responsiveness, assurance, and empathy (Chui et al., 2016; Parasuraman et al., 1986). One of the most widely recognized models for assessing service quality in Higher Education is SERVQUAL (Railya B Galeeva, 2016). According to Parasuraman, A; Zeithami, Valarie A; Berry, (1985), there are several gaps in the concept of service quality. This includes the disparity between customer and management expectations, as well as the variation between service delivered to customers and the promises made by the firm regarding service quality. To assess service quality of SU-PSA, SERVQUAL Method was adopted with five dimensions, namely tangibles, reliability, responsiveness, assurance, and empathy. These dimensions focused on service quality of lecturers, educational staff, study programs, and infrastructure at SU-PSA.

Tangibles are visible elements in service that accurately reflect quality of service to be provided. This includes physical facilities, equipment, employees, and means of communication (Anisah et al., 2020; Chui et al., 2016; Hanaysha et al., 2011; Hazilah Abd Manaf et al., 2013; Mariana et al., 2020; Osman & Saputra, 2019). Reliability refers to the ability to promptly, accurately and satisfactorily fulfill promises made in the form of service performance (Anisah et al., 2020; Hanaysha et al., 2011; .Mariana et al., 2020; Osman & Saputra, 2019; Yousapronpaiboon, 2014). Responsiveness relates to the willingness of lecturers and educational staff to serve student effectively and satisfactorily. In other words, it reflects the willingness to respond to problem-solving customer service (Anisah et al., 2020; Chui et al., 2016; Dursun et al., 2013; Hasan et al., 2009; Mariana et al., 2020). Assurance is the ability to instill trust and confidence in customers through service provided (Anisah et al., 2020; Azizah et al., 2020; Chui et al., 2016; Hasan et al., 2009). Empathy refers to the ability to provide a more personal and intimate level of attention to consumers (Anisah et al., 2020; Hasan et al., 2009; Mariana et al., 2020; Yousapronpaiboon, 2014).

1.2 Student Satisfaction

Student satisfaction is the outcome of a comparison between the actual service received or experienced at a tertiary institution and the expected level of service (Hanaysha et al., 2011). It

plays a crucial role in determining the effectiveness and authenticity of the system used in higher education. Arrivabene et al., (2019), stated that Elliott and Healy (2001) were among the first to propose the adaptation of the concept of satisfaction, focusing on student as customers. Student satisfaction is a short-term attitude resulting from evaluation of experiences with the educational service. Student often feel satisfied with university when service provided meet or exceed expectations. Satisfaction is deemed high when the reality correlates or exceeds the level of expectation, and low when it falls short of expectations. The following hypotheses were formulated based on the background and previous studies:

H_1: Service Quality of SU-PSA from Tangibles (X1) has a significant effect on Student Satisfaction (Y)
H_2: Service Quality of SU-PSA from Reliability (X2) has a significant effect on Student Satisfaction (Y)
H_3: Service Quality of SU-PSA from Responsiveness (X3) has a significant effect on Student Satisfaction (Y)
H_4: Service Quality of SU-PSA from Assurance (X4) has a significant effect on Student Satisfaction (Y)
H_5: Service Quality of SU-PSA from Empathy (X5) has a significant effect on Student Satisfaction (Y)

Figure 1 presents a study model based on previous literature review and development of hypotheses.

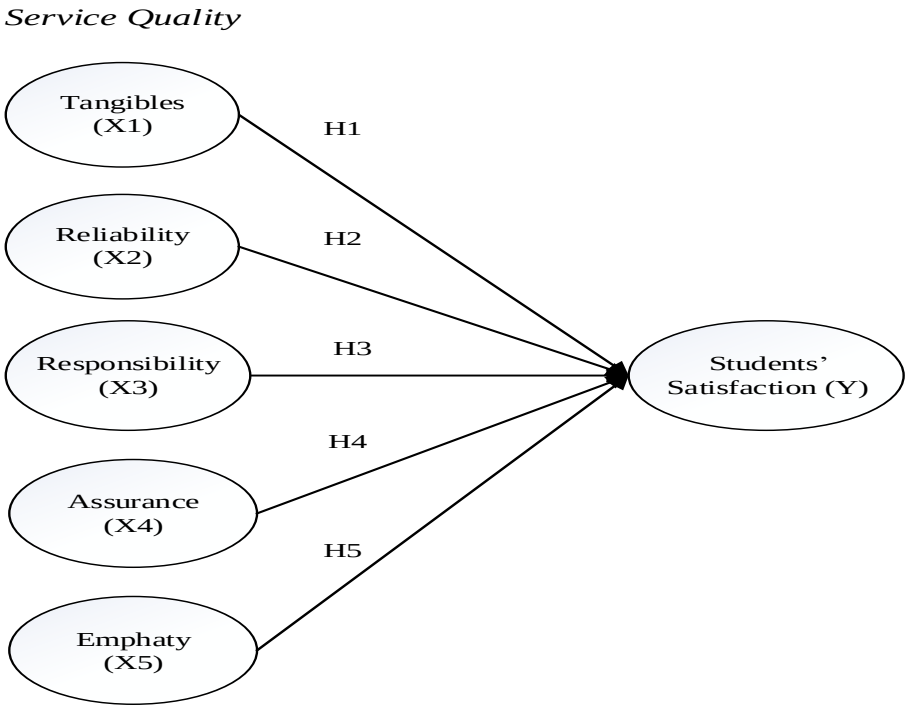

Figure 1. Study Model

2. Research Methods

This study adopted a descriptive quantitative method with survey data collection. The SERVQUAL model was used to evaluate customer expectations and perceptions of service quality, with variables measured on 5-point Likert scales. The data collection period spanned from May to November 2022. The sample size was determined using Rao soft calculator with an error tolerance of 5% from the total student population (1.255.679), resulting in the selection of 385 SU-PSA students. Out of the 385 questionnaires distributed, only 327 were returned, and only 290 were feasible for further analysis. Furthermore, data were analyzed using Structural Equation Modelling (SEM), primarily chosen due to the existence of five constructs with formative indicators, specifically tangibles, reliability, responsiveness, assurance, and empathy. SEM was used to test hypotheses and evaluate the relationship between exogenous and endogenous latent variables. Service quality construct was measured using indicators developed by Parasuraman, A; Zeithami, Valarie A; Berry, 1985; Parasuraman et al., 1986). These indicators were extensively used by Absah et al., (2021); Ahmed & Mehedi Masud, (2014); Chui et al., (2016); Osman & Saputra, (2019). Student satisfaction index and questionnaire indicators were designed in accordance with the constructs outlined in CSI by Regulation of the Ministry of State Apparatus Utilization and Bureaucratic Reform Number 14 of 2017.

Table 1. Indicators of CSI in The Context of Higher Education

Element of CSI	Indicators
Requirements	Conformity between service requirements and requirements conveyed by educational staff
Systems, Mechanisms, and Procedures	A consistent system of service mechanisms and procedures for student
Completion Time	Conformity between the time period required to complete service and the specified service hours
Fees/Tariffs	Conformity of tuition fees (UKT) is considered to be appropriate between service and service fee paid.
Product Specification type of service	Conformity of service results received by student Effective implementation of learning plans Up-to-date material provided by lecturers
Executor competence	Educational staff have the scientific competence to change mindset and talent
Executor behavior	Educational staff have competence in communicating
Handling Complaints, Suggestions and Feedback	Handling Complaints, Suggestions and Feedback
Facilities and infrastructure	Facilities and infrastructure

Source: Regulation of the Ministry of State Apparatus Utilization and Bureaucratic Reform Number 14 of 2017

3. Results and Discussions

3.1 Characteristics of Respondents

Regarding the characteristics of the respondents by gender, 220 (75.9%) were women, while 70 (24.1%) were men. In terms of age, there were 184 respondents (63.4%) below 20 years, 85 (29.3%) between 21-30, 12 (4.1%) between 31-40, and 9 (3.1%) between 41-50. The analysis also showed that 290, 87 (30%) were in the 3rd semester and 250 (86.2%) were in the Bachelor/Diploma IV level.

Table 2. Demographic Profile of the Respondents

	Demographic	Number	%
Gender	Male	70	24.1
	Female	220	75.9
Age	< 20 year	184	63.4
	21-30 year	85	29.3
	31-40 year	12	4.1
	41-50 year	9	3.1
Year of Education	First Year	87	30
	Second Year	74	26
	Third Year	62	21
	Fourth Year	53	18
	> Fourth Year	14	5
Level of Education	Diploma III	16	5.5
	Doctor/Applied Doctorate	6	2.1
	Master/Applied Master	14	4.8
	Profession	4	1.4
	Bachelor/Diploma IV	250	86.2

Source: processed data

3.2 Measurement Model Testing (Construct Validity)

The discriminant and convergence validity can be considered satisfactory when value of AVE (Average Variance Extracted) exceeds 0.5 (Hair et al., 2011). The AVE values for the formative indicators of service quality constructs (tangibles, reliability, responsiveness, empathy, and assurance) were typically empty or non-existent. Both the Cronbach alpha and composite reliability values for the reflective construct (student satisfaction) exceeded 0.7, showing reliability.

The Average Variance Extracted (AVE) value obtained is presented in Table 3 (see appendix). The six constructs examined in this research can be said to have strong convergent validity because the AVE value calculation results obtained in Table 3 are more than 0.5 (Hair J et al., 2010).Table 3 shows the calculation results for the Composite Reliability (CR) value, the six variables have a value of more than 0.6. Based on the findings of (Chin et al., 1996), the constructs used in this research have a high level of reliability.

Table 3. Squared Root of AVE and Correlation between Constructs

Dimensions	**Tangibles**	**Reliability**	**Responsiveness**	**Assurance**	**Empathy**	**Satisfaction**
Tangibles	**0,721**	0,621	0,691	0,685	0,687	0,624
Reliability	0,621	**0,841**	0,649	0,651	0,635	0,686
Responsiveness	0,691	0,649	**0,777**	0,657	0,642	0,686
Assurance	0,685	0,651	0,657	**0,819**	0,638	0,615
Empathy	0,687	0,635	0,642	0,638	**0,748**	0,628
Satisfaction	0,624	0,686	0,686	0,615	0,628	**0,740**

Source: processed data

Table 4 shows the square root of AVE and Correlations between constructs, indicating the acceptance of discriminant validity. In this research, the discriminant validity test was carried out by contrasting the squared root of AVE for each construct with the correlation between the construct in question and other constructs included in the model (see Table 4). According to Chin

et al., (1996); dan Hair et al., (2014), the model is considered to have sufficient discriminant validity if the root of the AVE for each construct is greater than the correlation between the construct in question and other constructs in the model. Table 5 (see appendix) shows the result of discriminant analysis using factor analysis to establish the validity of each construct and dimension. This analysis was conducted to mitigate the presence of common method variance bias among constructs.

3.3 Structural Model Testing

Structural model testing was conducted using Stuctural Equation Modeling (SEM) and Smart PLS software. This analysis aimed to assess the validity of the study model based on formulated hypotheses. The results are presented as follows.

Table 4. Hypothesized Paths in Structural Model Testing

	Hypothesized Paths	Coefficient	t Value	P Values	Remarks
H_1	Tangibles → student satisfaction	0,456	6,340	0,000	Supported
H_2	Reliability → student satisfaction	-0,076	0,806	0,420	Not Supported
H_3	Responsiveness → student satisfaction	0,259	2,614	0,009	Supported
H_4	Assurance → student satisfaction	0,045	0,541	0,588	Not Supported
H_5	Empathy → student satisfaction	0,302	3,939	0,000	Supported

Source: processed data

Based on Table 6, it shows that in general the constructs (variables) measured in this research are able to explain and predict the phenomena studied. Service quality from the tangibles and Responsiveness dimension are able to explain and predict student satisfaction. The infrastructure and facilities provided by universities are the key to student satisfaction, as well as in the public sector in health services, as in the findings of (Suriyanti & Azlan, 2023). However, there are two dimensions of reliability and assurance that cannot explain and predict student satisfaction.

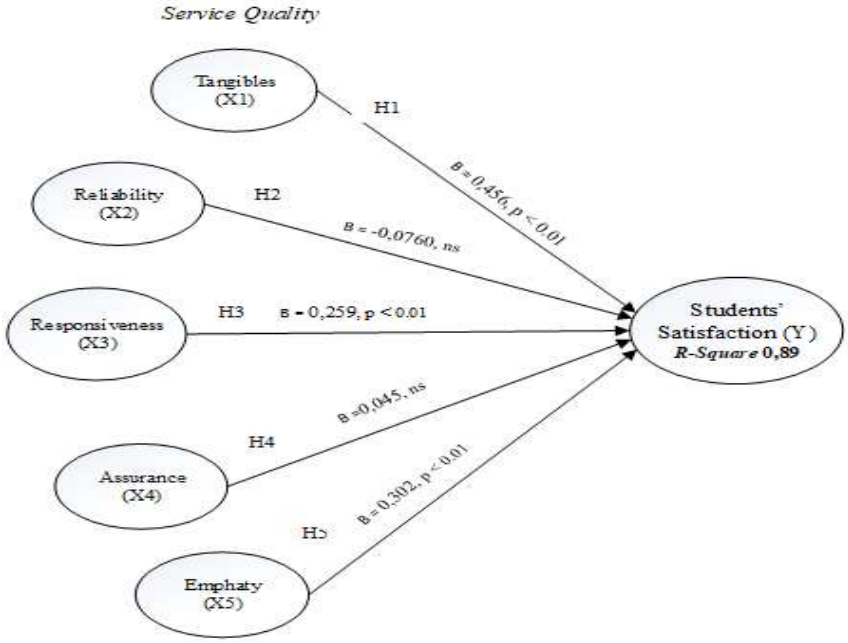

Figure 2. Structural Equation Model with The Parameter Estimate

Figure 2 and Table 6 show that service quality dimensionshad a significant effect on student satisfaction, evidenced by t-values > 1.96, and p < 0.01. The analysis also showed that service quality explained 89% of student satisfaction.

Table 6 shows that Tangibles had a significant effect on student satisfaction as evidenced by a t-count value of 6.340 (t count>t table). This showed that effective Tangibles service at SU-PSA increased student satisfaction and vice versa, as well as the acceptance of H_1. Furthermore, Reliability had no significant effect on student satisfaction as evidenced by a t-count of 0.806 (t count<t table), and P value > 0.01 (P value = 0.420), showing the acceptance of the second hypothesis. Responsiveness had a significant effect on Student Satisfaction as evidenced by a t-count of 2.614 (t count>t table), showing the acceptance of H_3. Assurance had no significant effect on student satisfaction as evidenced by a t-count of 0.541 (t count<t table), and P value > 0.01 (P value = 0.588), showing the acceptance of H_4. Service Quality of SU-PSA from Empathy had a significant effect on student satisfaction as evidenced by a t-count of 3.939 (t count>t table), showing the acceptance of H5.

This study showed that the assessment of consumer satisfaction offered only a partial understanding of organizational performance regarding quality of service provided. Meanwhile, enhancing quality of the delivery process at each stage contributed to service quality improvement. CSI was calculated based on perceived values, which were subsequently converted to determine service quality and value categories. Table 7 presents the criteria for assessing community satisfaction in accordance with CSI.

Table 5. CSI Criteria

Perception Value	Interval Value	Conversion Interval Value	Quality	Category
1	1,00-2,5996	25,00-64,99	D	Not good
2	2,60-3,064	65,00-76,60	C	Pretty good
3	3,0644-3,532	76,61-88,30	B	Good
4	3,5324-4,00	88,31-100,00	A	Very good

Source: Regulation of the Ministry of State Apparatus Utilization and Bureaucratic Reform Number 14 of 2017

Each service element was assessed to determine CSI value of SU-PSA in Indonesia.

Table 6. CSI Value

Indicators	Service Interval Value	Conversion Interval Value	Quality	Index	Category
Requirements	3,448	86,207	B	9,569	Good
Systems, Mechanisms, and Procedures	3,472	86,810	B	9,636	Good
Completion Time	3,017	75,431	**C**	**8,373**	**Pretty good**
Fees/Tariffs	3,324	83,103	B	9,224	Good
Product Specification Type of Service	3,436	85,891	B	9,534	Good
Executor Competence	3,359	83,966	B	9,320	Good
Executor Behavior	3,403	85,086	B	9,445	Good
Handling Complaints, Suggestions and Feedback	3,010	75,259	**C**	**8,354**	**Pretty good**
Facilities and Infrastructure	3,645	86,207	B	10,114	Good
	3,374			**83,569**	

Source: processed data

The results obtained from CSI indicators showed that seven elements, including Requirements, System mechanisms and procedures, Fees/tariff, Product elements, specifications, as well as types of service, like Executor competence, Executor behavior, Facilities and infrastructure, fell into the "Good" value category. Meanwhile, completion time, handling complaints, suggestions, and feedback fell into the "Pretty good" category. Public satisfaction index obtained from all service elements provided by SU-PSA in Indonesia for 2022 was 83.569, showing that CSI fell into the "Good" category.

3.4 Discussion

The discussion in this section presents a research model that is able to provide a comprehensive picture of how to improve service quality using the SERVQUAL method through five dimensions, while accommodating the nine elements of CSI in the context of higher education.

Service quality from five dimensions aimed at assessing student satisfaction shows that physical evidence, responsiveness and empathy have a significant effect on student satisfaction at SU-PSA, while reliability and guarantee do not have a significant effect.

Hypothesis 1 (H_1) state that service quality of SU-PSA form Tangibles has a significant effect on student satisfaction. Tangibles at SU-PSA relate to equipment, physical facilities and educational materials, like the availability of parking lots, canteens, toilets, cleanliness and tidiness of places of worship, classes, discussion room, and equipment, as well as the presence of an efficient Smart Campus system. The analysis of this hypothesis showed that student was highly satisfied with strategies and easily accessible location of SU-PSA university. They also expressed great satisfaction with the available facilities for parking. The tangibles dimension had a significant effect on student satisfaction, and enhanced the positive perception of service providers or consumers when assessing service quality. Good service quality provided by SU-PSA in terms of tangibles had a significant influence on satisfaction, as supported by Ahmed & Mehedi Masud, (2014); Chui et al., (2016); Hanaysha et al., (2011); Hasan et al., (2009); Mariana et al., (2020). Suriyanti & Azlan, (2023) stated that facilities and infrastructure significantly impacted the performance of health service personnel. This was evidenced by CSI value for the Facilities and Infrastructure indicator with service value of 3.645 in the "Very Good" category.

Hypothesis 2 (H_2) state that service quality of SU-PSA from Reliability has no significant effect on student satisfaction. The attributes of service quality in this dimension are related to the competence and expertise of lecturers, transparency in assessment procedures, the curriculum provided by the study program, and the relevance of courses to workplace competency requirements. The analysis of the hypothesis showed that student was not satisfied with quality of the ability of educational staff to answer student questions and provide accurate information about tuition fees. The importance of the Reliability dimension implied that any deviations from service provided had no significant effect on student satisfaction. These results were not in line with Chui et al., (2016; Hanaysha et al., (2011); Hazilah Abd Manaf et al., (2013); Mulyono et al., (2020); Osman & Saputra, (2019); Weerasinghe & Fernando, (2018). CSI survey results reinforced the interval ratings for the Completion Time and Handling Complaints, Suggestions, and Feedback indicators, which fell into the **retty good** category.

Hypothesis 3 (H_3) state service quality of SU-PSA from Responsiveness has a significant effect on student satisfaction. The analysis showed that improvement of student satisfaction included providing periodic counseling service for student to ensure timely progress in studies and offering a variety of courses. Another factor was the responsiveness and swiftness of educational staff in providing service, as well as the ease of paying tuition fees. These results were in line with

Ahmed & Mehedi Masud, (2014); Hanaysha et al., (2011); Hasan et al., (2009); Mulyono et al., (2020); and Budiyanti et al., (2020). Budiyanti et al., (2020) related responsiveness to the ability of company to provide service in a timely and responsive manner to employees. This could foster a positive perception of service quality delivered.

Hypothesis 4 (H_4) state that service quality of SU-PSA from Assurance has no significant effect on student satisfaction. The analysis showed that quality of lecturers regarding knowledge updates, adaptable curricula in study programs, and superior accreditation, did not increase student satisfaction. Moreover, the maintenance of educational staff competence did not contribute to enhanced student satisfaction. These results were consistent with Chui et al., (2016); and Hasan et al., (2009) but not in line with Ahmed & Mehedi Masud, (2014); Hanaysha et al., (2011); Hazilah Abd Manaf et al., (2013). This dimension was crucial as it related consumer perceptions regarding the risk and uncertainty concerning the ability of service providers (Budiyanti et al., 2020). CSI survey results were supportive as shown by the indicator values in the "Good" category for Conformity of service results received by student, the Implementation of learning plans, and the provision of up-to-date materials by lecturers.

Hypothesis 5 (H_5) state that service quality of SU-PSA from Empathy had a significant effect on Student Satisfaction. Attributes in this dimension reflected the professionalism of lecturers, the creativity in delivering teaching materials during learning, and the friendliness of educational staff in serving student. Satisfaction can be enhanced when the professional attitude of lecturers is effectively implemented and educational staff exhibit good hospitality. This dimension also includes the ease of usingdemons service offered by the institution, effective communication in providing information, and understanding student needs and desires (Budiyanti et al., 2020). These results were in accordance with Ahmed & Mehedi Masud, (2014); Dursun et al., (2013); Hanaysha et al., (2011); Shaari, (2014). For instance, Hanaysha et al., (2011) showed a strong relationship between Empathy and Customer Satisfaction among international student compared to Malaysians. However, Chui et al., (2016); and Hasan et al., (2009) showed contrasting results.

The results of CSI measurements were valuable for determining quality improvement strategies for SU-PSA. These strategies primarily focused on service quality dimensions and indicators falling within the pretty good category. This included elements such as completion time for service as well as handling complaints, suggestions, and feedback from student. To enhance service quality, it is essential to improve the competence and knowledge updates of lecturers, enhance the ability of educational staff in responding to student enquiries, and ensure that study programs have adaptable curricula with superior accreditation.

The completion time element pertains to the relationship between the time required to complete service at SU-PSA and the specified service hours. Student suggested that university could improve discipline by adhering more closely to service hours. Handling complaints, suggestions, and feedback also fell within the "pretty good" category, and related to the responsiveness of educational staff to serve. There were instances where employees were not available at service location during designated service hours. CSI score for all elements of service provided by SU-PSA in Indonesia for 2022 was 83,589. This value showed good performance category, typically associated with stronger customer relationships (Qudratullah et al., 2023).

The results showed that increase in student satisfaction, particularly with registration, the quality of lecturers and learning, educational staff service, study programs, as well as the quality of infrastructure, equipment, and facilities, significantly enhanced student loyalty and commitment to continue education at university until graduation. Student also expressed comfort regarding university environment. According to Vesna Rodić Lukić & Nemanja Lukić, (2018), student satisfaction can be measured by willingness to recommend a university to others. Understanding

the dimensions contributing to service quality enabled campus management to allocate appropriate capital and human resources and deliver a high level of service quality.

4. Conclusions

In conclusion, student at SU-PSA were satisfied with service quality, particularly in the dimensions of tangibility, responsiveness, and empathy. Tangibles had the most significant impact on student satisfaction, followed by empathy and responsiveness. However, reliability and assurance did not have any significant effect. State universities with financial management of Public Service bodies are given autonomy by the government in managing their finances, but are required to optimize services to the community. The quality of higher education services is best when consumer expectations, especially students, are met. The primary focus of quality improvement strategies was on service quality dimension and CSI indicators in the "pretty good" category, specifically handling complaints, suggestions, feedback from student, completion time for service, which had the lowest CSI scores. In general, CSI obtained from nine elements of service provided by SU-PSA in Indonesia for 2022 was in the "good" category. otential improvements might include implementing an online complaint system with transparent monitoring or follow-up actions, enhancing employee service competence, specifically in communication, as well as providing accessible channels for socializing student with system mechanisms and procedures.

SU-PSA management needed to enhance the responsiveness and swiftness of educational staff in delivering service to student through training and development efforts. It was also essential to raise awareness among staff about the importance of effectiveness and efficiency in record-keeping, communication, attitude adjustment, as well as service to student. Therefore, this study provided valuable insights and contributions for SU-PSA, particularly university management, in formulating policies to enhance quality improvement strategies. These strategies should correlate with the evaluation of ongoing service in terms of CSI as well as the Regulation of the Ministry of State Apparatus Utilization and Bureaucratic Reform Number 14 of 2017. As public organization, SU-PSA was obligated to improve service quality.

Further Study

Future studies were recommended to enhance the reliability of quality measurement instrument used for evaluating tertiary education service. The incorporation of additional dimensions that could enhance student satisfaction and conviction when choosing or recommending a university to others was also important. These studies could conduct in-depth investigations in different higher education or university and adopt qualitative surveys to refine data collection instrument.

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APPENDIX

Table 3. Discriminant and convergence validity results

Construct	Indicator	Loading Factor	Composite Reliability	AVE
Tangible	TG1	0,857	0.674	0.676
	TG2	0,876		
	TG3	0,870		
	TG4	0,773		
	TG5	0,690		
	TG6	0,794		
	TG7	0,846		
	TG8	0,896		
	TG9	0,873		
	TG10	0,886		
	TG11	0,848		
	TG12	0,851		
	TG13	0,782		
Reliability	RL1	0,924	0.677	0.784
	RL2	0,927		
	RL3	0,891		
	RL4	0,864		
	RL5	0,907		
	RL6	0,880		
	RL7	0,858		
	RL8	0,898		
	RL9	0,909		
Responsiveness	RS1	0,922	0.672	0.691
	RS2	0,906		
	RS3	0,901		
	RS4	0,887		
	RS5	0,854		
	RS6	0,915		
	RS7	0,878		
Assurance	AS1	0,840	0.679	0.834
	AS2	0,909		
	AS3	0,895		
	AS4	0,897		
	AS5	0,916		
	AS6	0,882		
	AS7	0,872		
	AS8	0,931		
	AS9	0,934		
	AS10	0,885		
Empathy	EM1	0,929	0.674	0.668
	EM2	0,876		
	EM3	0,925		
	EM4	0,917		
	EM5	0,920		
	EM6	0,929		
Satisfaction	SAT1	0,904	0.677	0.668
	SAT2	0,941		
	SAT3	0,924		
	SAT4	0,928		
	SAT5	0,917		
	SAT6	0,926		
	SAT7	0,906		

Source: processed data

Table 5. Result of Discriminant Analysis Using Factor Analysis - Rotated Component Matrix

Construct	Component					
	1	2	3	4	5	6
TG1	0.852					
TG2	0.851					
TG3	0.855					
TG4	0.780					
TG5	0.864					
TG6	0.854					
TG7	0.879					
TG8	0.860					
TG9	0.847					
TG10	0.658					
TG11	0.623					
TG12	0.865					
TG13	0.849					
RL1			0.868			
RL2			0.875			
RL3			0.948			
RL4			0.937			
RL5			0.878			
RL6			0.875			
RL7			0.872			
RL8			0.878			
RL9			0.947			
RS1					0.837	
RS2					0.770	
RS3					0.843	
RS4					0.860	
RS5					0.860	
RS6					0.809	
RS7					0.837	
AS1		0.940				
AS2		0.956				
AS3		0.845				
AS4		0.873				
AS5		0.940				
AS6		0.956				
AS7		0.845				
AS8		0.873				
AS9		0.940				
AS10		0.956				
EM1						0.864
EM2						0.843
EM3						0.805
EM4						0.749
EM5						0.770
EM6						0.864
SAT1				0.876		
SAT2				0.899		
SAT3				0.852		
SAT4				0.894		
SAT5				0.674		
SAT6				0.876		
SAT7				0.899		

Source: processed data