

Enhancing Student Satisfaction Through Academic Service Quality: Evidence from a Polytechnic Business Department

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Abstract

This study examines the effect of academic service quality on student satisfaction within the Business Administration Department of Politeknik Negeri Semarang, positioning student satisfaction as a key performance indicator in vocational higher education. This study is novel because it utilizes longitudinal institutional data spanning five semesters to conduct a micro-level SERVQUAL analysis within a vocational polytechnic setting, thereby integrating institution-specific system improvements often overlooked in broader higher education research. Through a quantitative descriptive approach analyzing 5,815 student responses via simple linear regression, the results demonstrate a statistically significant positive relationship ($p < 0.001$, $R^2 = 0.890$) between service quality and satisfaction. While tangible dimensions scored highest, the findings highlight a critical need for strategic improvements in responsiveness and empathy, despite a consistent upward trend in overall satisfaction that validates the effectiveness of continuous institutional efforts. Ultimately, this research provides empirical insights for higher education policymakers to enhance student-centered service delivery by prioritizing responsiveness and personalized administrative interactions within vocational settings.

KEYWORDS

academic service quality; student satisfaction; SERVQUAL; vocational higher education

Introduction

In contemporary higher education, student satisfaction is a critical benchmark of institutional performance, especially in vocational institutions where academic services must be both responsive and professionally oriented (Onditi & Wechuli, 2017). As competition among tertiary institutions intensifies, the ability to deliver consistent, high-quality academic services has become essential not only for institutional reputation but also for student retention, engagement, and learning outcomes (Anggreni, 2020; Kotler, 2017; Nguyen, 2024). Teaching effectiveness, administrative performance, and physical infrastructure are key drivers of this satisfaction (Manaransyah et al., 2023). Academic service quality, encompassing tangibles, reliability, responsiveness, assurance, and empathy, plays an essential role in shaping student perceptions and experiences (Alsheyadi & Albalushi, 2020). Politeknik Negeri Semarang, as a state polytechnic, has taken strategic steps to implement and evaluate service quality improvements across academic departments. Within this context, the Business Administration Department represents a vital academic unit with high student enrollment and diverse service interactions (Bawa et al., 2022). However, despite ongoing efforts to strengthen

academic services, periodic evaluations revealed disparities in student satisfaction across service dimensions and provider roles (Assyahri & Mardaus, 2023; Kamal et

al., 2020; Marius, 2018)

Moreover, the scope of academic service quality has expanded beyond traditional face-to-face interactions to encompass digital service delivery and information system reliability. In the current educational landscape, the performance of academic information systems is integral to the student experience, where ease of access, data accuracy, and system responsiveness directly impact satisfaction levels (Alsheyadi & Albalushi, 2020; Azzahra & Hadiono, 2022). Consequently, higher education institutions are compelled to treat service quality not merely as an administrative obligation but as a strategic asset for sustainability. High-quality service acts as a fundamental differentiator that strengthens the institution's competitive advantage, fostering a positive academic atmosphere that encourages students to recommend the institution to prospective applicants (Oktapiani, 2021).

Existing literature on higher education service quality often treats institutions as monolithic entities, primarily focusing on general universities while overlooking the distinct operational context of vocational polytechnics (Rahareng & Relawan, 2017). Furthermore, prior studies predominantly rely on cross-sectional surveys that capture a single snapshot in time, failing to account for the longitudinal impact of continuous system improvements (Marius, 2018). This study addresses this gap by offering a micro-level analysis within a polytechnic setting, utilizing institutional data spanning five semesters. Unlike previous research, this study explicitly disaggregates service delivery into three distinct roles, lecturers, academic administrative staff, and department managers, to provide a granular assessment of how specific service touchpoints influence student satisfaction over time (Bahiyah & Wibowo, 2019; Firdaus et al., 2021).

To address this complexity, the study adopts the SERVQUAL model, which measures service quality across five dimensions, tangibles, reliability, responsiveness, assurance, and empathy (Tjiptono, 2019). The objective is to analyze the extent to which academic service quality affects student satisfaction within the specific vocational polytechnic setting of the Business Administration Department at Politeknik Negeri Semarang, using longitudinal institutional data collected from the Academic and Student Affairs Administration Division (BAKPK) over five semesters. It is crucial to empirically assess how students perceive these qualities and how these perceptions shape their overall satisfaction (Mokodompit & Luneto, 2019). The study also aims to identify specific service attributes that require targeted improvement to enhance long-term student satisfaction. By offering an institution-specific, data-driven assessment of service quality performance over time, this research contributes to the limited literature on polytechnic-level service quality management and provides empirical support for strategic decision-making in academic service improvement and program image enhancement (Fakhrudin et al., 2018; Gregory, 2019).

Methods

Research Type

This study employed a quantitative descriptive approach with a cross-sectional design to examine the influence of academic service quality on student satisfaction, adopting an analytical framework consistent with prior studies in polytechnic settings such as

Setiawardani (2018). The analysis was based on institutional secondary data collected through structured academic service evaluation surveys. The study utilized the SERVQUAL model to assess perceived service quality across multiple dimensions and applied simple linear regression to evaluate the strength and direction of the relationship between service quality and student satisfaction. The non-experimental design enables an objective statistical interpretation of institutional data without manipulating study variables.

Population and Sample/Informants

The population of this study consisted of active students enrolled in the Business Administration Department of Politeknik Negeri Semarang. The data were derived from institutional academic service evaluations conducted by the Academic and Student Affairs Administration Division (BAKPK) over five academic semesters, from the 2022 odd semester to the 2024 odd semester. A census-based approach was applied, as all available evaluation responses were included without additional sampling procedures. The final dataset consisted of 5,815 aggregated responses, representing students across various academic years and class levels.

Research Location

This study was conducted at Politeknik Negeri Semarang, a state vocational higher education institution located in Central Java, Indonesia. As a public polytechnic under the Ministry of Education, Culture, Research, and Technology, Politeknik Negeri Semarang serves a diverse student body and emphasizes practical, industry-relevant education. The Business Administration Department, as the unit of analysis in this research, operates within this institutional environment and provides a representative setting for examining the dynamics of academic service quality and student satisfaction (Bani Salameh et al., 2024; Cheng et al., 2023; Chesser et al., 2018).

Instrumentation or Tools

This study employed institutional secondary data collected through academic service evaluation questionnaires administered by the Academic and Student Affairs Administration Division of Politeknik Negeri Semarang. The questionnaire was structured around the SERVQUAL framework, encompassing five core service quality dimensions: tangibles, reliability, responsiveness, assurance, and empathy as defined by Tjiptono (2019). These dimensions were applied across three categories of service providers: lecturers, academic administrative staff, and department managers. Each questionnaire item used a five-point rating scale consisting of the following levels: Very Poor, Poor, Fair, Good, and Excellent. The instrument was applied uniformly over five academic semesters, ensuring consistency and comparability in measuring students' perceptions of service quality.

Data Collection Procedures

Quantitative data were obtained from institutional academic service evaluations administered by the Academic and Student Affairs Administration Division of Politeknik Negeri Semarang. The evaluations were conducted through an integrated online system at the end of each academic semester. Participation in the survey was mandatory, as students were required to complete the evaluation before being granted access to their tuition billing information. Data were collected over five consecutive odd semesters from 2022 to 2024. The system automatically aggregated the responses to ensure anonymity, and access to the data for research purposes was granted through

official institutional authorization.

Data Analysis

Quantitative data were analyzed using SPSS statistical software. A simple linear regression analysis was conducted to examine the effect of academic service quality on student satisfaction. Descriptive statistics were used to identify the average scores across SERVQUAL dimensions and service categories. To ensure the validity of the regression model, classical assumption tests were applied. Internal consistency of the questionnaire was assessed using Cronbach's Alpha reliability coefficient.

Result and Discussion

The statistical analysis confirmed a strong and statistically significant positive influence of academic service quality on student satisfaction. The simple linear regression equation was $Y = 0.453 + 0.892X$. This means that a one-unit increase in students' perceived academic service quality is associated with a 0.892-unit increase in their satisfaction levels. The model was highly significant ($p < 0.001$), and the coefficient of determination (R^2) was 0.890, indicating that 89% of the variance in student satisfaction is explained by academic service quality. (See [Table 1](#) and [Table 2](#)).

These results provide robust statistical support for the hypothesis that academic service quality significantly influences student satisfaction ([Chudzaifah et al., 2022](#); [Dahlia et al., 2020](#); [Dakhi, 2022](#)). To ensure the validity of the regression model, several assumption tests were conducted. The scatterplot of residuals ([Figure 1](#)) showed random dispersion without any systematic pattern. This confirms homoskedasticity, allowing the regression model to proceed. As only one independent variable was tested, multicollinearity is not applicable.

SERVQUAL was used to assess five core dimensions of academic service quality. The descriptive statistics are presented below.

Tangibles scored the highest, indicating strong satisfaction with facilities such as classrooms and learning environments. (See [Table 3](#)). Responsiveness and empathy, however, scored the lowest and represent key areas for targeted improvement. Crucially, this study distinguishes itself from typical cross-sectional research by utilizing five-semester longitudinal data (2022–2024), which provides robust evidence of a consistent upward trend in student satisfaction within the Business Administration Department ([Sunarya & Wulandari, 2023](#)). This positive trajectory validates the effectiveness of continuous institutional improvements tailored to this polytechnic setting, such as digitized academic services, enhanced learning environments, and structured academic advising ([Dora & Asmar, 2023](#); [Praditya & Yustanti, 2019](#)). (See [Figure 2](#)).

To contextualize these findings, previous studies on academic service quality and student satisfaction were reviewed. (See [Table 4](#)).

These findings reinforce the growing body of literature that positions academic service quality as a cornerstone of student satisfaction in higher education ([Alsheyadi & Albalushi, 2020](#)). The SERVQUAL model has been widely adopted to assess service quality in tertiary settings, and this study further validates its applicability in vocational institutions like polytechnics ([Setiawardani, 2018](#)). The higher ratings in tangibles and reliability mirror earlier research outcomes in public universities in Southeast Asia, where investment in physical infrastructure often

precedes improvements in service responsiveness. This study contributes a polytechnic-specific perspective that underscores the continued lag in administrative responsiveness, a consistent weakness across multiple institutions and service categories ([Irviantina, 2022](#)). Importantly, this study advances the literature by offering a micro-level analysis within a specific polytechnic department, moving beyond typical snapshot-based surveys. By utilizing longitudinal institutional data, the research enables precise tracking of service development over time, highlighting how structured institutional support (e.g., centralized academic services by BAKPK) is crucial for sustaining satisfaction gains across vocational cohorts ([Widiastuti et al., 2023](#)).

Interpretation of Key Findings

The regression results ($\beta = 0.892$, $p < 0.001$) emphasize the significant role of academic service quality in shaping student satisfaction. The high R^2 value suggests that service quality is not just one of many contributing factors, it is the primary determinant in this context ([Nofrida & Najib, 2023](#)). This dominant influence implies that for polytechnic students, the core academic experience is inextricably linked to the efficiency of service delivery, echoing [Setiawardani \(2018\)](#) who noted that administrative precision is paramount in vocational education. The consistently high rating for Tangibles confirms that physical learning environments heavily influence perceptions of service quality, supporting the infrastructure investment made by Politeknik Negeri Semarang in recent years.

In contrast, the low score for Responsiveness suggests ongoing issues with administrative delays, particularly in processes like course registration and exam schedules ([Shabri & Yanti, 2020](#)). This disparity highlights a critical service gap where physical upgrades appear to have outpaced human resource agility, a challenge often observed when academic staff struggle to meet student demands during peak periods ([Bahiyah & Wibowo, 2019](#)). Furthermore, while the observed increase in satisfaction scores across semesters aligns with institutional upgrades in service delivery mechanisms, such as digitized feedback systems, the lower scores in Empathy indicate that digitization should not replace personalized human support. As noted by [Irviantina & others, \(2022\)](#), reliance on portal-based services must be balanced with accessible support channels to ensure students feel understood and valued individually.

Comparison with Previous Studies

The results of this study support previous research emphasizing the critical role of service quality in determining student satisfaction. In line with findings by [Setiawardani \(2018\)](#) in a similar polytechnic context, this study reaffirms that the SERVQUAL dimensions, particularly tangibles and reliability are key predictors of perceived quality in vocational service environments. Additionally, the study aligns with [Nguyen et al. \(2024\)](#), who found that satisfaction is strongly influenced by students' direct interactions with academic and administrative systems. However, our findings offer a different perspective from [Alsheyadi & Albalushi \(2020\)](#), who emphasized the strong mediating role of cross-functional collaboration in driving responsiveness and empathy. In our specific context, these two dimensions consistently received the lowest ratings. This discrepancy may be attributed to institutional differences, such as administrative workflows, student-to-staff ratios, and the integration level of digital support systems. Furthermore, this study uniquely contributes to the vocational higher education service quality literature by analyzing longitudinal institutional data, an aspect rarely captured in previous

cross-sectional studies (Adiputra et al., 2019).

Limitations and Cautions

Despite the robustness of the dataset and the relevance of the findings, this study has several limitations. First, the use of secondary institutional data limits the researcher's control over variable design and respondent segmentation, making it difficult to perform subgroup analyses (e.g., by gender, year level, or academic performance). Second, the research applied a cross-sectional analytical method on aggregated data, which restricts the capacity to assess causality or track individual-level changes over time. Third, the study focuses exclusively on one department within a single polytechnic, which may limit the generalizability of the findings to other academic units or institutions with different organizational structures and student

demographics.

Recommendations for Future Research

Future research should consider using primary data collection methods to explore student satisfaction at the individual level, enabling more granular analysis of factors such as demographic characteristics or course types. Longitudinal panel data would also strengthen the ability to capture causal relationships between specific service improvements and satisfaction trends over time. Moreover, expanding the scope to include multiple departments or polytechnic institutions could enhance the generalizability of findings. Incorporating qualitative approaches such as focus groups or interviews would provide deeper insights into the student experience, particularly regarding perceived empathy and responsiveness, which were the lowest-scoring dimensions in this study.

Table 1. Simple Linear Regression Analysis

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	0.453	0.017	-	26.125	.000
Academic Service (X)	0.892	0.004	0.944	217.332	.000

Source: SPSS Output, 2025

Table 2. Coefficient of Determination (R²)

R	R Square	Adjusted R ²	Std. Error of the Estimate
0.944	0.890	0.890	0.266

Source: SPSS Output, 2025

Table 3. Descriptive Statistics of Service Quality Dimensions

Dimension	Mean	Std. Deviation	Interpretation
Tangibles	4.1613	0.89168	Highest satisfaction dimension
Reliability	4.0137	0.53023	High, consistent performance
Responsiveness	3.9815	0.52462	Lowest, need improvement
Assurance	3.9966	0.53050	Fairly strong
Empathy	3.9939	0.52166	Moderate, could be improved

Source: SPSS Output, 2025

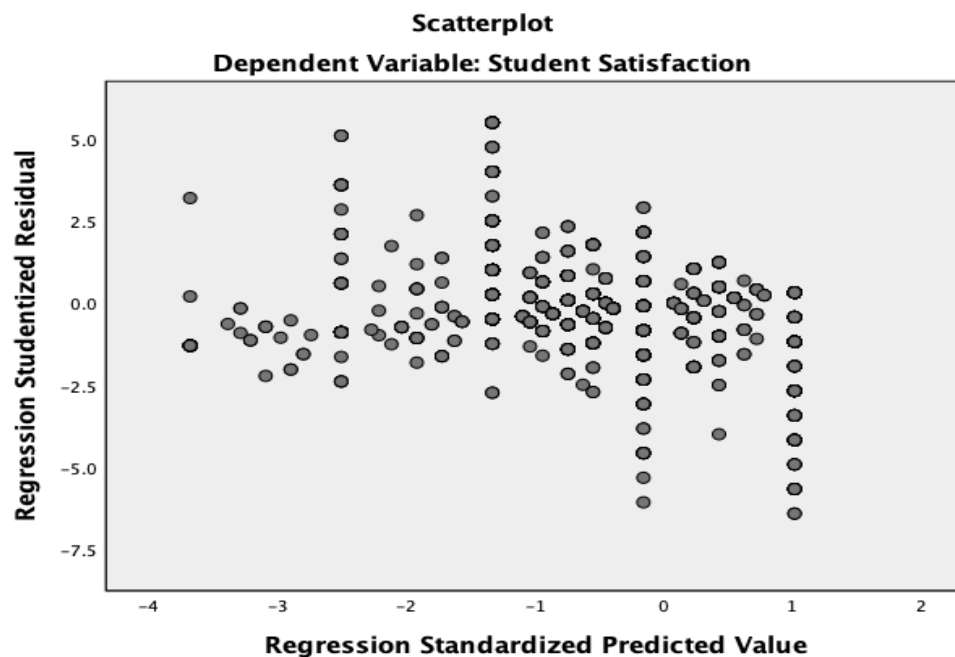


Figure 1. Heteroscedasticity Test

Source: SPSS Output, 2025

Table 4. Table 4. Key Findings from Reviewed Literature

No	Author(s)	Year	Research Context	Key Findings
1	Assyahri & Mardaus	2023	Universitas Negeri Padang	Academic service quality significantly affects satisfaction.
2	Chudzaifah et al.	2022	IAIN Sorong	Service quality dimensions positively and significantly influence student satisfaction.
3	Marlius	2018	STIE "KBP" Padang	Tangible, reliability, responsiveness, assurance, and empathy simultaneously affect student satisfaction.
4	Setiawardani	2018	Politeknik Negeri Bandung	Academic administrative service quality has a positive impact on student satisfaction in a polytechnic setting.
5	Rahareng & Relawan	2017	Business Admin. - Telkom University	Responsiveness and Tangibles significantly affect satisfaction, while other dimensions showed mixed results.

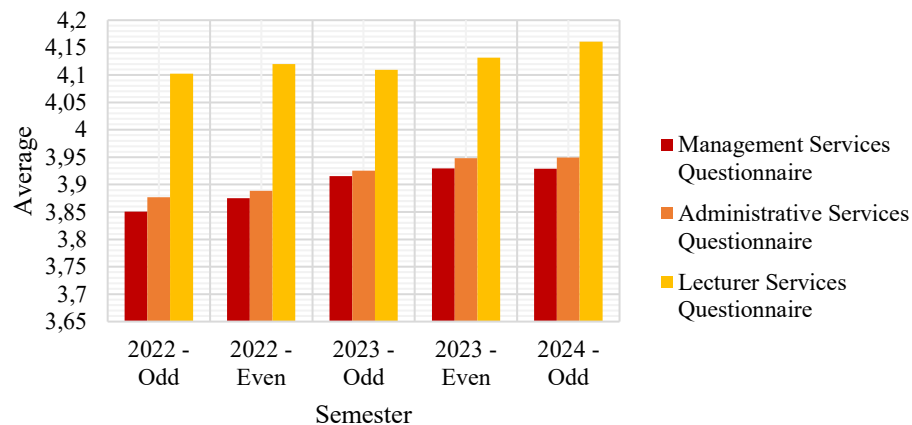


Figure 2. Trend of Student Satisfaction Scores (2022–2024)

Source: Processed from BAKPK data, 2025

Conclusion

This study analyzed the impact of academic service quality dimensions on student satisfaction within the Business Administration Department of Politeknik Negeri Semarang over five semesters. The findings demonstrated a strong and statistically significant relationship between service quality and satisfaction ($R^2 = 0.890$; $p < 0.001$), highlighting a consistent upward trend in satisfaction scores over time. Notably, tangible aspects of service, such as classroom infrastructure and learning facilities, received the highest ratings, while responsiveness and empathy remained the most critical areas for improvement.

Theoretically, this study distinguishes itself as a rare, large-scale analysis utilizing institutional SERVQUAL data across multiple semesters within a polytechnic context. It validates that the model is highly applicable and sensitive to the nuances of vocational higher education, where students prioritize efficiency and professional service standards. Practically, these results provide robust empirical evidence to guide vocational higher education policy. The findings suggest that while infrastructure investment is necessary, it is insufficient on its own to maximize student satisfaction. To bridge the satisfaction gap, institutional leaders must shift their strategic focus toward human capital development. This involves implementing targeted training programs for academic and administrative staff to enhance their

service mindset, responsiveness, and empathetic communication skills. Additionally, the integration of real-time digital feedback systems could serve as a strategic tool to monitor and address student complaints more swiftly, directly tackling the issue of low responsiveness.

Despite the robustness of the longitudinal dataset, several limitations should be acknowledged to provide a balanced perspective. First, the reliance on secondary aggregated data limits the depth of analysis regarding individual student experiences and prevents the examination of demographic variables such as gender, age, or socioeconomic background. Second, the focus on a single department within one polytechnic limits the generalizability of the findings to other disciplines or institutions with different organizational cultures. Third, the quantitative nature of the study identifies what is happening but does not fully explain why certain service dimensions, particularly empathy, continue to score low despite institutional improvements.

Future research should address these limitations by incorporating primary, disaggregated data to allow for more granular subgroup analyses. Longitudinal panel studies that track the same cohort of students over time would further strengthen causal inferences. Moreover, expanding the institutional scope to include a comparative analysis between different polytechnics or between vocational and academic universities could provide broader generalizations. Finally, integrating qualitative approaches, such as focus group discussions or in-depth interviews, is recommended to explore the underlying

behavioral and structural factors behind low-scoring service dimensions. Such efforts could enhance our understanding of student-centered service delivery and

inform broader institutional strategies for sustaining student loyalty and engagement in the competitive landscape of vocational higher education.

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