



## Analyzing the Effect of Service Quality Dimensions on Student Satisfaction and Retention at ITTR English Course

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**Abstract**

**Background:** English proficiency has become increasingly important in globalization. ITTR English Course, a prominent language school in Riau, experienced enrollment growth from 300 to 554 students (2020-2025), yet revenue targets were not achieved, indicating potential service quality issues affecting student retention.

**Objectives:** This study investigates service quality gaps at ITTR English Course using SERVQUAL model dimensions to identify improvement priorities for enhancing student satisfaction and retention.

**Methods:** Sequential explanatory mixed-methods design involving quantitative questionnaire surveys (n=200), qualitative NVivo analysis, Current Reality Tree root cause analysis, and Analytic Hierarchy Process prioritization. Focus group discussions with five internal divisions were conducted.

**Results:** Reliability emerged as the most critical dimension for student satisfaction, with operational consistency as the primary concern (42 codings). System digitalization received the highest prioritization score (0.56) among improvement alternatives.

**Conclusions:** Service quality improvements, particularly through system digitalization, process standardization, and accountability mechanisms, can enhance student satisfaction, retention, and institutional financial sustainability.

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## INTRODUCTION

English proficiency has become more than just a necessity in the era of globalization and digitalization. According to EF Education First (2023), Indonesia ranked 79th out of 113 countries with a moderate level of English proficiency. This condition highlights the increasing demand for improved English language skills across various levels of society. The importance of English proficiency continues to grow as students and professionals require English skills to support international business activities and meet academic requirements both domestically and internationally. In response to this trend, the Ministry of Education and Culture has encouraged the development of foreign language skills as part of the Merdeka Belajar Kampus Merdeka (MBKM) program (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia, 2023). Furthermore, many universities require English proficiency certificates, such as TOEFL or IELTS scores, as requirements for graduation and participation in international student exchange programs.

The growth of English learning demand has also contributed to the expansion of English course institutions in Indonesia. The increasing number of non-formal education providers

indicates that the English course industry has become increasingly competitive, requiring institutions to continuously improve service quality to maintain student satisfaction and loyalty (Zeithaml et al., 2018).

But this rapid growth has also increased the level of competition in the sector. Conventional type of course providers such as ITTR English Course which has been around since 1960, struggle to keep up with service quality and competitive challenges. For the past five years (2020-2025) while having a consistent average of 540 student enrollment per year, ITTR has seen their revenue growth remain flat. Moreover, the institution has not accomplished revenue targets for 2024–2025 academic year amounting to IDR 2.4 billion resulting in strategic issues related to service effectiveness and quality of service (Zeithaml et al., 2018).

The enrollment trend of ITTR English Course from 2020 to 2025, the English Course Enrollment figures from ITTR shows an increase from 300 to 554 students, with 2025 reporting the highest number of students enrolled. This trend provides the empirical context for examining satisfaction and retention, which are commonly associated with perceived service quality in educational settings (Rashid et al., 2021).

This percentage increase shows the level of competitiveness from the company both from the institution, and shows that the market for English Teaching and Learning is not dead. However, for the academic year 2024-2025, ITTR set a Revenue Target of IDR 2.4 billion, but the revenue realized was IDR 1.939 billion. This means that even though the number of students has increased, the number of students does not directly correlate to an increase in revenue. In a Service-Based Educational Institution, the Financial Sustainability is not only related to the number of new students enrolled. It concerns how the institution is able to retain students, to progress to the next higher program level, and refers other students (s). Each student therefore is economically valuable beyond the first registration, and this value builds up through retention and progression (Zeithaml et al., 2018).

If enrollment rises but revenue doesn't grow, it may indicate stagnation of student lifetime value. Stagnation occurs when students choose not to go to upper levels, or do not re-register. In the case of educational services, customer dissatisfaction rarely gets expressed in the form of complaints, and instead, it gets expressed in not continuing to enroll. This phenomenon lowers retention rates, and stagnates revenue growth. Under these conditions, it can be argued that the issue lies, not in market demand, but in the richness of the service. When students have to settle their expectations, it does not take long for their service dissatisfaction to set in, and cast its shadow on loyalty and on the decision to continue (Kotler & Keller, 2016; Zeithaml et al., 2018).

The increase in student enrollment that has not been accompanied by revenue growth indicates that ITTR English Course is still facing challenges in its service quality. Based on preliminary observations and interviews with the management, several service-related issues were identified, including inconsistent class scheduling, ineffective communication regarding schedule changes, variations in teaching methods among instructors, and the need to improve coordination in service delivery. These conditions indicate that several aspects of the institution's services require further evaluation to ensure that the services provided meet students' expectations and support the institution's objectives (Rashid et al., 2021).

Therefore, this study employs the SERVQUAL approach to evaluate the gap between students' expectations and perceptions of the services provided by ITTR English Course. The findings are expected to identify service aspects that require improvement and provide a basis for developing strategies to enhance service quality at ITTR English Course (Rashid et al., 2021).

ITTR English Course is one of the oldest and recognized English language schools in Pekanbaru, Riau Province It has been known as an independent ELT institution. Established in 1960 by the late Yuliar Djoni Djakamsi, ITTR (Inggris Teknologi Tinggi Riau), aimed to widen the access of English education in Indonesia, specifically on Sumatra due to limited language-speaking facilities at that time. As one of the first private English course providers located outside Java, ITTR has been instrumental in sparking an interest in English studies among students and professionals in its area. From a service-marketing perspective, sustained institutional value is closely related to how service experiences are managed over time (Zeithaml et al., 2018).

With over ten years of experience in language education, ITTR English Course has been operating in a field that has been ever changing. The last couple of years have proven tougher than usual due to a surging number of competitors in the form of technology-based learning that have

expanded to include online, hybrid, and other modes of teaching. These methods have caused us to rethink how students want to learn and how they expect customer support to range from immediate responses, and other various service touches. ITTR, along with other language schools, needs to accommodate this rapid shift in order to continue operating (Dwivedi et al., 2021).

The ITTR English Course student numbers from 2020 and projected numbers to 2025 indicates that the course has increased student enrollment from 300 to 554 in those 5 years. This demonstrates an ever-present demand for learning the English language and a vote of confidence for ITTR to continue drawing in students, even when the competition continues to grow. The only drawback has come in the form of money. In 2024, ITTR set an earning goal of 2.4 billion IDR. It missed its target by collecting only 1,939,000,000 IDR, which leaves a deficit of 461,000,000 IDR. The financial implications of enrollment are therefore better interpreted alongside retention and customer-value considerations (Kotler & Keller, 2016; Zeithaml et al., 2018).

Although the institution continues to increase in the number of students, the shortfall in revenue means that simply increasing the enrollment count isn't enough to provide financial sustainability. In service-based educational institutions, financial sustainability in the long term, depends on gaining new students, but also on the retention of students, their progression to higher levels within the educational framework, and the positive word-of-mouth that is generated. The financial contribution of a student goes beyond their first payment and is cumulative as long as their enrollment is maintained. When the number of students goes up with no proportionate increase in revenue, this is a strong indication of a blockage in realization of the full potential revenue from the student. This is most often due to an absence of students moving to the next level of the educational offering or re-enrolling (Kotler & Keller, 2016; Zeithaml et al., 2018).

In the field of educational services, formal complaints are rarely attempted because, instead of complaining, students often choose to simply leave their studies. This phenomenon not only damages retention, but it is also a source of revenue loss. In these situations, it is not the market demand that is the problem, but the quality of the customer service experience that is provided to students. If the service is perceived to be less than what it should be, then the customer is left unsatisfied, and retention and loyalty for the service decreases. Especially in the educational sector, the less loyalty there is, the worse it is financially and the less sustainable it will be in the long run. This situation of service quality affects many people, and the most affected are students, who are the end consumers of the service. Also affected are the managerial staff who have to balance the service with the financial aspects, the academic and administrative staff, who are responsible for the delivery of the services, the parents and the guardians who are financially involved, and the competitors who operate in the same market and seek to profit from the other actors in the market. This is why it is especially important to have good quality services that will meet and satisfy the students (Zeithaml et al., 2018).

ITTR English Course is facing challenges with enrollment growth and revenue performance. Therefore, it is critical to investigate the possible gaps between students' expectations and perceptions of service quality, and ITTR English Course. This study seeks to answer the following research question: RQ1: What kind of gaps are there in the service quality demanded by ITTR English Course students and how do they influence institutional profitability? In order to answer this question, ITTR English Course adopted the SERVQUAL model to analyze the gaps in five dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy. Addressing the service quality gaps will allow ITTR to know which areas to prioritize in making improvements to enhance student satisfaction, increase student loyalty, and improve ITTR's long-term financial health (Najimdeen et al., 2021).

This study aims to identify gaps between students' expectations and perceptions of service quality at ITTR English Course using the SERVQUAL dimensions. It also examines the root causes of service inconsistencies through qualitative analysis and focus group discussions, prioritizes improvement strategies using the Analytic Hierarchy Process (AHP), and develops an evidence-based implementation roadmap. The findings are expected to guide strategically focused improvements that correspond to students' actual needs and the institution's capabilities, thereby increasing student satisfaction and retention while supporting the institution's long-term financial sustainability.

## METHOD

This study employed a sequential explanatory mixed-methods design, in which quantitative research was conducted first, followed by qualitative analysis to explain and interpret the quantitative findings. According to Creswell and Plano Clark (2007), this design is appropriate when quantitative results identify patterns or problems that require deeper qualitative exploration.

By beginning with qualitative investigation, the study ensures that the quantitative stage is grounded in the lived realities and perspectives of stakeholders, rather than preconceived assumptions. This approach enhances contextual validity and strengthens the practical implications of the research findings, particularly in service-providing educational institutions, where service quality is influenced by the complex interactions among human resources, systems, and organizational processes (Creswell & Creswell, 2017; Zeithaml et al., 2018).

Subsequently, qualitative data were collected from selected students as participants to explore their perceptions and experiences regarding ITTR's service quality in greater depth. The collected responses were analyzed using NVivo software to identify recurring themes, patterns, and relationships within the qualitative data. Furthermore, a Focus Group Discussion (FGD) was conducted with ITTR employees to validate the qualitative findings, clarify organizational factors, and support the identification of root causes through CRT (Creswell & Plano Clark, 2007; Creswell & Creswell, 2017).

The findings from both stages are then integrated and analyzed using Current Reality Tree (CRT) to determine the root causes of service deficiencies and critical focus areas for improvement (Creswell & Plano Clark, 2017).

Once the key areas are identified, the Analytic Hierarchy Process (AHP) is applied to prioritize improvement actions. Finally, the Plan-Do-Check-Act (PDCA) cycle guides the implementation, monitoring, and continuous improvement of these actions, ensuring that service enhancements are systematic, measurable, and sustainable (Saaty, 1980; Saaty, 2008; Verhoef et al., 2021).

The data collection for this study was conducted through a series of structured questionnaire surveys, targeting both internal employees and students of ITTR English Course. The purpose was to capture a comprehensive understanding of service quality performance, students' perceptions, and competitive considerations, which form the basis for subsequent quantitative and qualitative analyses (Zeithaml et al., 2018).

The data analysis in this study was conducted through a sequential and integrative framework combining quantitative gap measurement, qualitative exploration, root cause analysis, prioritization, and continuous improvement. Each analytical stage was designed to answer a different level of the problem: what is happening, why it is happening, which issue should be prioritized, and how it should be improved (Creswell & Plano Clark, 2017; Saaty, 2008).

## RESULTS AND DISCUSSION

### Results

#### *Quantitative Analysis*

**Table 1**

*Descriptive Statistics SERVQUAL*

|      | Descriptive Statistics |      |      |        |                |
|------|------------------------|------|------|--------|----------------|
|      | N                      | Min  | Max  | Mean   | Std. Deviation |
| T1   | 200                    | 1.00 | 5.00 | 3.7700 | 1.08304        |
| T2   | 200                    | 1.00 | 5.00 | 3.8050 | 1.04999        |
| T3   | 200                    | 1.00 | 5.00 | 3.6850 | 1.08705        |
| T4   | 200                    | 1.00 | 5.00 | 3.5750 | 1.08177        |
| REL1 | 200                    | 1.00 | 5.00 | 2.8050 | 1.09681        |
| REL2 | 200                    | 1.00 | 5.00 | 3.0800 | 1.02413        |
| REL3 | 200                    | 2.00 | 5.00 | 3.3300 | 1.05673        |
| REL4 | 200                    | 1.00 | 5.00 | 3.0300 | .94529         |
| RES1 | 200                    | 1.00 | 5.00 | 3.3050 | 1.11724        |
| RES2 | 200                    | 1.00 | 5.00 | 3.2750 | 1.15588        |
| RES3 | 200                    | 1.00 | 5.00 | 3.1100 | 1.19795        |

|         | N   | Descriptive Statistics |      |        |                |
|---------|-----|------------------------|------|--------|----------------|
|         |     | Min                    | Max  | Mean   | Std. Deviation |
| RES4    | 200 | 1.00                   | 5.00 | 3.4100 | 1.19543        |
| A1      | 200 | 1.00                   | 5.00 | 3.1100 | 1.17251        |
| A2      | 200 | 1.00                   | 5.00 | 3.3900 | 1.15088        |
| A3      | 200 | 1.00                   | 5.00 | 3.3250 | 1.19856        |
| A4      | 200 | 1.00                   | 5.00 | 3.4450 | 1.35133        |
| E1      | 200 | 1.00                   | 5.00 | 3.6000 | 1.38912        |
| E2      | 200 | 1.00                   | 5.00 | 3.6000 | 1.29553        |
| E3      | 200 | 1.00                   | 5.00 | 3.5700 | 1.47852        |
| E4      | 200 | 1.00                   | 5.00 | 4.0150 | 1.15388        |
| Valid N | 200 |                        |      |        |                |

Based on Table 1, all indicators were evaluated by 200 respondents using a Likert scale ranging from 1 to 5. The highest mean score was found in indicator E4 (empathy dimension) with a mean of 4.0150 and a standard deviation of 1.15388. This result indicates that the aspect of individualized attention and care toward students is perceived most positively compared to other service attributes (Rashid et al., 2021).

### **Qualitative Analysis (NVivo)**

All qualitative responses from the questionnaires were thematically analyzed using NVivo 12 to produce systematic and measurable node groupings (Creswell & Creswell, 2017).

**Table 2**

#### *Node Frequency*

| No | Node                              | Number of Codings |
|----|-----------------------------------|-------------------|
| 1  | Operational Consistency           | 42                |
| 2  | Accuracy & Clarity of Information | 31                |
| 3  | Commitment Fulfillment & Trust    | 37                |
|    | Total Coding                      | 110               |

Based on the Table 2, the node with the highest frequency is Operational Consistency (42 codings). This indicates that the most prominent issues in students' responses and internal discussions relate to the stability of schedule implementation, continuity of the curriculum, the organization of academic activities, and consistency in teaching standards (Najimdeen et al., 2021).

### **Operational Overview of ITTR English Course**

Based on these conditions, the operational service process at ITTR English Course still relies heavily on manual recording, WhatsApp-based communication, and separate Excel files. This dependence on manual processes creates operational problems, including unintegrated data management, delayed administrative processes, difficulties in class scheduling, and inconsistent information flow between divisions. These problems become the main Undesirable Effects (UDEs) that are further analyzed using the Current Reality Tree (CRT) method to identify the root causes of the problems (Müller et al., 2022; Vial, 2019).

#### **1) Current Reality Tree (CRT)**

The Current Reality Tree (CRT) in this study is constructed to systematically identify and visualize the cause-and-effect relationships underlying operational inconsistencies at ITTR English Course. The CRT aims to uncover the root causes that lead to recurring undesirable effects (UDEs), which negatively influence students' perception of service reliability. This analysis draws on two primary sources of qualitative data: the open-ended responses from 43 active students collected through a structured questionnaire, and insights obtained from Focus Group Discussions (FGDs) with five internal divisions of ITTR, namely the Academic Division, Administrative Staff Division, Public Relations Division, Finance Division, and Digital Marketing Division. By integrating student feedback with internal operational perspectives, the CRT provides a comprehensive view of the organizational and procedural factors contributing to inconsistencies

in class schedules, curriculum delivery, and overall operational execution. The purpose of constructing this CRT is to not only identify the core problem but also to guide evidence-based interventions that improve the reliability of ITTR's educational services (Creswell & Plano Clark, 2017; Zeithaml et al., 2018).

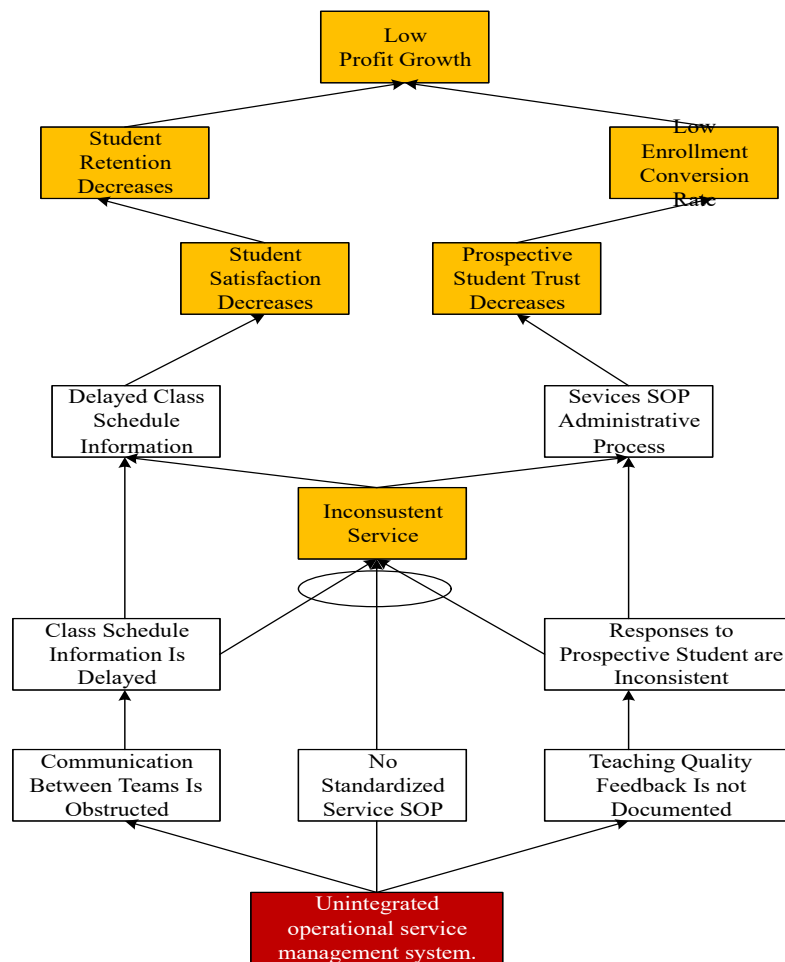


**Figure 1. CRT**

Figure 1 illustrates the cause-and-effect relationships among various operational problems identified at ITTR English Course. Based on the analysis, it can be seen that the problems occurring within the service process are interconnected and originate from the same fundamental issue (Müller et al., 2022).

## Business Solution

### Service SOP Standardization

Service SOP standardization is a strategic initiative aimed at ensuring that all operational and instructional activities are conducted in a consistent, systematic, and well-structured manner. This process includes the development of SOP documents, consultation with experts or management consultants, the implementation of internal workshops to socialize the SOPs to staff, as well as the printing and distribution of operational guidelines (Situmorang et al., 2024).

Based on the estimated costs of training and management consulting services in Pekanbaru, the total budget required ranges from IDR 8,000,000 to IDR 15,000,000. This estimate covers document preparation, internal training activities, and the provision of supporting materials to ensure the effective implementation of SOPs within ITTR English Course. The emphasis on process standardization and staff preparation is consistent with evidence that clearly defined service SOPs can strengthen service quality (Situmorang et al., 2024).

This is in line with the study conducted by Situmorang et al. (2024), which found that the implementation of service Standard Operating Procedures (SOPs) has a direct impact on service quality. The study highlights that clearly defined SOPs enhance service consistency, thereby

improving the perceived quality of services. Therefore, the adoption of standardized SOPs represents a strategic step in improving service quality in both organizations and educational institutions.

### ***Service Accountability Improvement***

Improving service accountability can be achieved through various initiatives, including customer service training for staff, the development of internal communication protocols, the implementation of service performance monitoring mechanisms, and periodic evaluations of service quality delivered to students. This program typically involves professional trainers or human resource development institutions to enhance staff competence and professionalism in delivering educational services.

Therefore, implementing service accountability improvement programs is essential to strengthen staff responsibility, enhance the quality of service interactions, and ensure that service processes are carried out consistently and professionally. Based on the estimated costs of human resource training and performance evaluation system development in Pekanbaru, the required budget ranges from IDR 12,000,000 to IDR 25,000,000, covering training implementation, evaluation instrument development, and service monitoring activities. Training, monitoring, and service-performance evaluation are also consistent with literature on employee capability and service quality (Handrich & Otterbach, 2024).

### ***System Digitalization***

System digitalization is considered the highest-priority improvement strategy due to its significant impact on the efficiency and effectiveness of organizational management. This initiative includes the development of an integrated administrative system, class scheduling platforms, and student data management systems that can be accessed digitally by management and staff (Müller et al., 2022; Vial, 2019).

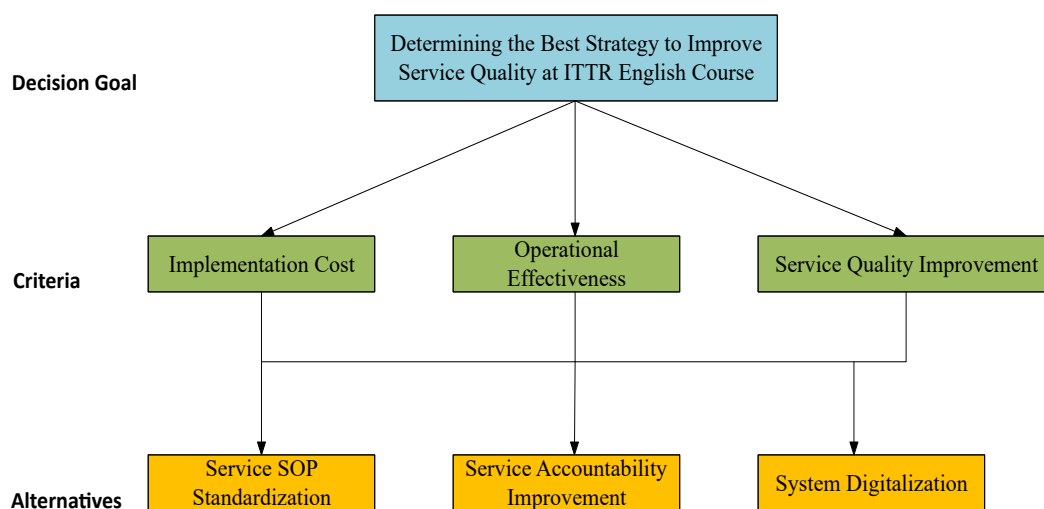


**Figure 2.** AHP

Based on the AHP hierarchy presented in Figure 2, the main goal of the analysis is to determine the most appropriate improvement scenario to enhance service quality, which is expected to increase student satisfaction and loyalty at ITTR English Course. To achieve this objective, three evaluation criteria are used to assess the proposed improvement scenarios (Saaty, 1980; Saaty, 2008).

To organize the AHP analysis, each criterion and scenario is assigned a specific code. These codes are used to simplify the construction of pairwise comparison matrices and to facilitate the calculation of priority weights in determining the most appropriate improvement scenario for ITTR English Course (Saaty, 1980; Saaty, 2008).

**Table 3***Pairwise Comparison Matrix Form*

| Pairwise Comparison Matrix Form                                                                                                                                                       |                        |                |   |   |   |   |   |   |           |   |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------|---|---|---|---|---|---|-----------|---|------------------------|
| Instructions for Completion                                                                                                                                                           |                        |                |   |   |   |   |   |   |           |   |                        |
| Please provide your assessment based on the level of importance of each factor in improving service quality at ITTR. Use the following pairwise comparison scale ranging from 1 to 9: |                        |                |   |   |   |   |   |   |           |   |                        |
| 1 = Equally important                                                                                                                                                                 |                        |                |   |   |   |   |   |   |           |   |                        |
| 3 = Slightly more important                                                                                                                                                           |                        |                |   |   |   |   |   |   |           |   |                        |
| 5 = Moderately more important                                                                                                                                                         |                        |                |   |   |   |   |   |   |           |   |                        |
| 7 = Significantly more important                                                                                                                                                      |                        |                |   |   |   |   |   |   |           |   |                        |
| 9 = Extremely more important                                                                                                                                                          |                        |                |   |   |   |   |   |   |           |   |                        |
| Question                                                                                                                                                                              | Parameter              | Scale Criteria |   |   |   |   |   |   | Parameter |   |                        |
| How important is SOP Standardization compared to Service Accountability?                                                                                                              | SOP Standardization    | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Service Accountability |
| How important is Service Accountability compared to System Digitalization?                                                                                                            | SOP Standardization    | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | System Digitalization  |
| How important is System Digitalization compared to System Digitalization?                                                                                                             | Service Accountability | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | System Digitalization  |
| Scenario                                                                                                                                                                              |                        |                |   |   |   |   |   |   |           |   |                        |
|                                                                                                                                                                                       | Parameter              | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Parameter              |
| Considering SOP Standardization, how important does alternative 1/2/3 compoared to each other?                                                                                        | Alt1                   | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Alt2                   |
|                                                                                                                                                                                       | Alt1                   | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Alt3                   |
|                                                                                                                                                                                       | Alt2                   | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Alt3                   |
| Considering Service Accountability, how important does alternative 1/2/3 compoared to each other?                                                                                     | Alt1                   | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Alt2                   |
|                                                                                                                                                                                       | Alt1                   | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Alt3                   |
|                                                                                                                                                                                       | Alt2                   | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Alt3                   |
| Considering System Digitalization, how important does alternative 1/2/3 compoared to each other?                                                                                      | Alt1                   | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Alt2                   |
|                                                                                                                                                                                       | Alt1                   | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Alt3                   |
|                                                                                                                                                                                       | Alt2                   | 9              | 7 | 5 | 3 | 1 | 3 | 5 | 7         | 9 | Alt3                   |

Table 3 Pairwise Comparison Matrix Form represents a questionnaire designed to assess the relative importance of various criteria and alternatives in the service improvement process at ITTR using the Analytic Hierarchy Process (AHP) (Saaty, 1980; Saaty, 2008).

**Table 4***Aggregated Result of Pairwise Comparisons*

| Parameter              | Subject Matter Expert |       |       |       |       |       |       |       | Geometric Mean Value | Parameter              |
|------------------------|-----------------------|-------|-------|-------|-------|-------|-------|-------|----------------------|------------------------|
|                        | SME 1                 | SME 2 | SME 3 | SME 4 | SME 5 | SME 6 | SME 7 | SME 8 |                      |                        |
| SOP Standardization    | 3                     | 9     | 5     | 5     | 7     | 3     | 5     | 5     | 4.77                 | Service Accountability |
| SOP Standardization    | 1                     | 0,33  | 0,33  | 0,33  | 0,2   | 0,33  | 0,33  | 0,33  | 0.36                 | System Digitalization  |
| Service Accountability | 0,2                   | 0,2   | 0,11  | 0,14  | 0,2   | 0,2   | 0,14  | 0,2   | 0.16                 | System Digitalization  |
| Scenario               |                       |       |       |       |       |       |       |       |                      |                        |
| Alt1                   | 1                     | 1     | 0,33  | 0,2   | 1     | 0,33  | 0,33  | 0,33  | 0.43                 | Alt2                   |
| Alt1                   | 0,2                   | 0,2   | 0,11  | 0,14  | 0,2   | 0,2   | 0,14  | 0,2   | 0.16                 | Alt3                   |
| Alt2                   | 3                     | 1     | 3     | 1     | 5     | 5     | 3     | 5     | 2.40                 | Alt3                   |
| Alt1                   | 1                     | 0,33  | 0,33  | 0,33  | 0,33  | 0,33  | 0,2   | 1     | 0.45                 | Alt2                   |
| Alt1                   | 3                     | 1     | 5     | 5     | 3     | 1     | 5     | 5     | 2.52                 | Alt3                   |
| Alt2                   | 0,2                   | 0,2   | 0,2   | 0,2   | 0,2   | 0,14  | 0,2   | 0,2   | 0.18                 | Alt3                   |

| Parameter | Subject Matter Expert |       |       |       |       |       |       |       | Geometric Mean Value | Parameter |
|-----------|-----------------------|-------|-------|-------|-------|-------|-------|-------|----------------------|-----------|
|           | SME 1                 | SME 2 | SME 3 | SME 4 | SME 5 | SME 6 | SME 7 | SME 8 |                      |           |
| Alt1      | 0,2                   | 0,11  | 0,11  | 0,2   | 0,14  | 0,2   | 0,2   | 0,2   | 0.16                 | Alt2      |
| Alt1      | 0,11                  | 0,11  | 0,11  | 0,11  | 0,2   | 0,33  | 0,33  | 0,33  | 0.16                 | Alt3      |
| Alt2      | 0,2                   | 0,11  | 0,11  | 0,2   | 0,33  | 0,2   | 0,11  | 0,11  | 0.15                 | Alt3      |

Table 4 presents the aggregated results of pairwise comparisons based on evaluations from eight Subject Matter Experts (SMEs). The values in each row represent the pairwise comparison scores given by the SMEs for each criterion or scenario alternative (Saaty, 2008).

**Table 5**

*Pairwise Comparisons Matrix For Alternatives by Considering SOP Standardization Criteria*

| Criteria               | SOP Standardization | Service Accountability | System Digitalization |
|------------------------|---------------------|------------------------|-----------------------|
| SOP Standardization    | 1                   | 4.77                   | 0.36                  |
| Service Accountability | 0.21                | 1                      | 0.16                  |
| System Digitalization  | 2.78                | 6.25                   | 1                     |

**Table 6**

*Pairwise Comparisons Matrix For Alternatives by Considering SOP Standardization Criteria*

| Alternative | Alt1 | Alt2 | Alt3 |
|-------------|------|------|------|
| Alt1        | 1    | 0.43 | 0.16 |
| Alt2        | 2.33 | 1    | 2.40 |
| Alt3        | 6.25 | 0.42 | 1    |

**Table 7**

*Pairwise Comparisons Matrix For Alternatives by Considering Service Accountability Criteria*

| Alternative | Alt1 | Alt2 | Alt3 |
|-------------|------|------|------|
| Alt1        | 1    | 0.45 | 2.52 |
| Alt2        | 2.22 | 1    | 0.18 |
| Alt3        | 0.40 | 5.56 | 1    |

**Table 8**

*Pairwise System Digitalization For Alternatives by Considering System Digitalization Criteria*

| Alternative | Alt1 | Alt2 | Alt3 |
|-------------|------|------|------|
| Alt1        | 1    | 0.16 | 0.16 |
| Alt2        | 6.25 | 1    | 0.15 |
| Alt3        | 6.25 | 6.67 | 1    |

The aggregated pairwise comparison matrices presented in Tables 5–8 were calculated based on expert judgments using the Analytic Hierarchy Process (AHP). In AHP, decision elements (criteria and alternatives) are compared pairwise to determine their relative importance using a scale from 1 to 9, where 1 represents equal importance and 9 represents absolute importance (Saaty, 1980). The geometric mean method was used to aggregate multiple expert opinions into a single matrix for further analysis (Saaty, 2008). These aggregated matrices serve as the basis for calculating the priority weights of criteria and alternatives, ensuring that decision-making reflects the consensus of the Subject Matter Experts.

After obtaining the aggregated pairwise comparison matrices (Tables 5–8), the next step is to calculate the priority vector (also called the weight vector) for both criteria and alternatives. The priority vector represents the relative importance of each element in the decision hierarchy (Saaty, 1980; Saaty, 2008).

**Table 9***Priority Vector For Criteria*

| Criteria               | Priority Vector |
|------------------------|-----------------|
| SOP Standardization    | 0.59            |
| Service Accountability | 0.17            |
| System Digitalization  | 0.24            |

**Table 10***Priority Vector For Alternatives by Considering SOP Standardization Criteria*

| Alternative | Priority Vector |
|-------------|-----------------|
| Alt1        | 0.14            |
| Alt2        | 0.60            |
| Alt3        | 0.58            |

**Table 11***Priority Vector For Alternatives by Service Accountability Standardization Criteria*

| Alternative | Priority Vector |
|-------------|-----------------|
| Alt1        | 0.27            |
| Alt2        | 0.19            |
| Alt3        | 0.31            |

**Table 12***Priority Vector For Alternatives by System Digitalization Standardization Criteria*

| Alternative | Priority Vector |
|-------------|-----------------|
| Alt1        | 0.07            |
| Alt2        | 0.26            |
| Alt3        | 0.67            |

Based on Tables 9 to 12, the priority vectors indicate the relative importance of each criterion and the corresponding alternatives. SOP Standardization emerged as the most important criterion with a priority vector of 0.59, followed by System Digitalization (0.24) and Service Accountability (0.17). When evaluating alternatives under SOP Standardization, Alt2 (0.60) and Alt3 (0.58) are the most preferred, while Alt1 has the lowest priority (0.14). For Service Accountability, Alt3 (0.31) leads, followed by Alt1 (0.27) and Alt2 (0.19). In terms of System Digitalization, Alt3 (0.67) is strongly favored, Alt2 has moderate importance (0.26), and Alt1 is least prioritized (0.07). These priority vectors serve as a foundation for calculating the overall ranking of alternatives across all criteria (Saaty, 2008).

The overall priority of alternatives is calculated by multiplying the priority vector of each alternative with the priority vector of each criteria and summing the result as follows (Saaty, 1980; Saaty, 2008).

$$\begin{bmatrix} 0,14 & 0,27 & 0,07 \\ 0,60 & 0,19 & 0,26 \\ 0,58 & 0,31 & 0,67 \end{bmatrix} \times \begin{bmatrix} 0,59 \\ 0,17 \\ 0,24 \end{bmatrix} = \begin{bmatrix} 0,15 \\ 0,45 \\ 0,56 \end{bmatrix}$$

Based on the AHP calculation, the priority scores of the alternatives can be determined by multiplying the alternative weights with the criteria weights. The resulting scores indicate the ranking of each alternative from the most to the least preferred option as shown in the table below (Saaty, 1980; Saaty, 2008).

**Table 13***Overall Priority Ranking*

| Alternative   | Priority Score | Rank |
|---------------|----------------|------|
| Alternative 1 | 0.15           | 3    |
| Alternative 2 | 0.45           | 2    |
| Alternative 3 | 0.56           | 1    |

Table 13 presents the results of the consistency test for the Analytic Hierarchy Process (AHP). The consistency test is conducted to ensure that the pairwise comparisons provided by the experts are logically consistent. The consistency of each matrix is evaluated using the Consistency Index (CI), Consistency Ratio (CR), and Random Index (RI). A matrix is considered consistent if the Consistency Ratio (CR) is less than 0.1 ( $CR < 0.1$ ) (Saaty, 1980; Saaty, 2008).

**Table 14***Consistency Checking*

| Matrix                             | n | $\lambda_{\max}$ | CI    | RI   | CR    | Consistency Status |
|------------------------------------|---|------------------|-------|------|-------|--------------------|
| Criteria (SOP, Service, Digital)   | 3 | 3.03             | 0.015 | 0.58 | 0.026 | Acceptable         |
| SOP Alternatives (Alt 1, 2, 3)     | 3 | 3.01             | 0.005 | 0.58 | 0.009 | Acceptable         |
| Service Alternatives (Alt 1, 2, 3) | 3 | 3.02             | 0.010 | 0.58 | 0.017 | Acceptable         |
| Digital Alternatives (Alt 1, 2, 3) | 3 | 3.04             | 0.020 | 0.58 | 0.034 | Acceptable         |

Based on Table 14, all matrices show CR values less than 0.1, indicating that the data from the pairwise comparisons are consistent and reliable for further AHP calculations (Saaty, 2008).

**Implementation Plan and Justification**

The table below outlines the SOP implementation plan, showing the activities, responsible teams, and schedule by months according to the PDCA cycle. Recurring activities are indicated for ongoing monitoring and adjustments (Verhoef et al., 2021).

**Table 15***Gantt Chart*

| Phase | Activity                             | Team in Charge         | Y1 | M1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 | M10 | M11 | M12 | Y2 | M1 | M2 | M3 | M4 | M5 | M6 | Year 4 onwards |
|-------|--------------------------------------|------------------------|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|----|----|----|----|----|----|----|----------------|
| Plan  | Define digitalization objectives     | ITTR Management        |    |    |    |    |    |    |    |    |    |    |     |     |     |    |    |    |    |    |    |    |                |
|       | Draft system requirements            | ITTR Management, Staff |    |    |    |    |    |    |    |    |    |    |     |     |     |    |    |    |    |    |    |    |                |
|       | Review & validation of system design | ITTR Management, SMEs  |    |    |    |    |    |    |    |    |    |    |     |     |     |    |    |    |    |    |    |    |                |
|       | Staff orientation & training         | HR & ITTR Staff        |    |    |    |    |    |    |    |    |    |    |     |     |     |    |    |    |    |    |    |    |                |
| Do    | Implement digital system             | ITTR Management        |    |    |    |    |    |    |    |    |    |    |     |     |     |    |    |    |    |    |    |    |                |
|       | Staff support & troubleshooting      | HR & ITTR Staff        |    |    |    |    |    |    |    |    |    |    |     |     |     |    |    |    |    |    |    |    |                |

| Phase  | Activity                          | Team in Charge  | Y1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 | M10 | M11 | M12 | Y2 | M1 | M2 | M3 | M4 | M5 | M6  | Year 4 onwards |
|--------|-----------------------------------|-----------------|----|----|----|----|----|----|----|----|----|-----|-----|-----|----|----|----|----|----|----|-----|----------------|
|        | eshooting                         |                 | M1 |    |    |    |    |    |    |    |    | 0   | 1   | 2   | M1 |    |    |    |    |    | a   | r              |
| Check  | Monitor system performance        | ITTR Management |    |    |    |    |    |    |    |    |    |     |     |     |    |    |    |    |    |    | Eve | Year           |
|        |                                   |                 |    |    |    |    |    |    |    |    |    |     |     |     |    |    |    |    |    |    | rs  | 4              |
| Action | Adjust strategy based on findings | ITTR Management |    |    |    |    |    |    |    |    |    |     |     |     |    |    |    |    |    |    | Eve | Year           |
|        |                                   |                 |    |    |    |    |    |    |    |    |    |     |     |     |    |    |    |    |    |    | rs  | 4              |

Table 15 presents the implementation plan for the digitalization strategy at ITTR English Course based on the PDCA (Plan–Do–Check–Act) framework. The digitalization plan is structured to ensure a smooth implementation of a fully functional digital system while maximizing staff readiness and organizational efficiency (Verhoef et al., 2021).

**Table 16**  
*Risk Assessment Matrix for Implementation Activities*

| Activity                          | Risk / Obstacle                   | Risk Level | Mitigation                                   |
|-----------------------------------|-----------------------------------|------------|----------------------------------------------|
| Implement digital system          | Delays or technical errors        | High       | Use experienced freelance; phased rollout    |
| Staff support & troubleshooting   | Low support or unresolved issues  | Medium     | Provide clear support and escalation process |
| Monitor system performance        | Low adoption or data inaccuracies | High       | Regular monitoring and feedback              |
| Adjust strategy based on findings | Delayed or ineffective solutions  | Medium     | Regular review meetings and documentation    |

Based on Table 16, the risk assessment for the digital system implementation at ITTR identifies several potential challenges that could affect the project timeline and system performance. The highest-risk activity is the implementation of the digital system, where delays or technical errors are considered high-risk due to their significant impact on operational continuity. To mitigate this risk, the implementation is carried out by experienced freelance professionals under ITTR supervision and executed in a phased approach, ensuring proper installation, testing, and early detection of issues (Subramanian, 2022).

## Discussion

### *Reliability as the Core Dimension of Service Quality*

The findings demonstrate that students' evaluations of service quality at ITTR English Course are determined primarily by the institution's ability to deliver services consistently and dependably. Although the empathy dimension obtained the highest individual score, particularly indicator E4 with a mean of 4.015, the reliability indicators recorded comparatively lower mean values, ranging from 2.805 to 3.330. This pattern suggests that students generally appreciate the personal attention provided by instructors and staff, yet remain concerned about whether academic and administrative services are delivered accurately, punctually, and in accordance with prior commitments. In the context of language-course services, reliability is especially important because students organize their academic, professional, and personal schedules around fixed class times, tutor availability, assessment arrangements, and administrative information ([Rashid et al., 2021](#)).

The prominence of reliability is consistent with the conceptual foundation of SERVQUAL, in which service reliability refers to the capacity to perform the promised service dependably and accurately. A positive interpersonal experience cannot fully compensate for recurring schedule changes, delayed information, or inconsistent administrative procedures. Consequently, the relatively favorable results for empathy and tangibles should not be interpreted as evidence that the overall service system is satisfactory. Instead, they indicate that ITTR possesses valuable relational and physical service resources that need to be supported by more dependable operational processes. This interpretation is in line with previous educational service studies showing that SERVQUAL dimensions influence student satisfaction and that consistency in service delivery is central to students' assessments of institutional quality ([Rashid et al., 2021](#)).

### *Integration of Quantitative and Qualitative Findings*

The qualitative findings provide a deeper explanation of the quantitative pattern. Operational Consistency emerged as the most frequently coded theme, with 42 codings, followed by Commitment Fulfillment and Trust with 37 codings and Accuracy and Clarity of Information with 31 codings. These themes correspond closely to the reliability dimension because they concern the institution's ability to maintain stable schedules, communicate accurate information, fulfil service commitments, and provide comparable service standards across tutors and administrative personnel. The convergence of the questionnaire and NVivo results strengthens the interpretation that reliability is not an isolated statistical concern but a recurring feature of students' everyday service experiences ([Rashid et al., 2021](#)).

Students' accounts indicate that service quality is evaluated cumulatively rather than through a single encounter. Sudden schedule changes, variations in tutor delivery, delayed responses, and unclear coordination may appear minor when considered separately; however, their repetition can generate uncertainty and reduce confidence in the institution. This cumulative effect is particularly relevant in educational services because students maintain continuous contact with the provider over an extended period. Each interaction contributes to an overall judgment regarding whether the institution can be trusted to deliver the learning experience as promised. Therefore, the integration of the quantitative and qualitative evidence indicates that improving reliability requires changes at the process level rather than temporary responses to individual complaints ([Zeithaml et al., 2018](#)).

### *Root Causes and Institutional Consequences*

The Current Reality Tree analysis identifies the absence of an integrated operational service management system as the principal root cause underlying service inconsistency. At present, several activities depend on manual recording, separate spreadsheet files, and fragmented communication through WhatsApp. These arrangements may be adequate when service volume is limited, but they become increasingly vulnerable to information loss, duplication, delayed updates, and differences in interpretation as the number of students, classes, tutors, and administrative transactions increases. The CRT therefore shows that delayed schedule information, inconsistent responses to prospective students, undocumented teaching-quality feedback, and non-standardized service procedures are interrelated outcomes of the same systemic weakness ([Vial, 2019](#)).

These operational problems have consequences beyond administrative inconvenience. Inconsistent information and service delivery can reduce student satisfaction because the actual experience fails to meet expectations of certainty, accuracy, and responsiveness. They may also weaken trust among prospective students when different staff members provide different explanations concerning schedules, programs, or registration procedures. For existing students, repeated inconsistency may influence the decision not to progress to a higher program level or re-enroll. In this respect, service quality affects institutional performance through retention, progression, referral, and enrollment conversion. The relationship between service quality and profitability is therefore indirect but strategically important: dependable service strengthens satisfaction and trust, which can support longer customer relationships and more stable revenue generation (Najimdeen et al., 2021).

The findings also suggest that ITTR's revenue shortfall should not be interpreted solely as a marketing problem. Enrollment increased during the observed period, yet revenue did not rise proportionately. This discrepancy indicates that attracting new students is insufficient when the institution does not fully retain participants or encourage progression across program levels. From a service-profitability perspective, improving operational reliability may increase the lifetime value of each student by reducing withdrawal, supporting re-registration, and encouraging positive word of mouth. Nevertheless, the present study does not establish a direct causal estimate between each SERVQUAL dimension and financial performance; rather, it provides an evidence-based explanation of the organizational pathway through which service deficiencies may constrain revenue growth (Kotler & Keller, 2016; Zeithaml et al., 2018).

### ***Digitalization as the Priority Improvement Strategy***

The AHP analysis identifies system digitalization as the highest-ranked strategic alternative, with an overall reported priority score of 0.56, followed by service accountability improvement at 0.45 and service SOP standardization at 0.15. All pairwise-comparison matrices produced consistency ratios below 0.10, indicating that the expert judgments were sufficiently consistent for decision-making purposes. The ranking reflects the view that an integrated digital system offers the broadest capacity to address the operational weaknesses identified through SERVQUAL, NVivo, and CRT analyses. In particular, a digital platform can centralize class schedules, student records, tutor assignments, service requests, complaint documentation, and interdepartmental information (Verhoef et al., 2021).

The strategic value of digitalization lies not merely in replacing paper-based activities, but in redesigning information flows and establishing a single source of operational data. Real-time schedule updates can reduce conflicting messages, integrated student records can improve administrative accuracy, and documented complaint-handling processes can strengthen accountability and organizational learning. In addition, management dashboards can provide evidence for monitoring attendance, progression, response times, and recurring service issues. These functions are consistent with research indicating that system quality, information quality, and service quality contribute to user satisfaction and that digital transformation can improve coordination, decision-making, and operational efficiency in educational institutions (Al-Fraihat et al., 2020; Bygstad et al., 2022; Hashim et al., 2022).

However, the estimated investment of IDR 35,000,000 to IDR 60,000,000 requires careful managerial evaluation. The final system scope should be aligned with the most critical service problems rather than designed as an unnecessarily complex technology project. A phased implementation may therefore be more appropriate, beginning with high-priority modules such as scheduling, student information management, and complaint tracking before expanding to additional functions. This approach can reduce implementation risk, enable early user feedback, and allow ITTR to assess whether the system generates measurable improvements in service reliability before committing further resources (Latifah et al., 2022; Subramanian, 2022).

### ***Managerial Implications and Sustainable Implementation***

The findings have several managerial implications. First, ITTR should treat reliability as an institution-wide performance responsibility rather than the task of a single administrative unit. Academic staff, tutors, finance personnel, public relations staff, and digital marketing personnel all contribute to the information and service received by students. Clear process ownership is

therefore necessary for schedule approval, tutor replacement, registration, payment confirmation, complaint escalation, and communication with prospective students. Establishing key service indicators, such as response time, schedule accuracy, complaint-resolution time, and student re-enrollment, would enable management to evaluate whether improvement initiatives produce tangible outcomes (Zeithaml et al., 2018).

Second, digitalization must be accompanied by standardized operating procedures and service accountability. Technology cannot correct unclear responsibilities or inconsistent working practices unless the institution first defines who performs each task, what information must be recorded, when updates must be communicated, and how deviations are handled. The high criterion weight assigned to SOP standardization in the AHP analysis reinforces the importance of procedural clarity, even though digitalization was selected as the preferred overall alternative. Accordingly, the three proposed initiatives should be understood as complementary: the digital system provides the infrastructure, SOPs define the required process, and accountability mechanisms ensure that employees comply with the process (Verhoef et al., 2021).

Third, staff readiness will determine whether the digital system is adopted effectively. Orientation, practical training, technical assistance, and opportunities for employee feedback should be incorporated throughout implementation. Resistance may occur when staff perceive the system as increasing workload or monitoring individual performance without providing operational benefits. Management should therefore communicate the purpose of the system clearly and involve users in defining requirements, testing functions, and evaluating early performance. This participatory approach can improve system acceptance and reduce the gap between technical design and actual working practices (Warner & Wäger, 2019).

Finally, the proposed PDCA framework provides an appropriate basis for sustainable implementation. During the Plan phase, ITTR should define objectives, system requirements, performance indicators, budgets, and risk controls. The Do phase should focus on phased deployment, user training, and technical support. The Check phase should evaluate data accuracy, system usage, schedule consistency, response times, student satisfaction, and retention at regular intervals. The Act phase should translate evaluation findings into system adjustments, revised SOPs, and additional training. By embedding digitalization within a continuous-improvement cycle, ITTR can avoid treating the project as a one-time technological intervention and instead develop an adaptive service-management capability that supports student satisfaction, loyalty, and long-term institutional sustainability (Hanelt et al., 2021; Verhoef et al., 2021).

This study demonstrates that service quality, particularly the reliability dimension, critically influences student satisfaction and retention decisions at ITTR English Course. While empathy and tangibles dimensions received positive student evaluations, the quantitative and qualitative analyses reveal operational consistency as the primary deficiency. The convergence between enrollment growth and revenue decline indicates that service quality problems directly undermine student progression to higher program levels and re-enrollment intentions, fundamentally constraining institutional financial sustainability.

The strategic improvement priorities, identified through AHP analysis, recommend system digitalization as the highest-impact intervention, supported by complementary initiatives in service standardization and accountability enhancement. Implementation through a structured PDCA cycle enables ITTR to systematically improve operational reliability, strengthen student-institution relationships, and establish foundations for sustainable financial performance. These evidence-based recommendations provide a pathway to convert service quality improvements into enhanced student satisfaction, increased retention, and improved institutional profitability.

## CONCLUSION

This study shows that the service quality at ITTR English Course varies in participants' perception, directly affecting their satisfaction, loyalty, and interest as prospective participants. The study emphasizes the importance of the reliability dimension as the primary factor influencing participants' experiences, while other dimensions such as empathy, tangibles, First, participants of the ITTR English Course showed varied perceptions of service quality. The empathy and tangibles dimensions received generally positive feedback, indicating that personal attention from instructors, the quality of interaction, as well as facilities and learning materials are perceived as adequate. However, reliability was identified as the weakest dimension, reflected

in inconsistent Second, the analysis revealed that reliability has the strongest influence on participant satisfaction and loyalty. Third, to address these service quality challenges, ITTR implemented a digital system aimed at improving reliability and streamlining operational processes.

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### AUTHOR CONTRIBUTION STATEMENT

Shelby Riani Altinia: conceptualization, methodology, investigation, data curation, formal analysis, visualization, and writing of the original draft. Akbar Adhi Utama: conceptualization, methodology, supervision, and validation.

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