

Service Management Strategy at the Bengkulu City Environmental Laboratory UPTD

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ABSTRACT

This study analyzes service management strategies at the Environmental Laboratory Technical Implementation Unit (UPTD) in Bengkulu City to improve service quality and competitiveness. This research was driven by challenges such as limited human resources, inadequate infrastructure, and interlaboratory competition. A qualitative descriptive method was used, with data collected through observation, interviews, and questionnaires. The analysis was conducted using SWOT, Internal Factor Evaluation (IFE), and External Factor Evaluation (EFE). Findings indicate strengths include KAN accreditation, competent personnel, and affordable costs, while weaknesses include budget constraints and manual data systems. Opportunities lie in increasing demand and stricter regulations, although competition from private laboratories remains a threat. IFE and EFE scores (2.892 and 2.8968, respectively) place the organization in the "maintain and maintain" quadrant. Recommended strategies include improving human resource competency, expanding KAN accreditation parameters, implementing laboratory digitalization, and improving sample collection services. These steps are expected to increase customer trust and strengthen the competitiveness of laboratories in Bengkulu City.

INTRODUCTION

The Bengkulu City Environmental Laboratory plays a vital role in providing accurate technical data for decision-making related to environmental management, from surface water quality testing to industrial waste management. This technical data is crucial for evidence-based pollution monitoring and ecosystem protection. To remain relevant in the era of international standards, the laboratory is required to adhere to the quality management requirements of SNI ISO/IEC 17025:2017 and Regulation of the Minister of Environment and Forestry No. P.23 of 2020. Compliance with these regulations serves as a key benchmark for ensuring the legal validity and credibility of test results at the public level.

Studies on laboratory management methods have actually been conducted quite a lot, such as research by Pujiastuti and colleagues (2022) which highlights the implementation of

the ISO 17025 quality management system to improve laboratory competitiveness, as well as research by Sya'ban (2020) which discusses the effectiveness of public services in local government institutions.

Both provide important insights into the operational foundations and governance quality of government institutions. However, there is a gap in previous research (gap analysis), as these studies generally emphasize the technical aspects of laboratory testing supported by a stable budget. Very little research addresses public service management methods at city-level Technical Implementation Units (UPTD) in developing regions, which face dual challenges: stringent KAN accreditation requirements on the one hand, and limited infrastructure and human resources on the other.

This phenomenon demonstrates a literature gap regarding how regional public agencies survive amidst complex operational constraints. The scientific novelty of this research lies in the application of a SWOT analysis tailored to the unique characteristics of the Regional Technical Implementation Units (UPTD) in Bengkulu City to develop applicable strategies amidst existing limitations. This approach allows for strategy formulation that is directly rooted in real-world conditions.

The problem that then arises is how to formulate a service strategy that maintains excellence despite limited budget and manual facilities. Based on this gap, this study aims to describe the service strategy implemented at the Bengkulu City Environmental Laboratory Technical Implementation Unit (UPTD), analyze its supporting and inhibiting factors, and evaluate its contribution to sustainable service quality improvement.

RESEARCH METHODS

This research is a descriptive qualitative study that aims to understand the phenomenon of the research subject holistically through the description of words in a specific natural context (Moleong, 2018). In line with the view of Sugiyono (2020), this method is used to examine the condition of natural objects where the researcher acts as a key instrument with an inductive data analysis technique that emphasizes meaning rather than generalization. The research was conducted in February 2026 at the UPTD Environmental Laboratory of Bengkulu City located on Jl. WR. Supratman No. 8A, Bentiring Permai Village, Muara Bangka Hulu District, Bengkulu City.

The data used includes primary and secondary data. Primary data was obtained directly from primary sources through field observations, in-depth interviews with informants at the research sites, and questionnaires to answer the research objectives (Umar, 2014; Sugiyono, 2020). Meanwhile, secondary data was collected from indirect sources such as operational reports, archives, official documents of the Regional Technical Implementation Unit (UPTD), laws and regulations related to environmental laboratories, and supporting literature such as SWOT analysis reference books and previous research journals (Kuncoro et al., 2018; Sugiyono, 2020).

Data collection techniques were carried out through triangulation, combining observations to assess field conditions (Moleong, 2019), interviews to elicit respondents' opinions (Sugiyono, 2020), and questionnaires to collect supporting data for the instrument. Furthermore, data analysis techniques used the SWOT method to evaluate the organization's internal and external conditions as a basis for strategy formulation (David, 2023). This analysis helps the organization identify its strategic position based on strengths, weaknesses, opportunities, and threats (Pearce et al., 2007; Rangkuti, 2017), which are then integrated into an evaluation matrix to generate applicable service management strategy recommendations.

The informants in this study were selected through purposive sampling, selecting individuals with a deep understanding of the governance and services at the Bengkulu City Environmental Laboratory Technical Implementation Unit (UPTD), such as the laboratory head, technical staff, and service user representatives. Data validity was assessed through credibility, with extended observation and peer discussion to ensure the objectivity of the findings. All stages were designed to ensure that the strategic recommendations resulting from the IFE, EFE, and IE matrix analysis were not only theoretically sound but also highly applicable in the field.

RESULTS AND DISCUSSION

Based on the results of the internal factor analysis, the Bengkulu City Environmental Laboratory UPTD has 13 main strengths, dominated by competent human resources, KAN accreditation, strategic location, and affordable analysis costs. However, there are 10 weaknesses that need attention, especially related to the workload that is not commensurate with the number of personnel, the still manual data system, and the limited fleet of operational vehicles for sampling. The calculation results on the *Internal Factor Evaluation* (IFE) matrix show a total score of 2.8982. This figure indicates that internally, the organization is in an average position in utilizing strengths to cover existing weaknesses.

Table 1. Internal Factor Evaluation (IFE) Matrix

Internal Strategic Factors	Weight	Rating	Score
Strengths			
1. KAN Accreditation and Testing Quality	0.10	4	0.40
2. Competent and Responsive Human Resources	0.09	4	0.36
3. Affordable and Transparent Fees	0.08	4	0.32
4. Advanced and Complete Equipment	0.08	3	0.24
5. Strategic Location in the City Center	0.07	4	0.28
Weaknesses			
1. Manual Data Processing System	0.15	1	0.15
2. Limited Sampling Vehicle Fleet	0.12	2	0.24
3. Workload is not commensurate with human resources	0.11	2	0.22
4. Operational Budget Limitations	0.10	2	0.20

Internal Strategic Factors	Weight	Rating	Score
5. Some of the equipment is old	0.10	2	0.20
Total IFE Score	1.00		2,892

External factor analysis revealed 11 significant opportunities, such as increasing environmental regulations and high demand for laboratory testing for AMDAL or PROPER requirements. Meanwhile, 10 threats stemmed from competition from private laboratories and dependence on regional budgets (APBD). The *External Factor Evaluation* (EFE) matrix yielded a total score of 2.8968, indicating that management was sufficiently responsive in seizing opportunities and anticipating external threats.

Table 2. *External Factor Evaluation* (EFE) Matrix

External Strategic Factors	Weight	Rating	Score
Opportunities			
Increasing public awareness and business actors	0.06	3	0.18
Waste, water, air and noise testing requirements	0.07	4	0.28
Data requirements for AMDAL, UKL-UPL, PROPER	0.08	4	0.32
Potential sources of Regional Original Income (PAD)	0.06	3	0.18
Increased government regulation and oversight	0.07	4	0.28
Status as an official regional government laboratory	0.05	3	0.15
Ease of fulfilling environmental obligations	0.04	3	0.12
High demand for KAN accreditation parameters	0.06	4	0.24
Increasing awareness of environmental quality	0.04	3	0.12
Opportunities for online systems and e-reports	0.05	3	0.15
Opportunity to add new test parameters	0.05	3	0.15
Threats			
Competition between private and other government labs	0.06	2	0.12
Ever-increasing customer expectations	0.04	3	0.12
High costs of accreditation and certification	0.05	2	0.10
Dependence on regional budget (APBD)	0.07	2	0.14
High prices of chemicals and reagents	0.05	2	0.10
Risk of declining customer trust	0.04	3	0.12
Very rapid technological developments	0.03	2	0.06
Limited service coverage	0.03	3	0.09
Risk of HR resignation due to work status	0.05	2	0.10
A less flexible bureaucratic system	0.05	2	0.10
Total EFE Score	1.00		2,8968

By integrating the IFE and EFE scores into the *Internal-External* (IE) matrix, the Bengkulu City Environmental Laboratory UPTD is in Quadrant V (Maintain and Maintain).

This position indicates optimal service conditions but requires strengthening in market penetration and service development strategies. *The Strength-Opportunity (SO) strategy focuses on improving KAN-accredited testing services, while the Weakness-Opportunity (WO) strategy prioritizes system digitization through e-reports and submitting additional fleet budgets. The Strength-Threat (ST) and Weakness-Threat (WT) strategies are directed at maintaining the accuracy of test results to maintain customer trust amidst fierce competition.*

Qualitatively, customer response to the laboratory's administrative and technical services was assessed as excellent, communicative, and responsive. However, obstacles were encountered in the field sampling process, which frequently experienced delays due to inadequate operational vehicles and the need for improved discipline in field staff. Future management strengthening should emphasize synchronizing the laboratory's already superior technical quality with timely field service delivery.

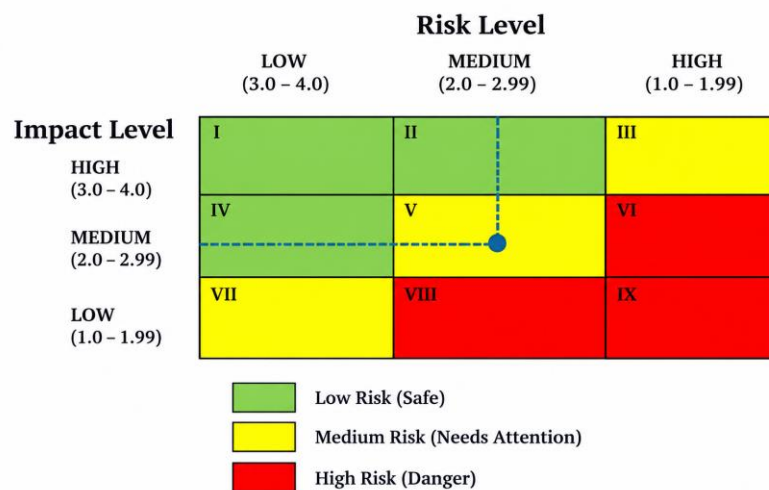


Figure 1. Internal-External (IE) Matrix of UPTD Environmental Laboratory Bengkulu City
Source: Research Findings (2026)

Based on the integration of the IFE (2.892) and EFE (2.8968) matrix values, the Bengkulu City Environmental Laboratory Technical Implementation Unit (UPTD) is in the "Maintain and Maintain" position. This position indicates that the current service conditions have been running optimally, both in terms of administration and the quality of sample parameter testing results. This is supported by positive customer perceptions who consider the laboratory personnel to be very friendly, communicative, and responsive. Other advantages that are the main attraction are the strategic location in the city center, cost transparency without illegal levies, adequate equipment, and analytical results that are considered fast and accurate.

Even in optimal conditions, organizations still need to strengthen human resources (HR) by increasing competency and clarifying the status of key employees to prevent the risk of resignation. In addition, the addition of KAN-accredited test parameters is an urgent need to increase organizational credibility, considering that accreditation status is an absolute

requirement for companies in preparing environmental reports such as UKL/UPL, Amdal, and SPPL. The high market demand for accredited parameters from the industrial sector is a strategic opportunity for laboratories in facing competition with private laboratories and other regional laboratories in Bengkulu City.

On the other hand, laboratory quality management has been implemented well and accurately, but gaps are still found in the sampling service aspect. Delays in sampling schedules often occur due to inadequate operational vehicles and the still-unresponsive response of field officers. Therefore, improving time management, increasing officer discipline, and updating the sampling transportation fleet are crucial steps that must be addressed immediately to maintain overall customer satisfaction.

CONCLUSION AND SUGGESTIONS

Conclusion

This study concludes that the Bengkulu City Environmental Laboratory Technical Implementation Unit (UPTD) has successfully mapped internal and external conditions comprehensively to determine the organization's strategic position. The analysis of internal and external factors indicates that the organization's primary supporting factors lie in its ownership of local government legitimacy and its accreditation status from the National Accreditation Commission (KAN), which guarantees testing quality. Meanwhile, the main obstacles faced include limited operational budget allocation, the lack of integration of digital data processing systems, and limited sampling fleet facilities. Based on the integration of IFE (2.892) and EFE (2.8968) scores, the organization's position is in Quadrant V (*Hold and Maintain*). This position indicates that overall governance and the quality of testing results have been running well, but requires strengthening in market penetration and operational efficiency.

Suggestion

Based on this strategic position, the policy suggestions and recommendations provided for the management of the Bengkulu City Environmental Laboratory UPTD are as follows:

1. Development of Accredited Services and Parameters: Gradually increasing the number of KAN-accredited test parameters in line with the high demand from the industrial sector and the preparation of environmental documents (AMDAL, UKL-UPL, PROPER) to expand market reach.
2. System Modernization and Digitalization: Encourage the modernization of the administrative service system from manual-based to integrated data processing through *e-reports* and online services to accelerate the delivery of test results to customers.
3. Improving Fieldwork Sampling Services: Making fundamental improvements to the management of field sampling services, which includes the procurement/renewal of an adequate operational transportation fleet and improving the work discipline of officers.

4. Strengthening and Developing Human Resources: Continuously improving employee technical competency through certified training, as well as paying attention to the clarity of the work status of key personnel to mitigate the risk of *resignation* .

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