
Analysis of Customer Satisfaction Level Laboratory Services Health in Semarang City

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Abstract

Health laboratories are health service facilities that play an important role in supporting promotive, preventive, diagnostic, and curative efforts through accurate and quality laboratory examinations. Customer satisfaction is one of the main indicators in assessing the quality of health laboratory services. This study aims to analyze the level of customer satisfaction with services at the *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) in 2025. This study uses a quantitative design with an analytical observational approach and a cross-sectional design. The research population is all customers who visit *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) during 2025 as many as 4,036 people. A sample of 108 respondents was determined using the Slovin formula with accidental sampling technique. Data collection was carried out in September-December 2025 using a closed questionnaire modified from the Community Satisfaction Survey in accordance with the Ministerial Regulation of PANRB No. 14 of 2017. The data is analyzed univariately to illustrate the level of customer satisfaction. The results of the study showed that most of the respondents expressed satisfaction with the laboratory services, judging from the suitability of service requirements and procedures, the reasonableness of the cost, the competence and behavior of the officers, and the quality of facilities and infrastructure. However, there are still aspects that need to be improved, especially in the speed of service time and the customer complaint handling system which is considered not optimal. Overall, the level of customer satisfaction with the services of the *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) is in the good category. Continuous improvement of service quality, especially in terms of service speed and complaint management, is expected to improve overall customer satisfaction.

Keywords: customer satisfaction, health services, health laboratories, service quality

INTRODUCTION

The implementation of public services is an obligation that must be carried out in line with the expectations and demands of all citizens and residents to improve the quality of services. In the face of dynamics and rapid changes in development activities, especially in the field of public services, a wise attitude is needed through sustainable and continuous efforts to build public trust and support the realization of national development. (1).

Service is an effort to facilitate those provided in connection with the buying and selling of goods and services. According to the Regulation of the Minister of State Apparatus Empowerment (PermenPAN), public services are all service activities organized by public service providers as an effort to meet the needs of service recipients and the implementation of the provisions of laws and regulations (3). The characteristics of public services are that they cannot choose consumers, their role is limited by laws and regulations, politics institutionalizes conflicts, accountability is complex, very often researched, all actions must be justified, goals and outputs are difficult to measure or determine.

The satisfaction level is a function of the difference between perceived performance and customer expectations. If the performance provided is below expectations, then customers will feel disappointed. On the other hand, if the employee's performance is in accordance with customer expectations, then the customer will feel satisfied. Service is an intangible activity or series of activities that occur as a result of interaction between consumers and employees or other elements provided by service provider organizations. These services aim to meet the needs and solve problems faced by consumers (4). There are five main criteria used to determine the quality of service. First, reliability, which is the ability of officers to provide services precisely, accurately, and consistently in accordance with the standards that have been set. Second, responsiveness, namely the willingness and ability of officers to respond and serve customer needs and complaints quickly and appropriately. Third, assurance, which includes the ability, knowledge, and skills of officers in providing services so as to foster trust and security for customers. Fourth, empathy, which is the personal attention and concern given by officers to customers in the service process. Fifth, physical evidence (tangibles), which is tangible aspects that can be seen directly, such as the availability of service facilities, waiting rooms, neatness and cleanliness of spatial layout, as well as neatness and cleanliness of officers in providing services (5).

Based on data from the World Health Organization (WHO), the average level of satisfaction with laboratory services in various countries grouped by continent shows relatively high results. The European continent recorded a satisfaction rate of 93%, with Germany as the country with the highest satisfaction rate, at 98%. In the Americas, the satisfaction rate reaches 94%, with the United States being the country with the highest satisfaction rate of 97%. Australia recorded a satisfaction rate of 90%, while the Asian continent showed a satisfaction rate of 81%, with Korea being the country with the highest satisfaction rate of 93% (7).

Satisfaction is a condition when a person's needs and expectations are met. Customers who are satisfied with the service they receive tend to return to use the same facilities or services (8). In addition, satisfaction is also related to the implementation of the code of ethics and the fulfillment of professional service standards, which are important indicators in controlling service quality while supporting the sustainability of the marketing of service services in the laboratory. (9). An agency can suffer losses if it experiences a decrease in the number of consumers, so customer satisfaction must always be a concern (10).

Based on the results of the initial search for public reviews on the Google Review digital platform, complaints were still found submitted by users of the *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) service. The complaints are related to waiting times that are considered too long, the attitude of officers who are considered unfriendly, lack of clarity on examination procedures, and inadequate waiting room facilities. In addition to online media, several reprimands and inputs are also often submitted directly by customers and patients to the laboratory. This shows that there is still a gap between the quality of service expected by customers and the service received in the field.

These problems are an important signal for institutions to conduct systematic evaluations. Without structured measurement, customer complaints will only be partial information that is difficult to translate into a remediation policy. Therefore, an instrument that is able to describe customer perception and experience more objectively is needed, one of which is through the dissemination of customer satisfaction questionnaires. This questionnaire is expected to be a forum for service users to submit their assessments honestly.

The results of measuring customer satisfaction levels are very important as a basis for the preparation of recommendations for continuous quality improvement. By knowing which aspects of services are still weak, the *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) can set intervention priorities, both in the form of improving officer competence, improving the service flow system, and developing infrastructure facilities. Customer satisfaction-based evaluation is also in line with the principles of public service that are oriented to the needs of the community and improving the quality culture in the health facility environment.

Based on the above background, the study aims to find out how customer satisfaction is *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory), find out what obstacles are

factors for customer satisfaction, and find out what efforts are to provide customer satisfaction of *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory).

METHODS

This study is a quantitative research with an analytical observational design using a cross-sectional approach. The population in this study is all patients who visited the Semarang City Regional Health Laboratory for the period January to December 2025 as many as 4036 customers. The sample size in this study was determined using the slovin formula with a margin of error of 10% so that a minimum sample number of 100 respondents was obtained with a sample reserve of 8 respondents so that the total sample in this study was 108 respondents. Sampling in this study was carried out in the period from September to December

The instrument used in this study is in the form of a closed questionnaire modified from the guidelines of the Community Satisfaction Survey (Permen PANRB No. 14 of 2017) and adjusted to the characteristics of health laboratory services. Sampling in this study was selected using accidental sampling techniques. The inclusion criteria in this study are respondents who are over 17 years old and willing to become research respondents. Meanwhile, the exclusion criteria in this study are respondents who do not fill out the questionnaire completely.

The variables explored and analyzed in this study include the socio-demographic of the respondents and the level of satisfaction with the respondents' services using the likert scale in the range of 1-4. This study was analyzed by a univariate statistical test using Pearson Product Moment analysis.

RESULT

Based on the findings of the study, the level of service satisfaction at the *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) of the Semarang City Health Office from September to December 2025, as many as 108 respondents filled out a questionnaire in printed form which was distributed directly. The data was used to describe the level of customer satisfaction with health services at the *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) during the observation period. The description of socio-demographic characteristics will be described in table 1 below.

Table 1. Frequency Distribution of Respondent Demographics

Respondent Characteristics		Result	
		F	%
Gender	Male	51	47.2
	Female	57	52.8
Education	SD	3	2.8
	SMP	14	13.0
	SMA	36	33.3
	S1/S2/S3	55	50.9
Jobs	PNS	27	25
	TNI	6	5.6
	Police	6	5.6
	Private	25	23.1
	Self-employed	28	25.9
Age	Stuttgart	16	14.8
	Late Teens- Early Adults	57	52.8
	Late Adult- Early Elderly	51	47.2

Based on Table 1. The results of the analysis of the demographic frequency distribution of respondents found that respondents were dominated by the female gender as many as 57 people (52.8%). Judging from the level of education, most of the respondents have a higher education background (S1/S2/S3), which is 55 people (50.9%). Based on the job category, the respondents worked the most as self-employed as 28 people (25.9%), followed by the civil servant group as many as 27 people (25%). Meanwhile, based on age characteristics,

respondents were dominated by the age group of late adolescents to early adulthood with a total of 57 people (52.8%), while the age group of late adulthood to early elderly amounted to 51 people (47.2%). This shows that the majority of service users in this unit come from the productive age group with a fairly good level of education.

Table 2. Frequency Distribution of Respondent Satisfaction Levels

Question Components	Results	
	F	%
Conformity of Service Requirements		
Inappropriate	0	0
Less Suitable	6	5.6
Conform	55	50.9
Highly Appropriate	47	43.5
Ease of Service Procedure		
Not Easy	0	0
Less Easy	5	4.6
Easy	58	53.7
It's Very Easy	45	41.7
Speed of Time		
Not Fast	0	0
Less Fast	18	16.7
Fast	46	42.6
Very Fast	44	40.7
Reasonableness of Fees/Rates		
Very Expensive	1	9
Quite expensive	8	7.4
Cheap	99	91.7
Free	0	0
Service Product Conformity		
Inappropriate	0	0
Less Suitable	2	1.9
Conform	71	65.7
Highly Appropriate	35	32.4
Conformity of Service Requirements		
Highly Incompetent	0	0
Incompetent	4	3.7
Competent	61	56.5
Highly Competent	43	39.8
Officers' Behavior in Service		
Very rude and friendly	0	0
Disrespectful and unfriendly	3	2.8
Polite and Friendly	60	55.6
Very Polite and Friendly	45	41.7
Quality of facilities and infrastructure		
Not good	0	0
Enough	18	16.7

Good	46	42.6
Excellent	44	40.7
Handling of Service User Complaints		
None	0	0
Exists but doesn't work	18	16.7
Less than optimal functioning	46	42.6
Well managed	44	40.7

Based on table 2 of the analysis results regarding the frequency distribution of respondents' satisfaction levels as a result of the suitability of service requirements with the type of service, data was obtained that the majority of respondents gave a positive assessment. A total of 55 respondents (50.9%) stated Appropriate, and as many as 47 respondents (43.5%) stated Very Appropriate. Meanwhile, there were only 6 respondents (5.6%) who gave an assessment of Less Appropriate. Overall, these results show that most respondents (94.4%) consider that the services provided are in accordance with the type of services provided. This indicates that the required administrative procedures are not an obstacle for customers to access services.

The results of the analysis regarding the ease of service procedures showed that most of the respondents felt that the service procedures in this unit were very easy. A total of 58 people (53.7%) rated it Easy and 45 people (41.7%) rated it Very Easy. Overall, 95.4% of respondents were satisfied with the flow of services. This figure proves that the procedures implemented are practical and efficient. Only a small part, namely 5 people (4.6%), feel that the procedure is still not easy. This shows that the bureaucratic system or service stages in the unit have been running very well.

The results of the analysis on the speed of time showed that most of the respondents felt that the service in the laboratory was fast 46 people (42.6%), followed by very fast 44 people (40.7%), and not fast 18 people (16.7%). Overall, 82.6% of respondents were satisfied with the speed of service time.

The results of the analysis regarding the fairness of costs or tariffs, almost all respondents felt that the cost burden incurred was very affordable. A total of 99 people (91.7%) stated that the service tariff is in the Cheap category. Meanwhile, only a small part, namely 8 people (7.4%) felt that the cost was quite expensive and one person (0.9%) gave a moderate rating. This indicates that the tariff set is very much in accordance with the economic ability of the community and is proportional to the services they receive.

The results of the analysis regarding the conformity between the accepted service products and the standards that have been set, the majority of respondents gave a very positive assessment. It was recorded that 71 respondents (65.7%) stated Appropriate and 35 respondents (32.4%) stated Very Appropriate. Overall, 98.1% of respondents showed that the results of the services provided to the community were very consistent and met existing service standards. This reflects that the quality of service has been running stably and transparently, so that public expectations for service results can be met properly.

The results of the analysis regarding the suitability of service requirements with the type of service, out of 108 respondents, there were 4 respondents (3.7%) who rated the service as incompetent, 61 respondents (56.5%) rated it competent, and 43 respondents (39.8%) rated it as very competent. This shows that most respondents give a positive assessment of the services received. Overall, as many as 96.3% of respondents assessed that the service was in the category of competent to very competent, so it can be concluded that the service requirements are in accordance with the type of service.

The results of the analysis of respondents' opinions on the behavior of officers in services related to politeness and friendliness, from a total of 108 respondents, it was obtained that as many as 3 respondents (2.8%) considered the officers to be less polite and friendly, 60 respondents (55.6%) considered the officers polite and friendly, and 45 respondents (41.7%) considered the officers to be very polite and friendly. This shows that most of the respondents gave a positive assessment of the officers' behavior in the ministry. Overall, the assessment of respondents who stated that officers were polite to very polite and friendly reached 97.3%, so it can be concluded that the behavior of officers in service has been assessed well by the majority of respondents.

The results of the analysis regarding the quality of facilities and infrastructure, most of the respondents gave a positive assessment. There were 46 people (42.6%) who rated Good and 44 people (40.7%) who rated Very Good. Overall, 83.3% of respondents were satisfied with the available support facilities. This shows that the physical facilities and supporting equipment in the service unit are feasible and able to provide comfort for the community. On the other hand, there are still 18 people (16.7%) who give an assessment of Sufficient. This

figure is a note that even though the current facilities are functioning well, maintenance and maintenance efforts still need to be considered so that the quality of service does not decline in the future.

The results of the analysis regarding the handling of complaints from service users, most of the respondents gave an assessment of the less than optimal functioning, namely 46 (42.6%) people, followed by 44 (40.7%) people being well managed. These findings indicate that there are still weaknesses in the complaint handling system, such as slow responses, lack of follow-up, or unclear complaint procedures perceived by service users.

DISCUSSION

Patient satisfaction is a state when the patient's wants, expectations and needs can be met.

The overview of the results of the study shows that the patients who visit the UPTD Health Laboratory more are female, which is 52.8% of patients, while the male gender is 47.2% of patients. This is in line with previous research that showed that women visit the laboratory more often than men(11). The age of patients who visited the health laboratory was early adolescent to late adolescent with a percentage of 52.8%. The most respondents' education was S1/S2/S3 as much as 50.9%. This is in line with previous research that states that educational characteristics can influence perceptions and expectations (12). The highest work of *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) patients is self-employed with a percentage of 25.9%.

Based on the results of the study, 50.9% of respondents felt that the services in the laboratory were appropriate. In this study, patients were satisfied with the services of the *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) in handling every complaint submitted by the patient.

The distribution of ease of service procedures showed that 53.7% of respondents found it easy to carry out service procedures in the Semarang City health laboratory. Based on the survey, UPTD Health Laboratories provide service procedures from the waiting room to the clinical laboratory for clinical patients, while for public health patients in the form of patients with the purpose of checking chemistry and microbiology laboratories provide service procedures from the waiting room to the counter for sample receipt.

The distribution of service time speed shows that 42.6% of respondents feel that the officers are fast in serving customers. Several studies in Indonesia show that wait time/speed of service is one of the important dimensions in measuring the quality of health services and affecting patient satisfaction. Research at the Gang Aut Health Center, Bogor, found that service speed and waiting time have a significant effect on patient satisfaction. Another study in primary facilities reported that wait times had a significant relationship with patients' perceptions of the quality of care. These findings support the results of this study, where some respondents feel that the speed of service at the *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) is faster than the patient's expectations(13)

The distribution of costs/rates in health laboratory services shows that 91.7% of respondents feel that services in Semarang City laboratories are cheap. Several previous studies in Indonesia have also shown that the perception of affordable service rates has a great influence on patient satisfaction and people's decision to use health facilities. For example, research at Dr. Mohamad Soewandhie Hospital Surabaya found that service rates have a significant relationship with patient satisfaction, and a study at Nur Hidayah Sharia Hospital Bantul shows that cost has a positive effect on patient satisfaction. These findings are in line with this study which found that 91.7% of respondents felt that the service cost/rate was cheap and affordable(12).

The distribution of the suitability of service products between those listed in the service standards and the results provided showed that 65.7% of respondents felt suitable. This study is in line with previous research which stated that in the Laboratory of Budhi Asih Hospital showed that most respondents assessed that laboratory services were in the good to very good category, especially in the aspects of reliability and accuracy of examination results. This indicates that when inspection procedures and service results are in accordance with operational standards, the perception of satisfaction and suitability of service will increase (14)

The distribution of the suitability of service requirements with the type of service showed that 56.5% of respondents felt that the officer was competent in matching the prerequisites with the type of service. Based on direct observation, the officers at the health laboratory are very friendly to customers.

Distribution related to the quality of facilities and infrastructure of the *UPTD Laboratorium Kesehatan Kota Semarang* (Semarang City Health Laboratory) 42.6% of respondents felt that it was good. Previous research in Indonesia showed that research at the Melong Asih Cimahi Health Center reported that the majority of respondents rated the facilities and infrastructure complete and decent, which was significantly associated

with patient satisfaction. Another study at Hermina Bogor Hospital also found a relationship between infrastructure facilities and outpatient satisfaction.(13)

The distribution of officer behavior in services related to politeness and friendliness showed that 55.6% of respondents felt that officers were polite and friendly. The research is also in line with research at the Sei Agul Health Center in Medan that competent health workers increase patient satisfaction where 56.5% of respondents feel that officers are competent in adjusting the requirements to the type of service (13).

The distribution of complaints from service users shows that as many as 42.6% of respondents feel that complaint handling exists but does not work. Complaint handling is an important component in the health service system, because complaints are a manifestation of patients' dissatisfaction with the services received and can be used as input to improve the quality of services(15).

Based on the results of the analysis above, there are several factors that can affect patient satisfaction. These factors are the characteristics of the patient, physical means, assurance, care and reliability. Patient characteristics are the characteristics of a person or the peculiarities of a person that distinguishes one person from another in the form of name, age, gender, educational background, ethnicity, religion, occupation and others. The physical facilities factor, namely physical evidence that can be seen, can include buildings, equipment, employee uniforms and communication facilities. The guarantee factor can be in the form of knowledge, ability, politeness, and trustworthiness that you have. The concern factor is the ease of building good communication between employees and clients, personal attention, and being able to understand customer needs. The last factor is reliability is the ability to provide the promised service quickly, precisely, accurately, and satisfactorily (11).

CONCLUSION

Based on the results of the study, it can be concluded that the level of customer satisfaction with the service at the *UPTD Laboratorium Kesehatan Kota Semarang* (Health Laboratory of Semarang City) is generally in the good category. Most of the respondents assessed that the service requirements and procedures were appropriate and easy, the service costs were affordable, the officers were competent and were polite and friendly, and the infrastructure facilities were considered quite good in supporting services.

However, there are still several aspects that need attention, especially the speed of service time and the handling of customer complaints which are considered not to be running optimally. Customer satisfaction is influenced by the characteristics of the patient, physical facilities, assurance, care, and reliability of the officers. Therefore, improvements in the aspects of service speed and complaint systems are expected to improve service quality and overall customer satisfaction.

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