Evaluation of Performance Measurement of Health Services: A Case Study In East Kalimantan

Submission received for Procedia Environmental Science, Engineering and Management

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Reviewers have now commented on your paper. You will see that they are advising that you revise your manuscript. If you are prepared to undertake the work required, I would be pleased to review a revision.

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For your guidance, reviewers' comments are appended below.
If you decide to revise the work, please submit a list of changes or a rebuttal against each point which is being raised when you submit the revised manuscript.
Your revision is due by 25 December 2021. In accordance with our format-free submission policy, an editable version of the article must be supplied at the revision stage. Please submit your revised manuscript files in an editable file format.

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Congratulations! On behalf of the Editorial of Procedia Environmental Science, Engineering and Management, we are pleased to inform you that your Paper has been accepted publication in 8 (2021), (4) 955-963 as per the recommendations given by the peer review group of experts.

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Tetra Hidayati[1]*, Suharno[2], Zainal Abidin[3]
[1,2,3]* Universitas Mulawarman, Samarinda 75119, Kalimantan Timur, Indonesia
Corresponding Author Email: Tetra.hidayati@feb.unmul.ac.id

Dear Hidayati,

We are pleased to accept your paper with the following details:

Author (s):
Tetra Hidayati[1]*, Suharno[2], Zainal Abidin[3]

Title:
EVALUATION OF PERFORMANCE MEASUREMENTOF HEALTH SERVICES: A
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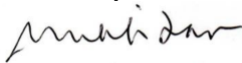
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Thank you for your contribution to International Journal on Procedia Environmental Science,
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Review 1

No	Revision	Information
1	Use numbering in Heading and Subheading	√
2	Figure captions are written before the figure	√
3	Fix formula writing	√
4	Separate numbered captions with enter 1pt	√

Review 2

1	Procedia Environmental Science, Engineering and Management template customization	√
2	Fix Grammatical error	√
3	References should be cited in the text in brackets (Harvard style)	√
4	Table fixed	√

Information: Improvements in articles are highlighted in yellow

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Development, ECOMONDO, 5th-8th November, 2014, Rimini, Italy

EVALUATION OF PERFORMANCE MEASUREMENTOF HEALTH SERVICES: A CASE STUDY IN EAST KALIMANTAN[*]

Tetra Hidayati[**], Suharno, Zainal Abidin

Universitas Mulawarman, Samarinda 75119, Kalimantan Timur, Indonesia
Corresponding Author Email: Tetra.hidayati@feb.unmul.ac.id

Abstract

Puskesmas (health centres) must provide comfort and safety to patients by empowering various health professions. This study aims to analyze the service performance strategy of the puskesmas. This research used the qualitative-quantitative descriptive method. This study involved 240 visitors from 24 health centres spread across Samarinda, Balikpapan, and Kutai Kartanegara, East Kalimantan, Indonesia. Data was obtained by providing questionnaires and documentation. This study used five leading indicators: reliability, responsiveness, assurance, empathy, and implementation of activities. The data were analyzed using Cartesian diagrams and a T-test to determine the relationship between services and patients' expectations at the health centre. The results showed that the service performance strategy of the puskesmas has been running well and following the patient's expectations. The study results are expected to provide an overview of services and patient expectations for related parties to improve health centre services. Good service will have an impact on the smoothness of treatment and patient health.

Keywords: community health center, patient satisfaction, public health, service performance, service strategy

1. Introduction

Community-based services are an essential component of high-quality health services in the community (Schwarz et al., 2019). The community health service centre or community health centre is an organization that represents the government as a continuous provider of health services. Medical services and professional nursing care, diagnosis, and treatment of various diseases patients suffer can be carried out at community health centres. As an organization with an essential role in

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[*] Selection and peer-review under responsibility of the AEAS Scientific Committee and Organizers

[**] Corresponding author: Tetra.hidayati@feb.unmul.ac.id

carrying out health service tasks, community health centres must provide patient satisfaction (Ernawati, 2020; Ernstmann et al., 2021; Kurniawan et al., 2019). Patient satisfaction is one indicator of the community health centre's ability to carry out its duties (Hussain et al., 2019). Patient satisfaction can be measured by comparing the performance and expectations of patients who have enjoyed the service (Pirade et al., 2019; Widayati et al., 2017). This satisfaction can be measured from reliability, responsiveness, empathy, assurance, and physical evidence.

Good communication between customers and health workers (doctors, officers) can improve service quality (Yang et al., 2020). So developing communication techniques is important for that (Jamaludin et al., 2019). Considering that mood affects the patient's healing rate, every health centre should create an atmosphere that makes patients feel comfortable using community health centre services. Starting when they arrive until the services needed have been met. Every community that enjoys community health centre services expects the officers to be ready when service hours occur. Medical service officers, administrative officers, and doctors are ready at the service, not waiting long (Fadhilah et al., 2020; Idwar et al., 2019; Kurilov, 2021). Leadership, management, and governance interventions play an important role in improving and creating responsive healthcare systems for patient satisfaction (Argaw et al., 2021; Asif et al., 2019). This situation can help inform patient-centred primary health care policy and management (Liu et al., 2021). The character of leadership and management, providing examples of good ethics and exemplary for community health centre employees (Jumintono et al., 2018).

In general, service quality is not easy to explain quantitatively, but it can be used in companies engaged in the health sector. Supporting factors to improve service quality need to be considered (Chen et al., 2020; Yuliawati et al., 2021). The five dimensions in looking at service quality (Sharifi et al., 2021), namely:

1) Reliability, confidence in the ability to provide goods and services as promised, such as punctuality quality with labels.

2) Responsiveness, which is in the form of a strong desire to help and provide the best possible service to customers (Nambisan et al., 2016; Topp and Chipukuma, 2016).

3) Tangibles (tangible) in the form of physical facilities, namely in the form of equipment and appearance of physical facilities and infrastructure such as lovely buildings, comfortable beds, as well as human resource personnel (Silva et al., 2018).

4) Assurance (guarantee or certainty), the ability to foster customer trust in the company.

5) Empathy, which is the individual attention given to consumers. Good service utilization can improve health system performance (Kapologwe et al., 2019; Suhail and Srinivasulu, 2021).

Until now, the condition of community health centres in East Kalimantan is still found in many community complaints related to the attitude of community health centre officers. They are starting from front-line officers to health care workers. Such as service times that are not right, service officers are still found who are not present on time, and waiting times are pretty long, officers provide unfriendly service. For this reason, it is necessary to analyze the performance of Puskesmas services, services and the formation of good strategies and innovations to create a Puskesmas that is comfortable for the community (Dahm et al., 2019; Dopp et al., 2019; Ukubassova et al., 2020). Innovation is needed because of the rapid development of technology (Dhakal et al., 2019).

Moreover, puskesmas are required to provide comfort and safety to patients by empowering various health professions. This study aims to analyze the performance strategy of puskesmas services. The measurement results are expected to provide an overview of the state of the puskesmas and become a reference material in improving the health centre service system.

2. Research method

This research uses the qualitative-quantitative descriptive method. This study involved 240 visitors from 24 health centres spread across Samarinda, Balikpapan, and Kutai Kartanegara, East

Kalimantan, Indonesia. Data was obtained by providing questionnaires and documentation. This study uses five leading indicators, namely reliability, responsiveness, assurance, empathy, and Facilities. The dimensions of the research are divided into 29 indicators. The reliability dimension consists of 5 indicators, the responsiveness dimension consists of 6 indicators, the assurance dimension consists of 6 indicators, the empathy dimension consists of 6 indicators, and the Facilities dimension consists of 6 indicators.

The data is processed with a multiple-item scale and a scale used to measure attitudes towards an object by asking questions. In addition, the measurement of service performance uses an assessment score which can be seen in Table 1.

Table 1. Respondent's rating category for performance and expectation variables

No	Performance	Score	Hope	Score
1	Very good	5	Very Important	5
2	Good	4	Important	4
3	Good Enough	3	Important enough	3
4	Not good	2	Less important	2
5	Bad	1	Not important	1

The answer criteria in the study are based on five assessments that can be seen based on Eq. (1).

$$\text{Range} = \frac{\text{Highest score} - \text{Lowest Score}}{\text{Number of questions}} = \frac{5-1}{5} = 0.8 \tag{1}$$

Measurement of distance values in research based on formula one can be seen in Table 2.

Table 2. Category score interval

No	Interval Skor			Information
1	1.00	-	1.80	Not good/not important
2	1.81	-	2.60	Not good/less important
3	2.61	-	3.40	Good enough/important enough
4	3.41	-	4.20	Not good/less important
5	4.21	-	5.00	Very good/very important

Analysis of the suitability of performance and expectations using Cartesian diagram analysis techniques, average, and t-test. Analysis of the suitability of service performance and expectations used the Cartesian analysis technique. Cartesian calculation formula is given by Eq. (2):

$$T_{kki} = \frac{Xi}{Yi} \times 100\% \tag{2}$$

where: Tki = Respondent suitability level

Xi = Service performance level assessment score

Yi = Score of consumer perception assessment of satisfaction

The placement of the analyzed data can be divided into four parts in the Cartesian diagram, which can be seen in Fig. 1.

Domains:

A: Top Priority. Shows factors or attributes that affect customer satisfaction, including service elements that are considered very important, but management has not implemented them according to customer desires. So disappointed or dissatisfied

B: Maintain performance. Shows the essential service elements that have been successfully implemented by the company, for that it must be maintained, it is considered very important and very satisfying

C: Low priority. Shows some factors that are less important for customers, the implementation by the company is mediocre. Considered less important and unsatisfactory

D: Excessive. Shows the factors that affect customers are less important, but the implementation is excessive, considered less important but very satisfying
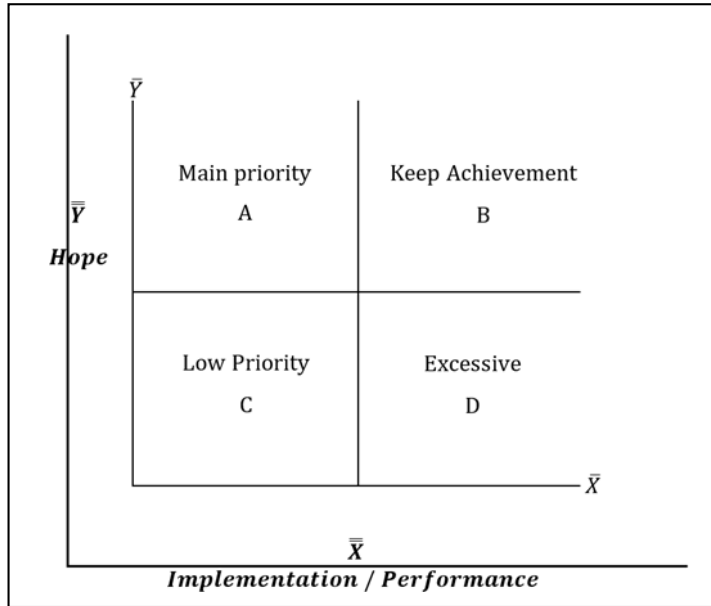

Fig. 1. Cartesian Diagram of patient performance and expectations (Supranto, 2001)

3. Result and discussion

3.1. Dimension measurement

The results of the study provide an overview of the strategic position of the five dimensions of service performance consisting of (1) reliability, (2) responsiveness, (3) assurance, (4) empathy, (5) physical evidence. The results of the measurement of the fifth dimension of the study can be seen in Table 3.

Table 3. Recapitulation of performance calculations and important

No	Reliability Statement	Service performance		
		Perform (X)	Hope (Y)	Tki
1	Reliability	3.90	4.06	96
2	Responsibility	3.93	4.03	98
3	Assurance	3.92	4.05	97
4	Empathy	3.96	4.08	97
5	Facilities	3.97	4.05	98
	Average	3.93	4.06	97

Based on Table 1, the value of puskesmas services has an average value of 3.93 which means good, and expectations have a value of 4.06 which means good. Service suitability shows a value of 97 which means it has a high suitability value because it is above 93%. Overall service performance is still lower than the value of the public interest. However, this difference does not appear to be significant. This result means that the service users have perceived that the service performance provided by the public health centre is considered good. This perception illustrates that, as a whole, community users of community health centre services have assessed the ability of public health centres to provide the promised health services that have met their expectations. Supporting service facilities such as the appearance of officers and other service facilities have been assessed to meet the community's wishes. The role of officers at health service centres has also provided services with special attention to service users.

The results also show that the community health centre has been able to foster self-confidence, so there is no worry when deciding to use health services. This condition is important considering that public trust in health services is a suggestion that greatly influences patient recovery (Isangula et al., 2018; Khullar et al., 2020; Shi et al., 2017). Patients who come also feel that they have received full attention from health care workers. Personal attention to the patient is an important thing that can make the patient feel comfortable. In addition, the attitude of nurses and medical personnel who show sympathy and empathy for patients will affect a patient's recovery.

3.2. Cartesian diagram

The dimensions of service based on the Cartesian diagram can be seen in Fig. 2. Figure 2 shows the results of the Cartesian analysis obtained by maintaining achievement, the dimensions included in this quadrant are empathy (4), low priority, the dimensions included in this quadrant are responsiveness (2) and assurance (3). Exaggerated, the dimensions included in this quadrant are physical evidence (5), and the main priority, the dimensions included in this quadrant, are reliability (1).
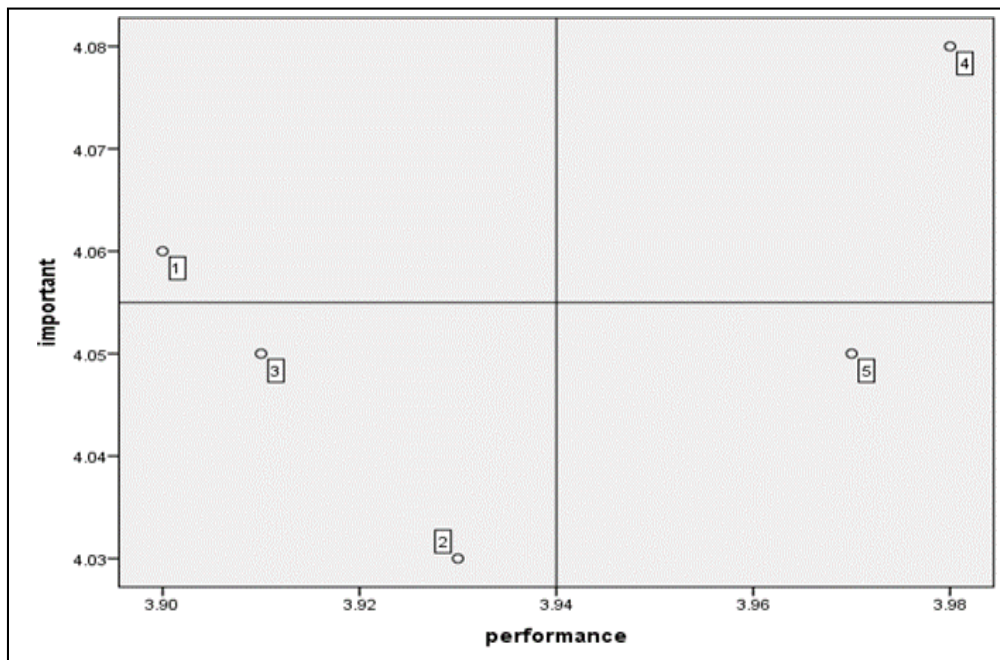

Fig. 2. Cartesian diagram of 5 service dimensions

The reliability dimension (1) in the top priority quadrant is interpreted as a quadrant that must be the primary concern because it is considered very important by the patient, and its implementation is still below expectations. Patients want every health care worker from the receiving officer to the doctor to do their job correctly. The empathy dimension (4) is in the maintain achievement quadrant. The patient considers his performance to be good and is considered important. This condition illustrates that community health centres in East Kalimantan have been able to carry out their duties well in the empathy dimension. Thus the public health centre must maintain and improve the performance that currently exists. The dimensions of responsiveness (2) and assurance (3) are in the low priority quadrant. This can be interpreted that responsiveness and assurance are a necessity that must be carried out by community health centres, not the main things that patients consider. Health care workers, including doctors, nurses, and other service personnel, should do their job well so that people will not doubt when visiting community health centres (Blanchard et al., 2021; Ernstmann et al., 2021). Patients also consider it not too much of a problem if they have to wait in the service of the community health centre. Thus, the current situation is considered sufficient by the patients who use the service. In the dimension of physical evidence (5), the patient considers that the availability of facilities and infrastructure such as waiting rooms, service rooms, service facilities, and employees' appearance has been assessed as good. However, this condition is not something that is a concern for patients in using health services.

The results of the 29 proxies indicators in each quadrant can be seen in Fig. 3.
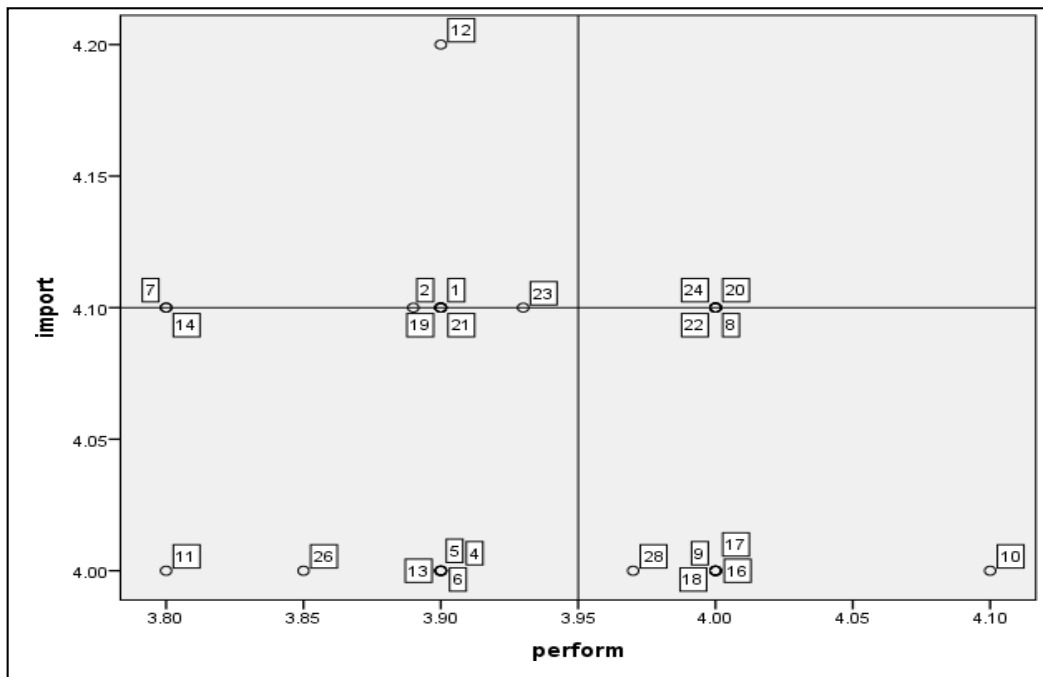
Fig. 3. Cartesian diagram of service performance indicators

Figure 3 shows a total of 29 indicators studied, each occupying a quadrant: (1) Overload: High performance - low importance: 9, 10, 16, 17, 18, 28, 27. (2) Low priority: Low performance - low importance 4, 5, 6, 9, 7, 11, 13, 15, 26. (3) Maintain achievement: High performance - high expectation 20, 24, 22, 8, 25. (4) Top priority: Low performance - high expectations 1, 2, 3, 14, 19, 21, 23, 12.

The public health centre should maintain the excessive quadrant, but it does not need to be prioritized because the existing ones are deemed sufficient. The low priority quadrant is an indicator that shows factors that are less important to customers. The health centre has done its job well. Puskesmas do not need to make improvements to this indicator. The Maintain Achievement quadrant is a quadrant that shows indicators that the Puskesmas have successfully implemented following patient expectations. Indicators in the quadrant must be maintained because they are considered very important, and their implementation has been good. The central priority quadrant is the quadrant that describes the indicators that still do not meet the patient's expectations. Indicators in this quadrant should be a top priority in improving health centre services.

3.3. t-Test results

Service performance and expectations t-test was conducted to determine the significant difference. The results of the t-test in the study can be seen in Table 4.

Table 4. Test the difference between service performance and importance

		N	Correlation	Sig.
Pair 1	Perform and hope	29	-0.139	0.471

Table 2 shows a significant value of 0.471, meaning there is no significant difference between service performance and expectations.

4. Conclusions

Service performance at the Puskesmas in the research location showed a good value category. Overall, there is no difference between service performance and patient expectations. The Puskesmas has been able to provide the performance expected by the community. The main objective of this research is the service performance strategy at Puskesmas in East Kalimantan. The test results show a significant value of 0.471 which means there is no real difference between the service and the expectations received by the patient.

The study results are expected to provide an overview of services and patient expectations for related parties to improve health centre services. Good service will have an impact on the smoothness of treatment and patient health.

Acknowledgment

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