International Journal of Health, Economics, and Social Sciences (IJHESS)
Vol. 8, No. 2, April 2026, pp. 1838~1843
DOI: 10.56338/ijhess.v8i2.11062
Website: https://jurnal.unismuhpalu.ac.id/index.php/IJHESS

Analysis of the Influence of the Efficiency of the Implementation of the Queue System in Improving the Quality of Administrative Services At the Hulonthalangi Health Center

Anak Agung Reduari[1*], Herlina Jusuf[2], Ulfa Aulia[3], Sarinah Basri K[4], Tri Septian Maksum[5]
[1-5]Jurusan Kesehatan Masyarakat, Fakultas Olahraga dan Kesehatan Universitas Negeri Gorontalo

*Corresponding e-mail: agungreduari@gmail.com

Article Info

Article history:
Received 12 Feb, 2026
Revised 29 Mar, 2026
Accepted 20 Apr, 2026

Keywords:
Queue System, Service Quality, Administration

ABSTRACT

The implementation of a good queue system can help manage the flow of services so that waiting time can be minimized and the service process becomes more orderly and efficient. This study aims to analyze the effect of the efficiency of the implementation of the queue system on the quality of administrative services at the Hulonthalangi Health Center. Type of quantitative research, analytical survey research method with cross sectional approach. The research population of all patients who performed administrative services at the Hulonthalangi Health Center in November was 867 patients. The number of samples using the Lemeshow formula was 236 respondents. The sampling technique in this study uses accidental sampling techniques. Data analysis was conducted using a Simple Linear Regression test. Based on the results of data analysis, a p-value = 0.000 (P<0.05) was obtained, so there was an influence between the implementation of the queue system and the quality of administrative services at the Hulonthalangi Health Center. The correlation coefficient value (R) of 0.897 shows a very strong influence, while the determination coefficient value (R^2) of 0.805 shows that the implementation of the queue system contributes 80.5% to the quality of administrative services. In conclusion, the implementation of the queue system can have a positive effect on the quality of administrative services at the Hulonthalalangi Health Center. Suggestion to the Puskesmas to continue to improve the management of the queue system so that administrative services to patients become more efficient.

INTRODUCTION

Health is a human right and one of the elements of welfare that must be realized in accordance with the ideals of the Indonesian nation. In Law No. 36 of 2009 concerning health, it is explained that the purpose of health development is to increase awareness, willingness, and the ability to live a healthy life for everyone in order to realize the highest degree of public health, as an investment in the development of socially and economically productive human resources which is the basic right of every citizen which must be fulfilled by the government through the provision of equitable facilities and services (Mariani et al., 2023).

One of the first-level health facilities that plays an important role in the implementation of health is the community health center (Puskesmas). The health center is one of the first level of facilities and service units that is closest to the community. Because the health center is the spearhead of basic health services. Puskesmas must be more qualified in dealing with public health problems that may spread from their own work areas to distant villages. Puskesmas was established with a number of requirements to support the national health system and support primary services in the field of health to the community, which is stated in the Regulation of the Minister of Health of the Republic of Indonesia No. 75 of 2014 concerning public health centers (Silaban et al., 2023).

Health services are very important for all people in Indonesia, because it is a basic need of the community and must be implemented regardless of the socioeconomic status of each individual. The government is committed to providing the best health services to the community so that the Indonesian people remain healthy. Services are considered competent or satisfactory if the service can meet the needs and expectations of the community (Scott, 2022).

Health administration services are a planning, implementation, and control activity, as well as the supervision and responsibility for the implementation of health development. Administrative services play a central role because they are the initial gateway that patients go through before getting medical services. Effective administrative services include the registration process, recording patient data, and managing the flow of services. If administrative services are carried out well, it will have an impact on patient satisfaction and positive perception of the overall quality of service. On the other hand, inefficient administrative services can cause long queues, slow down patient waiting times, and reduce the quality of health services (Na et al., 2019).

Knowing the quality of service, there are 5 indicators contained in the dimension of service quality, namely *Tangible* (physical evidence) such as employee equipment and communication facilities, comfort of the place to perform services, ease in the service process, and the use of aids in health services, *Realizability* (reliability) Namely in the form of the ability of an agency/company to provide services in accordance with the promised accurately and reliably, *Responsiveness* (Responsiveness) of the staff's desire to help customers and provide service responsively by responding quickly to every customer who wants to get service, *Insurance* (guarantee) includes the knowledge, ability, and politeness of employees in convincing customer trust by providing a guarantee of timely service, *Emphaty* (sympathy) ease in establishing good relationships and communication, personal attention, and understanding the needs of customers, such as putting the interests of customers first, serving customers with a friendly attitude with a polite attitude, serving officers by not discriminating (discriminating) between customers one another, and officers serving and respecting each customer (Hadi, 2024).

The queue system is a factor that affects the efficiency of administrative services. The queue system is a set of customers, services (counters) and a rule that regulates customer arrival and processes queue service problems, characterized by 5 components, namely the arrival pattern of customers, service patterns, number of services, capacity of facilities to accommodate customers and rules by which customers are served. Queue is a condition where there is a delay in the service of an object due to queues because the service is busy, queues occur due to an imbalance between availability and balanced needs to serve. Queues also often occur due to time differences between arrivals and different services (Krismayanti et al., 2025).

The queuing theory was first introduced in 1909 by A.K Erlang. Queue activities can occur due to the need for services beyond the capacity provided by the service or service facility, so that customers who come cannot immediately get services. With the queue, patients will be called based on the queue number obtained so that the activities at the health center can take place regularly (Anggryani et al., 2023).

Research Objectives

The purpose of this study is to analyze the effect of the efficiency of the implementation of the queue system on improving the quality of administrative services at the Hulonthalangi Health Center

RESEARCH METHODS

This research was carried out at the Hulonthalangi Health Center located on Jalan Karel Satsuit Tubun, Tenda Village, Hulonthalangi District, Gorontalo City. This research was carried out for 2 months, from December to January 2026. This type of research uses quantitative research with an analytical survey research method using *a cross sectional* approach. The research population is all outpatients who perform health administration services at the Hulonthalangi Health Center totaling 867 patients. With a sample of 236 respondents, it was determined using the Lemeshow formula and the sampling technique used was accidental sampling.

Data was collected using a questionnaire that has been tested for validity and reliability. Data analysis was carried out univariate and bivariate using a simple linear regression test to determine the influence of the queue system on the quality of administrative services.

RESULTS

Univariate Analysis

Distribution of the number of patients based on the implementation of the queue system

Table 1. Distribution of the Number of Patients Based on the Implementation of the Queue System

plementation of the queue system	**Total**	
	N	**%**
Less	8	3,4
Enough	134	56,8
Good	94	39,8
Total	**236**	**100,0**

Source : Primary Data, 2026

Table 1 of the number of patients based on the implementation of the queue system shows that out of a total of 236 respondents, most of the respondents assessed the implementation of the queue system to be in the sufficient category as many as 134 respondents (56.8%). Furthermore, as many as 94 respondents (39.8%) assessed

the implementation of the queue system to be in the good category, while the poor category was 8 respondents (3.4%).

Distribution of the number of patients based on the quality of administrative services

Table 2. Distribution of the Number of Patients by Quality of Administrative Services

uality of Administrative Services	Total	
	N	%
Less	3	1.3
Enough	111	47,0
Good	122	51,7
Total	**236**	**100,0**

Source : Primary Data, 2026

Table 2 of the number of patients based on the quality of administrative services shows that out of a total of 236 respondents, most respondents assessed the quality of administrative services to be in the good category as many as 122 respondents (51.7%). And in the sufficient category, as many as 111 respondents (47.0%). And only 3 respondents (1.3%) assessed the quality of administrative services to be in the poor category.

Classic Assumption Test

Normality Test Results

Table 3. Normality Test Results

	Sing Value.	Remarks
Residual	0.076	Normal

Source : Primary Data, 2026

Based on the results of the normality test using the Kolmogorov-Smirnov, a significance value of 0.076 was obtained, which was greater than 0.05. Shows that the residual is normally distributed, so that the assumption of normality is met.

Heteroscedasticity Test Results

Table 4. Heteroscedasticity Test Results

	Sing Value.	Remarks
Residual	0,664	leteroscedasticity does not occur

Source : Primary Data, 2026

Based on the results of the *heteroscedasticity* test, a significance value of 0.664 was obtained greater than 0.05. This shows that *heteroscedasticity does not occur* in the regression model.

Bivariate Analysis

The Effect of the Efficiency of the Implementation of the Queue System on the Quality of Administrative Services

Table 6. Simple Linear Regression Analysis

Models	Unstandardized Coefficients		Value t	Sig.
	B	Std. Error		
Konstata	14,610	1.434	10.190	),000
mplementation of the Queue System	0,971	0.031	31.056	),000

Source : Primary Data, 2026

Significance values of the table *Coefficients* In Table 4.10, a significance value of 0.000 can be obtained, the value is less than 0.05, so it can be concluded that the independent variable (the implementation of the queue system) has an effect on the dependent variable (quality of administrative services)

Table 7. Determination Coefficient Test Results

Models	R	R Square	Std. Eror
1	0,897	0,805	4.276

Source : Primary Data, 2026

Based on the results of table 7, a *correlation coefficient* value (R) of 0.897 was obtained which shows that the influence between the efficiency of the implementation of the queue system and the quality of administrative services is in the very strong category. The R Square value of 0.805 shows that the efficiency of the implementation of the queue system contributes 80.5% to the quality of administrative services, while the remaining 19.5% is influenced by other factors outside this study.

DISCUSSION

Efficiency of the implementation of the queue system at the Hulonthalangi Health Center

Based on the results of the study, a questionnaire given to 236 respondents was used to assess the implementation of the queue system consisting of 4 indicators, namely queue regularity, administrative waiting time, queue technology and queue facilities and infrastructure were in the sufficient category, namely as many as 134 respondents with a percentage (56.8%). This assessment shows that the queue system implemented has been running, but it is not fully optimal in supporting the smooth running of administrative services. And there are still respondents who consider that the implementation of the queue system has not run optimally, especially on several indicators that need to be improved. Administrative waiting time indicators and queue infrastructure are the aspects that respondents complain about the most, which can be caused by information regarding the estimated waiting time that has not been clearly conveyed, the insufficient number of seats for all patients and the internet network that still often hinders the registration process.

Furthermore, as many as 94 respondents with a percentage (39.8%) assessed that the implementation of the queue system was in the good category. This shows that some patients have felt regularity in the flow of services, including the clarity of the queue process and relatively orderly services. However, there are still certain aspects that need to be improved so that the queue system can run more efficiently.

Meanwhile, there were 8 respondents who assessed that the implementation of the queue system was in the category of lacking. This assessment shows that there are still obstacles in the implementation of the queue system, such as relatively long waiting times, limited queue facilities, and manual queue systems that have the potential to cause irregularities. This condition can have an impact on patient comfort.

According to research conducted by Astuti, (2022) about the analysis of the queue system. The results of the study showed that the queue system implemented was still experiencing a buildup of patients at certain peak hours, causing the patient waiting time to be quite long. The assessment also found that limitations in the regulation of service flows and the lack of optimal queue systems were the main factors affecting the smooth flow of patient services. In this study, it is concluded that a queue system that has not been optimally organized, especially those that are still simple and manual, can cause irregularities in the service process and reduce the efficiency of health services. This supports the results of this study which shows that the implementation of the queue system at the Hulonthalangi Health Center is in the sufficient category and still needs improvement, especially in managing the queue flow and controlling waiting times so that services can take place in an orderly manner.

Quality of Administrative Services at Hulonthalangi Health Center

Based on the results of the study, the quality of administrative services at the Hulonthalangi Health Center was in the good category, namely 122 respondents with a percentage (51.7%), this shows that the administrative services provided have been able to meet patient expectations in terms of service accuracy, officer attitude, and clarity of administrative procedures.

However, there are still respondents who assess the quality of administrative services in the sufficient category, namely as many as 111 respondents with a percentage (47.0%). This condition shows that administrative services still need to be improved, especially in terms of service speed and patient comfort during the administrative process. In addition, there were 3 respondents with a percentage (1.3%) who assessed that the quality of administrative services was still lacking. Although the number is relatively small, this shows that there are still patients who are dissatisfied with administrative services, which can be caused by delays in services and officers who have not been consistent in registration or still have errors in the registration process.

This research is in line with the theory of service quality put forward by Tjiptono, (2019) which states that service quality is the expected level of excellence and control over the level of excellence to meet customer needs. This shows that good service quality must be able to meet patient expectations both in terms of procedural accuracy, service speed and professional attitude of officers.

This research is in line with research conducted by Rorimpandey, (2021) the study states that the quality of public services is greatly influenced by the professionalism of officers, attitudes and behaviors in serving, ease of access to services, as well as the reliability and responsibility of administrative officers who are less responsive and less friendly can affect public perception of the quality of service as a whole.

The Effect of the Efficiency of the Implementation of the Queue System on the Quality of Administrative Services

Based on the results of the simple linear regression analysis in table 4.10, the value of constant (a) was obtained of 14.610 and the value of the regression coefficient (b) was 0.971 with a significance value of 0.000 smaller than 0.05. These results show that the efficiency of the implementation of the queue system has a positive and significant effect on the quality of administrative services at the Hulonthalangi Health Center.

Furthermore, based on Table 4.11, a correlation coefficient value (R) of 0.897 was obtained which shows that the influence between the efficiency of the implementation of the queue system and the quality of administrative services is in the very strong category. The R Square value of 0.805 shows that the efficiency of the implementation of the queue system contributes 80.5% to the quality of administrative services, while the remaining 19.5% is influenced by other factors outside of this study, such as workload which can also affect the quality of administrative services. Previous research by Kartono, (2025) shows that workload has a significant effect on the quality of service at the Bluto Sumenep Health Center. The results of the study found that workload has a significant positive coefficient on service quality, showing that the workload management of health workers is one of the important factors in improving the quality of services in health facilities.

CONCLUSION

Based on the results of the research conducted on the analysis of the effect of the efficiency of the implementation of the queue system in improving the quality of administrative services at the Hulonthalangi Health Center, the following conclusions can be drawn:

1. The efficiency of the implementation of the queue system at the Hulonthalangi Health Center shows sufficient conditions, but it still needs to be improved to be more optimal.
2. The quality of administrative services at the Hulonthalangi Health Center shows good conditions.
3. The efficiency of the implementation of the queue system has a positive and significant effect on improving the quality of administrative services at the Hulonthalalangi Health Center.

REFERENCES

Agiwahyuanto, F., Noegroho, F. H., Health, F., Dian, U., Middle, J., Health, F., Dian, U., & Middle, J. (2019). Service Quality Minimum Service Standards (SPM) Patient Registration at the Outpatient Registration Site (Tpprj) Ngaliyan Health Center, Semarang City 8(3), 210–216.

Anggryani, F., Pasien, P., Jalan, R., Puskesmas, D. I., & Malang, C. (2023). Analysis of the queue system to improve the effectiveness of outpatient services at the Cisadea Malang Health Center. 1(2), 18–25.

Anshary, R., Study, P., & Public, A. (2024). The effect of the quality of administrative services on community satisfaction at the North Amuntai sub-district office, North Hulu Sungai Regency. 1370–1379.

Partiana. (2022). Analysis of the MCU Service Queue System in Improving Service Time Efficiency at Arifin Achmad Hospital, Riau Province.

Baleendah, K. (2024). Supervision of the health office on the quality of health services at the health center in Rancamanyar village, Baleendah District 1. Sec. 8.

Dede, S. N. (2009). Analysis of Public Service Management at the Sindangkerta Health Center. 6681(7), 440–448.

Dewi Mulyati, Antrian, S., & Antrian, J. (2019). The model of the queue at the Puskesmas pharmacy wants jaya.

Fitria, I. J. (2023). Effectiveness and Efficiency of Health Services at the DTP Gununghalu Health Center. 11(1).

Fitriana, A. (2020). Analysis of queue regularity on waiting times at puskesmas counters. Journal of Health Administration.

Fikari, D. (2025). Design and build a patient queuing system at the Tanah Abang Health Center. Journal of Community Service, 4(4), 505-514.

Hadi, S., Doni, L. P., & Andi, M. A. (2024). The Effect of the Quality of Health Administration Services on the Patient Satisfaction Level of the Social Security Administration Agency for Contribution Assistance Recipients (BPJS BPI). 02(September), 182–192.

Hasibuan, A & Siregar, W. (2020). Analysis of Patient Queue System in Health Facilities. Health Service Management.

Ikhwan, A., Aziz, F. A., Tirta, M. P., Putri, W., & Utami, A. (2025). Design of a Queue Management Information System to Improve Efficiency at the Stabat Lama Health Center.

Indrawati, B. (2022). Servqual Analysis of Measurement of Service Quality and Consumer Satisfaction Level of the Bekasi City Health Office Budi Indrawati. 1:45–52.

Karundeng, J. O., Wasita, R. R. R., Mardona, Y., Natsir, M., Kafiar, R. E., Daryaswanti, P. I., & Sari, I. K. (2025). Puskesmas Management Textbook.

Kartono, K., Rusdiyanto, r., & Woro Utari, W. (2025). The Effect of Workload and Work Stress on Nurse Performance through the Quality of Nursing Services at the Bluto Health Center, Sumenep Regency. Journal of Management and Accounting Students, 4(1).

Khoirun, Nisa, R. (2026). Service Quality of Counter Queue System in Population Administration Services at Sidoarjo Regency Public Service Mall. 10(1), 117–126.

Krismayanti, M., Lesmono, D., & Salim, D. (2025). Analysis of the Queue System at the Dago Health Center with Simulation. 11(94), 101–113.

Lapodi, A. R., Sinay, H., Lating, Z., Ibrahim, I., & Adi, M. (2023). The Relationship between the Quality of Administrative Services and Patient Satisfaction in the Working Area of the Piru Health Center, Western Seram Regency in 2023. 1(4).

Mardewi, Muhammad Sarjan, Basri Information, S., Al, U., Mandar, A., Informatics, T., Al, U., Mandar, A., & Davis, K. R. (2022). Peqguruang: Conference Series. April, 1–6.

Mariani, T., Amira, A. P., Rahma, S., Agustina, D., Society, F. K., Study, P., & Health, I. (2023). Literature Review: Analysis of Patient Satisfaction With. 1(3).

Na, M., Health, M., Parepare, C., Milanda, S., & Ukkas, D. (2019). The Influence of the Queue and Service System in Increasing the Effectiveness of Outpatient Services at the Madising na Mario Health Center, Parepare City. 1(1).

Nurcahyo, A. (2011). Analysis of variables that affect employee performance at PT. Quadra Mitra Perkasa Balikpapan. 7(2), 1972–1982.

Nasution, A.S., & Mutia, S. (2017). Analysis of the queue system at the patient registration counter at the Padang Pasir Health Center, West Padang District. Journal of science and technology 17(2)

Purwaningsih, E., Amelya, A., Monica, V., Ananda, E. S., Fasya, F., Agustina, N., Mutiara, S., & Ibrahim, N. (2024). Evaluation of the waiting time for registration services at the Segiri Health Center, Samarinda City using fishbone diagrams. 5(1), 776–781.

Putra, S. P., Administration, A., & Sick, R. (2022). New York: Journal of Multidisciplinary Studies. 1(3), 24–30.

Profile of the Hulonthalangi Health Center. (2024)

Remba, N. G. (2024). Acc, 27/6/2024.

rohmial/ Journal of Finance and Business. (2019). A Study of Patient Satisfaction Due to the Queue System at the Pakjo Palembang Health Center. 72–95. https://doi.org/10.32524/jkb.v17i2.563

Silaban, D. C., Zulfin, M., Telecommunications, K. T., Elektro, D. T., Teknik, F., Sumatra, U., Usu, U., Antrian, S., & M, S. A. M. (2023). Performance Analysis of M/M/1 Queue System. 7(3), 165–170.

Tabalong, H. K. (2024). Http://jurnal.stiatabalong.ac.id/index.php/JAPB ISSN: 2723-0937.