



Analisis Hubungan Tingkat Ketercapaian *Key Performance Indicators* (KPI) dengan Kepuasan Pasien Apotek

Analysis of the Relationship between Key Performance Indicators (KPI) Achievement Level and Patient Satisfaction at Pharmacy

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ABSTRAK

Strategi pemasaran erat kaitannya dengan kepuasan pelanggan, karena tingkat kepuasan dan loyalitas yang tinggi memiliki dampak signifikan terhadap omzet apotek. Persepsi kualitas layanan mencerminkan sikap pelanggan secara keseluruhan terhadap keunggulan layanan. *Key Performance Indicator* (KPI) dalam layanan farmasi dikembangkan untuk mengevaluasi dan meningkatkan kualitas layanan, efisiensi, dan keamanan. Studi ini bertujuan untuk menentukan tingkat kepuasan pasien di apotek, menilai pencapaian KPI di kalangan manajemen apotek, dan menganalisis hubungan antara pencapaian KPI dan kepuasan pasien. Studi ini menggunakan metode deskriptif kuantitatif, dengan instrumen penelitian yang meliputi kuesioner SERVQUAL dan formulir observasi untuk indikator kinerja manajemen. Kuesioner SERVQUAL melibatkan 100 responden yang dipilih menggunakan *accidental sampling*. Instrumen tersebut telah diuji validitasnya ($r \geq 0.361$) dan reliabilitasnya (Cronbach's Alpha ≥ 0.600). Informan untuk pengamatan indikator kinerja adalah Kepala Farmasi, yang dipilih menggunakan *purposif* karena tanggung jawabnya dalam merencanakan, melaksanakan, dan mengevaluasi kinerja farmasi. Hasil menunjukkan skor SERVQUAL keseluruhan sebesar -0.345 , menunjukkan bahwa kualitas layanan tidak memenuhi harapan pasien. Indikator kinerja manajemen yang dihitung menggunakan KPI menghasilkan skor 53,79%, yang dikategorikan sebagai memadai. Uji korelasi Spearman menghasilkan nilai p sebesar 0,800 ($p > 0,05$) dan ρ sebesar $-0,200$, menunjukkan tidak adanya hubungan yang signifikan antara pencapaian KPI dan kepuasan pasien. Temuan ini menyarankan bahwa KPI yang digunakan terutama menilai aspek manajerial dan administratif, yang tidak secara langsung mewakili kualitas layanan yang dirasakan oleh pasien.

Kata kunci: Kepuasan Pasien, *Key Performance Indicators* (KPI), Indikator Kinerja Apotek, Apotek

ABSTRACT

Marketing strategies are closely tied to customer satisfaction, as high satisfaction and loyalty have a significant impact on pharmacy turnover. Perceptions of service quality reflect customers' overall attitudes toward service excellence. *Key Performance Indicators* (KPIs) in pharmaceutical services are developed to evaluate and improve service quality, efficiency, and safety. This study aimed to determine the level of patient satisfaction at Pharmacy, assess the achievement of KPI performance among pharmacy management, and analyze the relationship between KPI achievement and patient satisfaction. This study employed a quantitative descriptive method, utilizing research instruments that included a SERVQUAL questionnaire and an observation form for management performance indicators. The SERVQUAL questionnaire involved 100 respondents selected using *accidental sampling*. The instrument had been tested for validity ($r \geq 0.361$) and reliability (Cronbach's Alpha $\geq$

0.600). The informant for performance indicator observations was the head of Pharmacy, selected using purposive sampling due to their responsibility for planning, implementing, and evaluating pharmacy performance. The results showed an overall SERVQUAL gap score of -0.345 , indicating that service quality did not meet patient expectations. The management performance indicators calculated using KPIs yielded a score of 53.79%, categorized as sufficient. Spearman correlation testing yielded a p-value of 0.800 ($p > 0.05$) and a rho of -0.200 , indicating no significant relationship between KPI achievement and patient satisfaction. These findings suggest that the KPIs used primarily assess managerial and administrative aspects, which do not directly represent the service quality experienced by patients.

Keywords : Patient Satisfaction, *Key Performance Indicators* (KPI), Pharmacy Performance Indicators, Pharmacy

1. INTRODUCTION

Customer satisfaction is a crucial indicator of service quality, emerging as an emotional response based on customers' evaluations of their experiences. This perception reflects customers' overall view of service excellence, so that satisfaction can be understood as a subjective assessment of service quality from an individual perspective and based on individual needs. The level of satisfaction is formed by the difference between perceived service performance and customer expectations, which are typically influenced by the expectations regarding the service to be received. Therefore, the quality of service received is a significant factor in shaping the level of satisfaction, which, although subjective, can be measured quantitatively through a customer satisfaction index (Suprasetya & Nugroho, 2020).

In the context of healthcare services, Suprasetya & Nugroho (2020) identified five key dimensions that influence customer satisfaction. The first dimension, tangibles, encompasses physical facilities, equipment, the availability of medicines, and the appearance of staff. The second is reliability, which refers to the staff's ability to provide services accurately and on time. Third, responsiveness, which reflects the staff's readiness to respond to customer needs and provide accurate information. Fourth, assurance, which includes knowledge, skills, friendliness, and the ability to build customer trust. Fifth, empathy, which is the ability to establish effective communication, understand patient needs, and provide personal attention.

Key Performance Indicators (KPIs) are used to assess the performance of specific organizations, activities, or services. KPIs in pharmacy services serve to evaluate the quality, efficiency, and safety of services, as well as to help identify areas for improvement and support decision-making. Previous research shows that pharmacists' perceptions of KPIs are influenced by various factors, including barriers and enablers to implementation (de Souza et al., 2024).

An increasing population drives the growth of the pharmacy business in Indonesia, as heightened public health awareness, higher life expectancy, government support for health programs, and rising purchasing power contribute to this trend. Pharmacies not only serve as providers of medicine but also as competitive healthcare institutions, making innovation and marketing strategies focused on customer satisfaction very important. Customer satisfaction and loyalty have been proven to increase revenue and business sustainability (Pratama et al., 2022).

Pharmaceutical services are a form of direct and responsible care for patients, utilizing pharmaceutical preparations to achieve optimal therapeutic outcomes and enhance quality of life. This service requires the application of scientific knowledge to ensure the safety, effectiveness, and accuracy of drug use. With the increasing public demand for rational, effective, safe, available, and affordable therapy, pharmaceutical service strategies and programs must be oriented towards customer experience and needs (Fauziah & Nugraha, 2024; Ponangsera, 2013). Based on this, this study aimed to determine the level of patient

satisfaction at Pharmacy, assess the achievement of KPI performance among pharmacy management, and analysed the relationship between KPI achievement and patient satisfaction. The relationship between KPIs and patient satisfaction is important to examine to determine whether organizational performance is aligned with the quality of service perceived by patients. The research results can serve as a basis for evaluating and improving performance indicators to be more oriented toward service quality.

2. METHODS

2.1 Ethicals Approval

This research has obtained ethical approval from the Health Research Ethics Committee of the Faculty of Medicine and Health Sciences, Muhammadiyah University of Yogyakarta with Ethics Approval Number No. 319/EC-KEPK FKIK UMY/XII/2024 before the research was conducted.

2.2 Research Design

This study used a descriptive quantitative design. Data were collected through questionnaires and observations. Quantitative descriptive analysis summarized data in tables, graphs, and numerical measures such as mean and median. The study was conducted at the Pharmacy Study Program of Muhammadiyah University of Yogyakarta and UMY Pharmacy from April to July 2025.

2.3 Population and Sample

The population for patient satisfaction was all pharmacy patients, and for leadership performance indicators, it was the pharmacy head. Patient respondents were selected using accidental sampling, while leadership performance was sampled purposively based on relevant criteria. The minimum sample size for patients was 96, rounded to 100.

The Lemeshow formula was chosen because the exact number of patients visiting the UMY Pharmacy during the study period was unknown, making it suitable for calculating sample size in an unknown population. With a 95% confidence level, a proportion of 0.5, and a 10% margin of error, the minimum sample size was 96 respondents, which was then rounded up to 100 respondents to anticipate data loss.

$$\begin{aligned}
 n &= \frac{z^2 \cdot p(1-p)}{d^2} \\
 n &= \frac{1,96^2 \cdot 0,5(1-0,5)}{0,10^2} \\
 &= \frac{0,9604}{0,01} \\
 &= 96,04
 \end{aligned}$$

Description:

n = Number of samples

z = Standard value = 1.96

p = Maximum estimate = 50% = 0.5

d = alpha (0.10) or sampling error = 10%

2.4 Data Collection

Patient satisfaction was measured using the SERVQUAL questionnaire (five dimensions: reliability, responsiveness, assurance, empathy, tangibles). This SERVQUAL measurement tool has undergone validity and reliability testing, with an r value of $\geq 0,361$ and a Cronbach's Alpha value of 0,905 (Utami et al., 2020). Leadership performance data were collected via observation and interviews.

The KPI instrument consists of four indicators: process, output, outcome, and commitment to the organization. The KPI indicators were compiled based on the internal performance indicators of UMY Pharmacy, which have been used as management evaluation instruments. The KPI instrument was not subjected to statistical validity testing because it is a performance evaluation instrument officially used by UMY Pharmacy as part of its management monitoring and evaluation system.

2.5 Data Analysis

Patient satisfaction data was analysed using gap analysis with the formula: SERVQUAL gap value = Actual Score – Expected Score. If the result is negative, then the service has not met expectations. The performance achievement level of Pharmacy is calculated using the *Key Performance Indicators* (KPI) scale, which is calculated based on the formula: Performance, % = (value-Min)/(Max-Min) x 100% (Setiawan & Fauziah, 2020). The relationship between the two variables was analysed using the Spearman Correlation Test, with a significance level of $\alpha = 0.05$ (Arifin et al., 2022).

The correlation test used the Spearman test because both data are ordinal scale, not normally distributed, and the data was ranked (Arifin et al., 2022). *Key Performance Indicators* (KPIs) were categorized into four ranks, namely: 90 - 100 is very good; 75 - 89 is good; 50 - 74 is sufficient; and < 50 is poor. Furthermore, patient satisfaction levels were also categorized into four ranks, namely: 4 is very satisfied, 3 is satisfied, 2 is less satisfied, and 1 is dissatisfied. The satisfaction data of 100 patients was categorized into four categories: 4 are very satisfied, 3 are satisfied, 2 are less satisfied, and 1 is dissatisfied. These were then linked to four KPI ranking indicators: 90-100 is very good; 75-89 is good; 50-74 is sufficient; and <50 is poor.

3. RESULTS AND DISCUSSION

3.1 Respondent Characteristics

This study involved 100 respondents selected as a sample to obtain representative data on the characteristics of service users at the Pharmacy. Respondent characteristics analyzed in this study included several demographic variables, namely gender, age, marital status, highest level of education, and type of employment.

Based on the Table 1, the number of female respondents (57%) outnumbered male respondents (43%). This aligns with research conducted by (Putri et al., 2024), which found that a higher number of female patients visited pharmacies to purchase medication compared to male patients. The largest age group of respondents was 14-31 years old (53%). Research conducted by (Lovilia et al., 2024), found that with increasing age, individuals' awareness of the importance of health check-ups also tends to increase. The majority of respondents were married (63%), and According to research conducted by (Setiani et al., 2021), married patients tended to have higher levels of satisfaction with healthcare services. In terms of educational level, the majority of respondents had diploma/bachelor's/master's/doctoral degrees (52%). According to research conducted by (Lestari, 2021), the higher the level of education, the greater the breadth of knowledge and information. The most common type of employment for respondents was self-employed (22%). According to research

conducted by Lovilia et al., (2024), it was stated. that a person's type of work has a significant relationship with the level of income earned, so it also influences the individual's purchasing power.

Characteristics	Category	Frequency	Percentage (%)
Gender	Man	43	43
	Woman	57	57
Age	14-31 Years	53	53
	32-49 Years	30	30
	50-67 Years	17	17
Marital Status	Not Married	37	37
	Married	63	63
Level of Education	Junior High	6	6
	School/Equivalent		
	High School/Equivalent	42	42
Type of Work	Diploma/S1/S2/S3	52	52
	Student	21	21
	Civil	19	19
	Servants/Police/TNI		
	Self Employed	22	22
	Privat Sector	19	19
	Employee		
	Etc	19	19

Table 1. Respondents Characteristics

3.2 Service Quality Analysis (SERVQUAL)

The SERVQUAL (Service Quality) method is a measurement method that compares the performance of the service received (actual) with the service expected by patients. The difference between perceived (actual) and expected values indicates a gap in service quality. A negative gap value indicates that the quality of service provided has not met patient expectations and requires improvement (Gloriano & Nugraha, 2017).

Table 2. Average Gap Value Service Quality

Dimension	Average Gap
Reliability	-0,368
Responsiveness	-0,325
Assurance	-0,396
Empathy	-0,306
Tangible	-0,3325
Mean	-0,345

The SERVQUAL score calculation results in Table 2 show that all question attributes have a negative value, with an average overall gap of -0,345. This indicates that the pharmacy generally still fails to meet patient expectations, thus requiring improvement in service quality. Based on the table above, the dimension with the largest negative gap is Assurance, with a value of -0,396, indicating that this is a top priority area for improvement. The assurance dimension received the largest gap score because it relates to the accuracy and reliability of the drug information provided, the staff having sufficient knowledge and skills to provide drug information, and the availability of guarantees

in case of errors in drug information services. A larger gap score indicates that patient expectations regarding the competence and trust of staff are higher than the service they receive. This may be influenced by limited patient communication for more in-depth consultations with pharmacists. Meanwhile, the dimension with the smallest negative gap is Empathy, with a value of -0,306, indicating that the service provided in this dimension nearly meets patient expectations.

3.2 Importance-Performance Analysis (IPA)

The IPA is used to determine which attributes should be prioritized for improvement. This method maps the importance and performance of each service attribute onto a Cartesian diagram, thereby identifying priority areas for improvement (Serlamita Melida & Diah Pramestari, 2023).

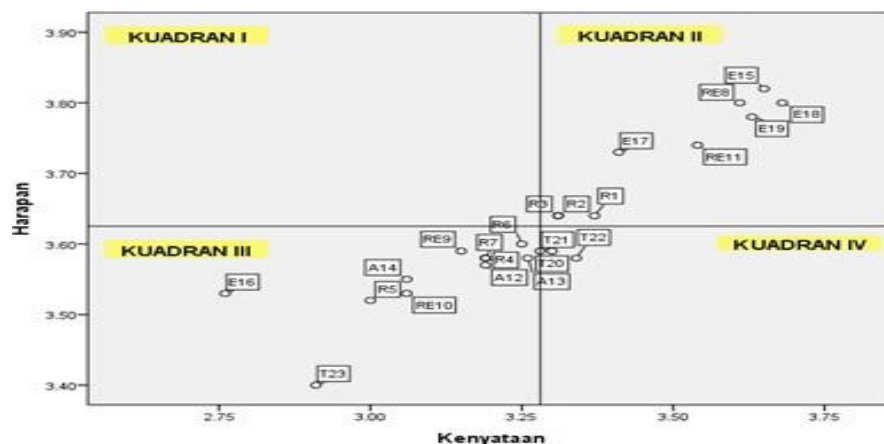


Figure 1. Cartesian Diagram IPA

The results of the mapping on the Cartesian diagram in Figure 1 revealed the following key findings. A positive finding from this study was that there were no attributes in Quadrant I (Top Priority). This means that no attributes were considered very important by patients, yet their performance was rated very low by Pharmacy. The main strength of Pharmacy's service lies in the attributes in Quadrant II (Maintain Achievement), where both importance and performance are equally high. Some examples of attributes in this quadrant are staff providing information on the name, dosage, and how to use medications (R1, R2, R3), staff responding quickly and responsively (RE8), and staff being friendly and polite (E18). Meanwhile, attributes in Quadrant III. (Low Priority) has an equally low level of importance and performance. Attributes in this quadrant are considered less important by patients and their performance is mediocre. For example, staff wear identification badges that are clear (E16) and available in brochure form (T23).

Table 3. Analysis of Key Performance Indicators

Indicator	Achievement Score	Category
Process (Management Ability)	81,81%	Good
Output (Ability to Achieve Goals)	33,33%	Poor
Outcome (Impact)	50,00%	Sufficient
Commitment to the Association	50,00%	Sufficient
Overall Average	53,79%	Sufficient

Based on the analysis on Table 3, the average achievement of the overall performance indicators of Pharmacy leaders was 53,79%, which falls into the Sufficient category. The highest performance was shown by the Process Indicator (Management Ability) with a score of 81,81% (Good), which reflects strengths in the aspects of planning, organizing, and supervision. Conversely, the lowest performance was found in the Output Indicator (Ability to Achieve Goals) with a score of 33,33% (Poor). The low achievement in this indicator was caused by several unmet targets, such as annual revenue targets and the number of followers on Instagram social media.

The number of social media followers is not intended as a direct indicator of the quality of pharmaceutical services, but rather as an indicator of organizational performance in promotion, health education, and public information outreach. Social media is a health communication tool that can increase public access to drug information and pharmacy services. Therefore, this indicator is positioned as an organizational KPI in the output domain, not as an indicator of the clinical quality of pharmaceutical services.

3.3 Analysis of the Relationship Between Key Performance Indicators (KPI)

Achievement levels and patient satisfaction to determine the relationship between variables, a bivariate analysis was conducted using the Spearman correlation test. The Spearman correlation test is a nonparametric statistical test for ordinal data. Nonparametric statistics are used when the data lacks parameter information, is not normally distributed, or is measured in rank form (Firdaus et al., 2020). This correlation test also requires that the data sources come from different subjects (Akbar et al., 2023). The symbol used for the Spearman correlation coefficient is ρ (rho). This test aims to assess the strength and direction of a monotonic relationship between two variables, without assuming a normal distribution in the analyzed data. In this method, the relationship is assessed based on the ranking of the data, with The value ranges from -1 to +1. A correlation of -1 indicates a perfect negative correlation, while a value of +1 indicates a perfect positive correlation (Nurhalijah et al., 2024). An analysis of the relationship between *Key Performance Indicators* (KPI) achievement levels and patient satisfaction can be seen in Table 4.

Table 4. The Relationship between *Key Performance Indicators* (KPI) Achievement Levels and Patient Satisfaction

Variable	Sig. (p value)	ρ {(rho) Strength of the Relationship}	Information
Achievement of <i>Key Performance Indicators</i> (KPIs) for SERVQUAL or patient satisfaction.	0,800>0,05	-0,200	There is no relationship, the direction of the relationship is negative and the strength of the relationship is low.

Based on Table 4, the results of the correlation test conducted using the Spearman test obtained a sig (p-value) = 0,800 > 0,05 and $\rho = -0,200$. From these results, it was found that there is no significant relationship between the level of achievement of *Key Performance Indicators* (KPIs) and patient satisfaction. The direction of the relationship is negative and the strength of the relationship is low. This may be because the *Key Performance Indicators* (KPIs) used more assess the managerial and administrative performance of pharmacy leaders, while patient satisfaction is more influenced by direct experience in receiving services

The units of analysis in this study were patient satisfaction levels and KPI achievement categories. Satisfaction data from 100 patients were first categorized into four levels: very satisfied (4), satisfied (3), less satisfied (2), and dissatisfied (1). These categories were then linked to KPI achievement categories: very good (90–100), good (75–89), sufficient (50–74), and poor (<50). Correlation analysis was conducted based on the suitability of the two variables.

This study has several limitations that should be considered. Based on Table 4, the results of the Spearman test showed a p-value of 0,800. First, this study was conducted only at the Pharmacy, so the results may not be generalizable to other pharmacies. which have different demographic and geographic characteristics. Second, this study focused solely on the relationship between *Key Performance Indicators* (KPI) achievement and patient satisfaction and did not account for other factors that may influence patient satisfaction, such as the physical quality of the pharmacy environment, medication prices, or previous patient experiences. Finally, the KPI assessment was based solely on the head of the pharmacy as the sole informant. The assessment would be more comprehensive if it involved additional respondents, such as pharmacy staff who play a direct role in patient care activities. This needs improvement, as indicated by the negative SERVQUAL gap value with an overall average of -0,345. Meanwhile, the performance achievement level of Pharmacy leaders based on *Key Performance Indicators* (KPIs) was in the "sufficient" category with an average achievement of 53,79%. Spearman's correlation test results showed no significant relationship between the level of KPI achievement of pharmacy leaders and patient satisfaction ($p > 0,05$).

4. CONCLUSION

Based on analysis using the SERVQUAL method, the average gap across all dimensions was -0,345. A negative gap value indicates that service quality is poor and needs improvement. Based on analysis using the *Key Performance Indicators* (KPI) achievement scale, the performance of UMY Pharmacy leaders showed an average achievement of 53,79%. This value indicates that the pharmacy's performance is in the sufficient category. The results of the correlation test using the Spearman test obtained a p-value of $0,800 > 0,05$ and $\rho = -0,200$. These results indicate that there is no significant relationship between the level of *Key Performance Indicators* (KPI) achievement and patient satisfaction.

This indicates that the current KPI indicators primarily measure managerial aspects rather than the quality of service directly experienced by patients. Therefore, UMY Pharmacy needs to evaluate and refine its KPIs by incorporating indicators focused on the quality of pharmaceutical services and patient experience. This will make the performance measurement system more comprehensive and serve as a basis for improving service quality.

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