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## What is the significance of importance performance in the context of a hospital?

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### ABSTRACT

Importance-performance analysis (IPA) is a method that can be used by the management to help prioritize developing and improving service quality based on customer ratings. This study aims to determine the performance and patient satisfaction level in one of the public hospitals in Indonesia using the IPA method by using data from a patient satisfaction survey with a total of 572 patients as respondents. The service unit is the object of research, which is measured by the patient's performance and level of satisfaction. The results show that aspects of administrative services in the emergency room, maternity, radiology, and rehabilitation units need to improve service satisfaction with treatment requirements and procedures. The results also indicate that level of performance of the health service unit in the hospital as a whole is good.

**Keywords:** *Patient satisfaction survey; important-performance analysis; hospital consumer assessment*

### INTRODUCTION

In a survey of nearly 200 senior marketing managers, 71% answered that they find customer satisfaction metrics helpful in managing and monitoring

their business.<sup>1</sup> Customer satisfaction is a key performance indicator in business and often can be part of a balanced scorecard. In a competitive market, customer satisfaction can be seen as a critical

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differentiator and progressively becoming an essential element of business strategy where businesses competed for customers.<sup>2</sup> Consumer satisfaction influences behavior and intention to use services that can have an impact on the organization income and profits.<sup>3</sup> Consumer satisfaction can be related to one of the relational learning abilities. According to our previous research, the administrative skills check can reinforce the possibility that a particular part of Emotional Intelligence mixed model proportions influences success.<sup>4</sup> In another study, we discovered that excellent leadership affected hospital managers' performance, indicating that leaders can influence motivation, commitment, and leadership skills.<sup>5</sup>

Previous studies have identified that customer satisfaction has a significant emotional component.<sup>6</sup> However, others suggest that customer satisfaction's cognitive and affective components influence each other over time to determine overall satisfaction.<sup>7</sup> A dynamic approach to customer satisfaction is essential for long-lasting goods consumed over time. Customer satisfaction can grow over time as customers use products or interact with services regularly.<sup>8</sup> The level of satisfaction one derives from individual interactions, or transactional happiness, can impact their total cumulative contentment. According to Johnson et al., the opinions of industry professionals and the essential factor in maintaining customers over the long term is their overall contentment and also loyalty.<sup>9</sup>

Organizations need to retain existing customers while targeting noncustomers.<sup>10</sup> Measuring customer satisfaction indicates the organization's success in providing products and services to the market. Research on consumption experiences grows, evidence shows that consumers buy goods and services for a combination of two types of benefits: hedonic and utilitarian.<sup>11</sup> Hedonic benefits are associated with sensory attributes and product experience. The utilitarian benefits of a product are associated with more instrumental and functional attributes of the product.<sup>12</sup>

Customer satisfaction is a nebulous and amorphous concept, and its manifestation varies from person to person and product to product or service. The level of satisfaction is influenced by several psychological and physical factors associated with satisfaction behaviors such as return rates and recommendations. Customer satisfaction levels may also differ depending on the consumer's access to alternative products and alternatives to the organization's offerings. Between 1985 and 1988, Parasuraman, Zeithaml, and Berry (Leonard L.) established the premise for measuring customer satisfaction with service based on the gap between customer expectations and perceived performance experience.<sup>13</sup> The measurer is thus provided with an objective and numerical "gap" of satisfaction. Cronin and Taylor's study created a "confirmation/disconfirmation" theory that combines the "gaps" defined by Parasuraman, Zeithaml, and Berry as two different measures (perceived and expected performance) into a single measure of expected performance.<sup>13</sup>

Service satisfaction has always been an essential topic in the service sector, whose core business operation is to provide satisfactory service to consumers. Customer satisfaction often abbreviated to CSAT is a marketing term. It measures how the products and services provided by the company meet or exceed customer expectations. Customer satisfaction is defined as "the number of customers, or percentage of total customers, whose reported experience with the company, product, or service (rating) exceeds the specified satisfaction goal."<sup>11</sup> Customers play an essential role in keeping a product or service relevant. Therefore, it is in the business's best interest to ensure customer satisfaction and build customer loyalty.

Importance-performance analysis (IPA) was first introduced by Martilla and James.<sup>14</sup> This analysis is intended to facilitate management in determining performance development priorities and interests, which are often difficult to understand because they are in the form of coefficients. In

addition, researchers are often only focused on one perspective, namely, the perspective of performance or the perspective of interests.

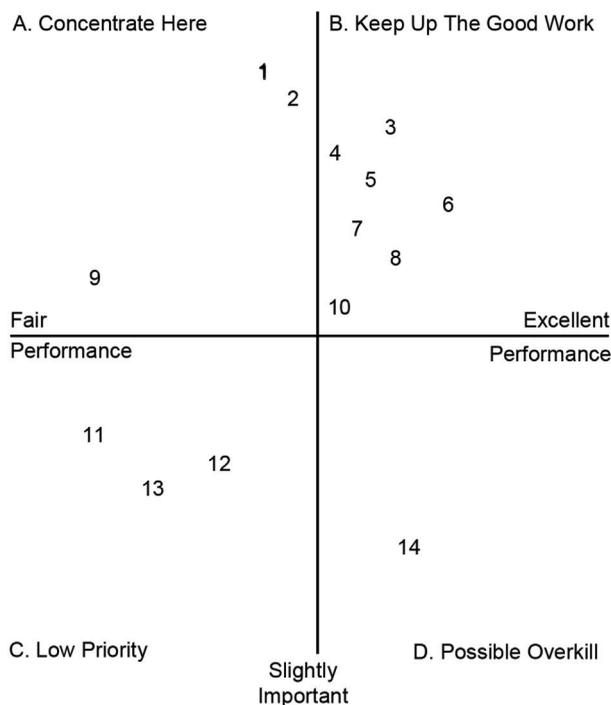
The analysis is carried out by rating the performance and importance of service and then presenting it in the form of a position map consisting of four quadrants, as shown in Figure 1. The Cartesian IPA method has a map that divides quadrants into four, namely, quadrant A, labeled concentrate here; quadrant B, labeled keep up the excellent work; quadrant C, labeled low priority; and quadrant D, labeled possible overkill. The explanation of each quadrant is as follows:

1. Quadrant A, concentrate here means that management must concentrate on developing and improving services for services whose position is in quadrant A.
2. Quadrant B, keep up the excellent work means that services whose position is already in quadrant B must maintain their

performance and importance in meeting consumer expectations.

3. Quadrant C, keep up the excellent work implies that services that are already in quadrant B must maintain their performance and relevance to consumers.
4. Quadrant D, keep up the good work refers to services whose position is already in quadrant B with the expectation that they will continue to meet consumer expectations.

IPA is a very useful tool for the management to assist in decision-making.<sup>15</sup> IPA is a tool for marketing to analyze, develop market potential, and take strategic directions. However, IPA has received criticism regarding the validity of measuring instrument development.<sup>15-17</sup> Criticisms of the use of science as a measuring instrument include the absence of clear concepts about aspects of interest, the absence of clear criteria for the science variables, the mixed use of the terms interests and expectations, the absence of a standard scale, and the absence of a standard level of determination with regard to philosophy pertaining to strategic counsel.<sup>17</sup> Yet, it can also be seen that IPA is a flexible measuring tool that does not have to use performance and interest rules as long as it can describe strategic needs. This study analyzes the performance of hospital services with patient satisfaction with the services provided by using the IPA analysis tool. The level of importance in this study was substituted by patient satisfaction as in the original article that the importance of a service is a reflection of customer satisfaction.<sup>14</sup>



**FIG 1.** Map of importance-performance analysis.<sup>14</sup>

## METHODS

This study uses patient satisfaction survey data at one of the public hospitals in Central Java, Indonesia, with 572 patients as respondents. The performance and patient satisfaction variables consist of nine questions that are divided into four service aspects, namely, administrative service aspects

(four questions), tangible service aspects (two questions), service aspects derived from employee performance (two questions), and intangible service aspects (two questions). The scale used is a Likert three scale, which represents “not appropriate,” “appropriate,” and “very suitable” for performance; “not satisfied,” “satisfied,” and “very satisfied” for patient satisfaction.

Table 1 shows the validity test results for the hospital service performance scale. The corrected item-total correlation (CITC) values ranged from 0.504 to 0.770. The CITC value of the variables used in the study for the performance scale >0.3 indicates that all variables are valid. Cronbach’s Alpha (CA)

value of the performance scale variable is 0.898 > 0.7, which indicates it is reliable.

Table 2 shows the validity test results for the patient scale of services. The CITC values ranged from 0.391 to 0.748. The CITC value of the variables used in the study for the patient satisfaction scale >0.3 indicates that all variables are valid. The CA value of the patient satisfaction scale variable is 0.879 > 0.7, which indicates that the patient satisfaction scale is reliable.

Based on the results of the validity and reliability of the performance variable scale and patient satisfaction, it can be said that there is no problem with the validity or reliability of the measurement scale, as happened in previous studies.<sup>15-17</sup>

**TABLE 1.** The validity test of service performance scale.

Variable	Scale mean if item deleted	Scale variance if item deleted	Corrected item total correlation	Cronbach’s alpha if item deleted
KA1	19.260	9.818	0.553	0.895
KA2	19.234	9.346	0.691	0.885
KA3	19.288	9.092	0.755	0.880
KT1	19.073	9.679	0.519	0.899
KT2	19.285	9.507	0.681	0.886
KK1	19.220	9.160	0.769	0.879
KK2	19.182	9.165	0.770	0.879
KI1	19.194	9.057	0.742	0.881
KI2	18.934	9.968	0.504	0.898

**TABLE 2.** The validity test of the patient satisfaction scale.

Variable	Scale mean if item deleted	Scale variance if item deleted	Corrected item total correlation	Cronbach’s alpha if item deleted
SA1	19.056	11.076	0.587	0.873
SA2	19.168	10.248	0.698	0.863
SA3	18.914	11.987	0.641	0.865
ST1	18.771	12.685	0.391	0.885
ST2	18.949	11.996	0.709	0.861
SK1	18.839	11.760	0.740	0.858
SK2	18.818	11.736	0.748	0.857
SI1	18.844	11.767	0.706	0.860
SI2	18.626	12.340	0.552	0.872

## RESULTS AND DISCUSSION

The level of performance-patient satisfaction is the same as the scale used in the patient satisfaction survey, namely, the minimum is one and the maximum is three. This range value has a median of two, which is used as the limit for determining the level of performance satisfaction. Scores  $>2$  are classified as high, and scores  $<2$  are classified as low.

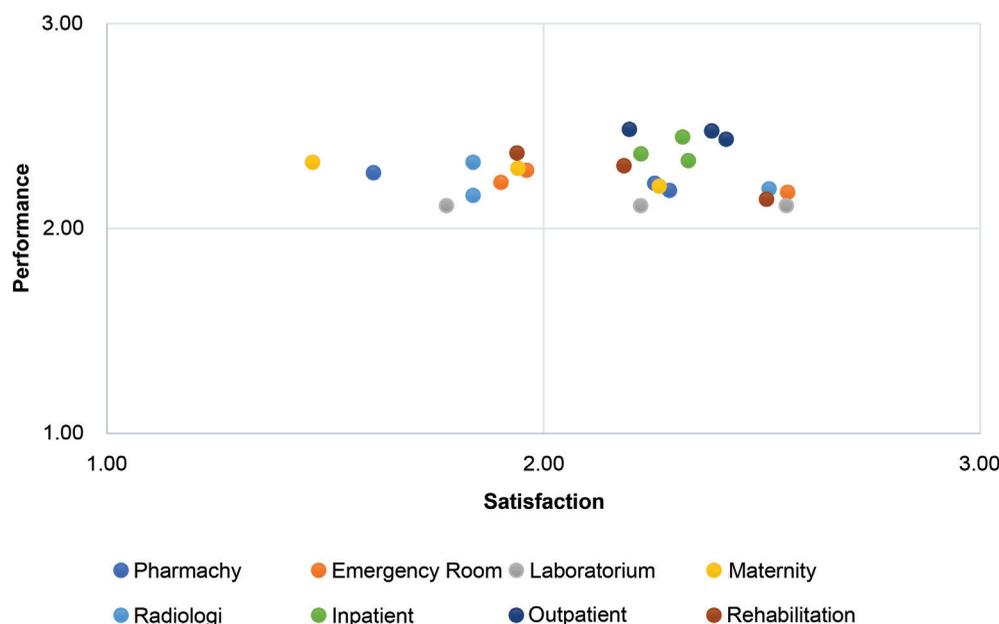
Table 3 shows the level of performance satisfaction in aspects of administrative services. The level of performance of all service units is already

high, as indicated by a performance score of  $>2$ . However, patient satisfaction is still low for the treatment requirements of several units, such as the emergency department, maternity, radiology, and rehabilitation. In the treatment procedure, the level of satisfaction in the pharmacy, emergency room, laboratory, maternity, and radiology units is still low. The speed of service has earned a high level of satisfaction.

Figure 2 shows the IPA map for the performance-satisfaction of service units in administrative

**TABLE 3.** Level of performance-satisfaction of service unit administrative aspect.

No	Service units	Performance			Satisfaction		
		Terms	Procedur	Speed	Terms	Procedur	Speed
1	Pharmacy	2.19	2.27	2.22	2.29	1.61	2.25
2	Emergency room	2.28	2.23	2.18	1.96	1.90	2.56
3	Laboratorium	2.11	2.11	2.11	2.22	1.78	2.56
4	Maternity	2.29	2.32	2.21	1.94	1.47	2.26
5	Radiology	2.32	2.16	2.19	1.84	1.84	2.52
6	Inpatient	2.33	2.45	2.36	2.33	2.32	2.22
7	Outpatient	2.43	2.48	2.48	2.42	2.39	2.20
8	Rehabilitation	2.37	2.31	2.14	1.94	2.18	2.51



**FIG 2.** Importance-performance analysis map of administrative service performance-satisfaction.

services. All units are on the right side of the performance line, which means that they already have high performance, but some units are below the satisfaction line where these units have a low level of patient satisfaction. Units that are still below the satisfaction line must be the hospital's focus to improve services so that they can meet patients' expectations.

Table 4 shows the performance-satisfaction level score for the tangible services. All service units, regarding tariffs and product standards, already have a high level of performance and satisfaction, as indicated by a performance score >2 and satisfaction >2.

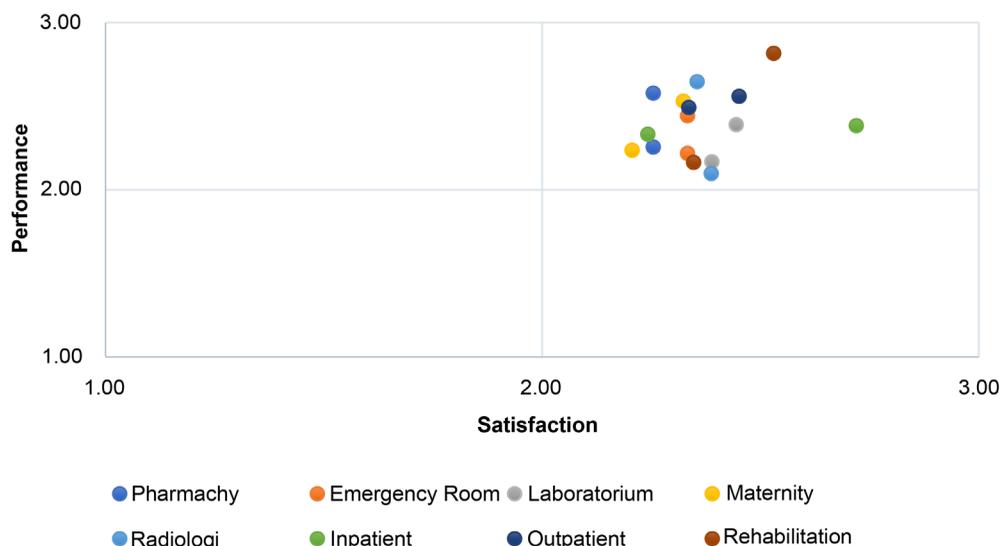
In Figure 3, all units are above the satisfaction line and to the right of the performance line. This shows that the performance-satisfaction of the service unit for tangible services is already high.

Table 5 shows the performance-satisfaction level scores for the performance of the hospital employees. In terms of officer competence and officer behavior, all service units already have a high level of performance and satisfaction, indicated by a performance score >2 and satisfaction >2.

In Figure 4, all units are above the satisfaction line and to the right of the performance line. The fact that this is the case demonstrates that the

**TABLE 4.** Level of performance-satisfaction of unit aspects of tangible services.

No	Service units	Performance		Satisfaction	
		Tariff	Product Standard	Tariff	Product Standard
1	Pharmacy	2.58	2.25	2.25	2.25
2	Emergency room	2.44	2.22	2.33	2.33
3	Laboratorium	2.39	2.17	2.44	2.39
4	Maternity	2.53	2.24	2.32	2.21
5	Radiology	2.65	2.10	2.35	2.39
6	Inpatient	2.38	2.33	2.72	2.24
7	Outpatient	2.56	2.49	2.45	2.34
8	Rehabilitation	2.82	2.16	2.53	2.35



**FIG 3.** Importance-performance analysis map of performance-satisfaction tangible service.

**TABLE 5.** Level of performance-satisfaction of service unit aspects of employee performance.

No	Service units	Performance		Satisfaction	
		Competence	Behavior	Competence	Behavior
1	Pharmacy	2.31	2.25	2.31	2.29
2	Emergency room	2.36	2.35	2.51	2.51
3	Laboratorium	2.39	2.50	2.56	2.56
4	Maternity	2.21	2.26	2.32	2.32
5	Radiology	2.39	2.39	2.52	2.48
6	Inpatient	2.34	2.41	2.32	2.41
7	Outpatient	2.49	2.56	2.43	2.44
8	Rehabilitation	2.29	2.35	2.49	2.45



**FIG 4.** Importance-performance analysis map of employee performance-satisfaction.

performance satisfaction of the service unit for concrete services is already high.

Table 6 shows the performance-satisfaction level score for intangible services. All service units, in terms of facilities, infrastructure, and complaint services, already have a high level of performance and satisfaction, indicated by a performance score >2 and satisfaction >2.

In Figure 5, all units are above the satisfaction line and to the right of the performance line. It shows

that the performance-satisfaction of the service unit for tangible services is already high.

Table 7 displays the performance-satisfaction level scores for components of hospital’s services. Due to the score range of 1–8, the service standard of performance and customer satisfaction is a 4 out of 8. All service units already have a high level of performance and satisfaction, as evidenced by performance scores more significant than 4 and satisfaction scores greater than 4.

In Figure 6, all units are above the satisfaction line and to the right of the performance line. It shows that the performance satisfaction of the service units is already high. However, it is necessary to pay attention to service units with a score range of 4 to 5.5 performance-satisfaction to improve performance and fulfillment of patient satisfaction.

Table 8 displays the total value for the level of performance satisfaction in the hospital's service units. The total value of performance satisfaction ranges from 9 to 27, with an average of 18 points.

**TABLE 6.** Level of performance-satisfaction of hospital service unit aspects of intangible services.

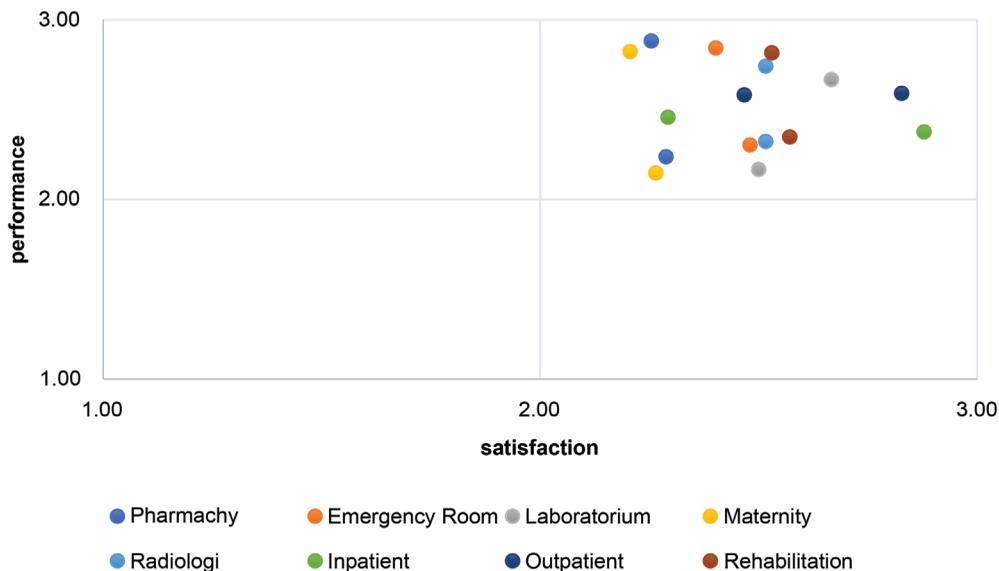
No	Service units	Performance		Satisfaction	
		S&P	LP	S&P	LP
1	Pharmacy	2.24	2.88	2.29	2.25
2	Emergency room	2.30	2.84	2.48	2.40
3	Laboratorium	2.17	2.67	2.50	2.67
4	Maternity	2.15	2.82	2.26	2.21
5	Radiology	2.32	2.74	2.52	2.52
6	Inpatient	2.46	2.38	2.29	2.88
7	Outpatient	2.58	2.59	2.47	2.83
8	Rehabilitation	2.35	2.82	2.57	2.53

Therefore, a performance-satisfaction score above 18 shows that the service unit's performance and satisfaction are already high. All service units have demonstrated performance and satisfaction scores above 18, indicating that both are already high.

Figure 7 shows the IPA map for the total performance-satisfaction for service units. As can be seen, all units are above the performance and satisfaction line, which shows that all units have high performance and satisfaction. It is just that the hospital must pay attention to the unit whose position is below to improve both performance and achievement of patient satisfaction.

Based on the results of IPA through a patient satisfaction survey at hospital, it is evident that all service units' performance has high-performance ratings. In the context of administrative services, there are still units with a low level of satisfaction. In relation to these outcomes, the application of work standards to the delivery of health services must meet the expectations of patients.

The hospital has organizational goal standards that have been determined by the management. The organizational goals should be aligned with patients' expectations who in this case are the

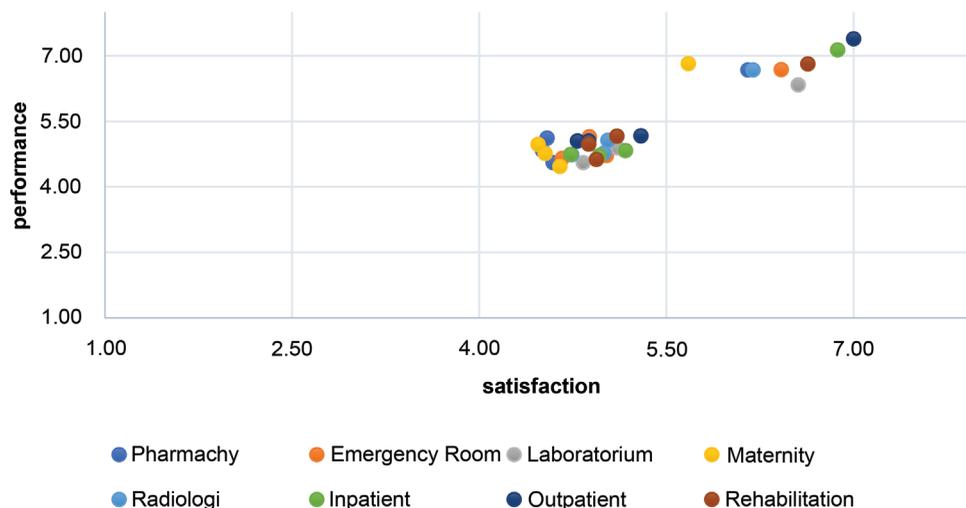


**FIG 5.** Importance-performance analysis map of intangible service satisfaction.

**TABLE 7.** Level of performance-satisfaction of hospital service unit.

No	Service units	Performance				Satisfaction			
		HA	HT	HE	HI	HA	HT	HE	HI
1	Pharmacy	6.68	4.83	4.56	5.12	6.15	4.51	4.59	4.54
2	Emergency room	6.69	4.66	4.72	5.15	6.42	4.67	5.02	4.88
3	Laboratorium	6.33	4.56	4.89	4.83	6.56	4.83	5.11	5.17
4	Maternity	6.82	4.76	4.47	4.97	5.68	4.53	4.65	4.47
5	Radiology	6.68	4.74	4.77	5.06	6.19	4.74	5.00	5.03
6	Inpatient	7.14	4.71	4.75	4.83	6.87	4.96	4.73	5.17
7	Outpatient	7.39	5.05	5.05	5.17	7.00	4.79	4.88	5.30
8	Rehabilitation	6.82	4.98	4.63	5.16	6.63	4.88	4.94	5.10

HA, Hospital Administratif; HT, Hospital Tangible; HE, Hospital Employee; HI, Hospital Intangible.



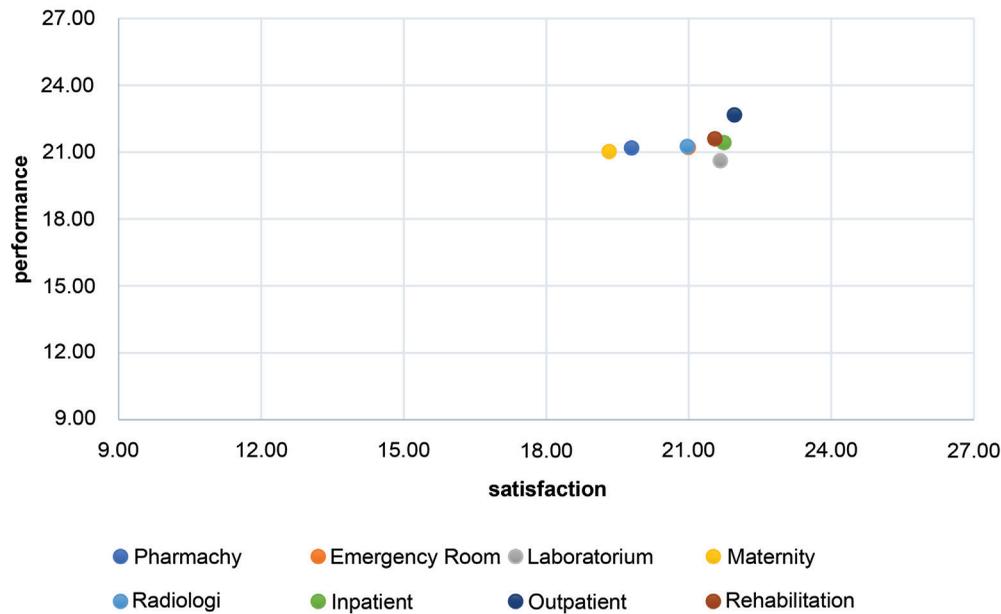
**FIG 6.** Importance-performance analysis map of service performance-satisfaction.

**TABLE 8.** Level of performance-satisfaction of the hospital service unit total service.

No	Service units	Performance	Satisfaction
1	Pharmacy	21.19	19.80
2	Emergency room	21.21	20.99
3	Laboratorium	20.61	21.67
4	Maternity	21.03	19.32
5	Radiology	21.26	20.97
6	Inpatient	21.43	21.74
7	Outpatient	22.66	21.96
8	Rehabilitation	21.59	21.55

hospital’s consumers. Hospital programs and work plans should not mislead or even conflict with consumer expectations. This is a vital aspect to use public relations (PR) that link hospitals and patients to ensure conformance between the performance standards set by the organization and the expectation that it will give patient satisfaction.

Modern businesses have to work and be adaptive in an environment that is less predictable, moves faster, and has more moving parts.<sup>18</sup> The customer is an essential part of any business. Measuring the extent to which they are happy with the service provided is a crucial part of any strategy



**FIG 7.** Importance-performance analysis map of total performance-satisfaction.

designed to increase a company’s likelihood of being profitable. A firm needs to increase its ability to compete for customer satisfaction by retaining more customers and also attaining better levels of customer happiness.<sup>19</sup> Customer loyalty is the single most significant factor in determining whether or not a company will be victorious throughout its existence. Businesses can maintain lower costs than the costs of acquiring new customers due to the loyalty of their existing customers. Loyal customers can add to the firm’s worth and allow it to maintain lower costs. Organizations can build a long-term relationship with their customers, which is mutually beneficial, by first developing their customers’ loyalty and then retaining it as the foundation for their relationship.<sup>20</sup>

The comparison of the appraisal of customer-level satisfaction from the firm’s and customer’s perspectives reveals several significant discrepancies that should be considered. The disparities between the enterprises are evident not just in their overall success but also in their differences. Businesses are responsible for ensuring that the ratings they give

themselves are in line with the assessments provided to them by their customers.<sup>21</sup> It was discovered that the customers’ contentment has a causal relationship with the employees’ contentment as well as an understanding of the employees’ contentment.<sup>22,23</sup> Businesses make it a point to determine how satisfied their customers are and to check if their performance levels are up to the standards that they have established.<sup>24</sup>

As soon as it comes to the provision of medical care, the degree to which patients are pleased with their care is proportional not only to the effectiveness of the Human Resources and Development department but also to the sense of satisfaction that is felt by the staff members of the respective hospitals.<sup>25,26</sup> Three components of healthcare quality need to be emphasized: the quality of the outcomes, the protection of patient rights and privacy, and the quality of the services offered.<sup>27</sup> On the other hand, in terms of the overall performance of private hospitals, the servicescape quality domain requires strategic planning to establish itself as a distinct selling point.<sup>28</sup>

## CONCLUSION

IPA is a valuable tool that assists the management in determining priorities for developing a service. Because there are no standard variables or scales, this analytical tool can become a standard to obtain variables and scales. When compared with previous research, this study identifies that there are no validity issues with the measurement scale. Our finding that all units are on the right side of the performance line, indicates that they are already performing well. However, some units are below the satisfaction line, indicating low patient satisfaction. All service units' performance results already had high-performance ratings based on IPA and patient satisfaction as measured by a patient satisfaction survey at the hospital.

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## COMPETING INTERESTS

The authors state that they have no financial or personal affiliation that could have influenced their decision to write this article.

## AUTHORS' CONTRIBUTIONS

The authors worked together on the research conception and implementation, data analysis, and manuscript drafting.

## ETHICS CONSIDERATIONS

All ethical standards for research that did not involve direct contact with human or animal subjects were followed in this article.

## FUNDING INFORMATION

This study received no specific funding from any government, commercial, or nonprofit organization.

## DATA ACCESSIBILITY

Data supporting the findings of this study are available upon reasonable request from the corresponding author.

## DISCLAIMER

The author's views and opinions in this article do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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