

# **ANALYZING PATIENT SATISFACTION TOWARDS RESIDENT AT INTERNAL MEDICINE DEPARTEMENT IN HASAN SADIKIN HOSPITAL BANDUNG USING REVISED IMPORTANCE–PERFORMANCE ANALYSIS**

**Hasna Azzizah Qarari\***  
*Institut Teknologi Bandung*

**Ruswana Anwar**  
*RSUP Dr. Hasan Sadikin Bandung*

**Mursyid Hasan Basri**  
*Institut Teknologi Bandung*

**Shimaditya Nuraeni**  
*Institut Teknologi Bandung*

## **ABSTRACT**

Service quality has become important things for health care organization to fulfill patient satisfaction. It also applied in Hasan Sadikin Hospital Bandung especially when they get into Joint Commission International (JCI) to achieved international accreditation. Hasan Sadikin Hospital needs to identify attributes that more influential on the level of patient satisfaction to provide better service. Therefore, this research conducted to classify the attributes as well as proposing some recommendations for the resident in Internal Medicine Department. The concepts that used in this research are IPA, three-factor theory of customer satisfaction, cluster analysis, and SERVQUAL dimensions. The result showed that there are five attributes categorized as the basic factor, three attributes as the performance factor, and one attribute as an excitement factor. Based on these results, the proposed recommendations are improve services that related to the basic factor, prioritize institution's strategy to increase the performance factor as competitive advantage, and make excitement factor as unique component that stand-out from another hospital to accommodate Hasan Sadikin Hospital achieving international accreditation.

**Keywords:** Patient satisfaction; Service Quality; Importance-Performance Analysis; Three Factor Theory; Cluster Analysis.

## **1. INTRODUCTION**

Health is one of the main factors for development. A healthy human in a country is a capital for national development, in particular for developing country such as Indonesia who has a demographic bonus which most of the citizen are in productive age (BPS-Statistics Indonesia, 2015). Indonesian Law article 34 stated that the country is responsible to provide a sufficient health care services for the citizen. Healthcare industry in recent year showed a tremendous growth as people start paying

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\* Corresponding Author: Hasna Azzizah Qarari. School of Business and Management, Institut Teknologi Bandung, Jl. Ganesha No. 10, Bandung 40132, Indonesia. Tel.: +6222-253-1923; Fax: +6222-250-4249. E-mail address: [hasna.azzizah@sbm-itb.ac.id](mailto:hasna.azzizah@sbm-itb.ac.id)

attention to the health condition to improve their quality of life. As a service industry, hospital should provide healthcare services to the customers and building a loyal patient considered as a critical anchors that ensure the survival and success of the industry in the future (Meesala & Paul, 2016).

In 2014 there are total of 2,048 hospital in Indonesia categorized as public hospital or private-own hospital (BPS-Statistics Indonesia, 2015). Moreover, Indonesia also develop Community Health Center (known as *Puskesmas*), which a government-mandated community health clinics to provide healthcare in sub-district level. There are 9,731 *puskesmas* recorded in 2014 (BPS-Statistics Indonesia, 2015). Although the amount of healthcare services in Indonesia (represented by hospital and *puskesmas*) seems tremendous, but some of Indonesian patients seek medical treatment abroad. Such as hospitals in Singapore, 30-40% of the foreign patient are Indonesian (Budiwan & Efendi, 2016). Budiwan & Efendi (2016) study identify five dimension that perceived by Indonesian patient who preferred hospitals in Singapore, namely: technical aspects, credibility, reliability, professionalism and skills, and assurance. Moreover, the difference in services between most of Indonesia's hospital and Singapore's hospital as mention by the respondents was the transparency and fairness, customer orientation, and patient's health status.

As central public hospital in West Java, Hasan Sadikin Hospital (HS-Hospital) need to pay more attention to their service quality, where customer will compare their expectation and real performance of the services. HS-Hospital itself stated a vision to become an excellent and transformative health institution to improve public health status. In order to achieve the vision they have mission to carry out comprehensive and excellence that integrate with education and research, carry out standard of reference systems, and conduct tranformation to develop the public health status. Their vision for becoming an excellent institution is not limited at national level but also to achieve the international standards. One component on ensuring quality in service industry is through accreditaion. HS-Hospital is pursuing this accreditation to validate the service provided by HS-Hospital toward the patients.

Thus, the aim of this research are to identify attributes that are most influential on patient satisfaction and importance in order to provide better service. Currently, Hasan Sadikin Hospital has not yet measure the patients' satisfaction level towards quality of service of resident doctors in the department of medical specialities. This research focus on patients' satisfaction level towards service quality of resident from Internal Medicine Department of Hasan Sadikin Hospital. The Internal Medicine Department was chosen because it has the biggest number of resident doctors. Resident doctor (or later being called as resident) is doctor who got specialist education directly in hospital after they graduate from the university in order to acquire abilities and skills during face-to-face interaction with the patient and solve the complex problems in real situation (Fernandes, 2015).

To achieve the objective of the research, this paper continued with literature review of service quality, importance-performance analysis, three factor theory of customer satisfactions, and cluster analysis. The following part of the paper will show the research methodology, continued finding of the research using multiple regression analysis, IPA analysis and cluster analysis. At the end the conclusion and recommendation for improvement of residents of Hasan Sadikin Hospital being discussed.

## 2. LITERATURE REVIEW

### 2.1. Service Quality

There are many definitions of service quality. Commonly, service quality was defined such as the way of company to providing services which appropriate with customer need and expectations (Lewis and Mitchell, 1990; Dotchin and Oakland, 1994; Asubonteng *et al.*, 1996; Wisniewski and Donnelly, 1996). Service quality consists of gap between expectation of the service with real performance of service that customer perceived (Shahin, 2006). Qualities of service that company provides are impacted to customer satisfaction that related to customer loyalty, price elasticity, cross-buying, and positive image of a company (Matzler *et al.*, 2003).

Service quality of hospital have seven dimensions which consists of personnel quality, infrastructures, process of administration, clinical care process, safety, medical care experience, and social responsibility (Duggirala *et al.*, 2008). Perception of patient towards service quality of hospital are consists of physical environment (facilities, infrastructure), quality of interaction (attitude and behaviour of medical personnel), and quality of outcome (time for waiting, level of satisfaction) (Chahal & Kumari, 2010). It is difficult for a patient to assess the level of service quality that hospital provide for them because they are lack the knowledge of medical service (Eleuch, 2011). Fuentes (1999) states that commonly patients' perception of hospital service quality is based on the judgement of patient towards performance that hospital gives to patient such as services of medical personnel. Customer satisfaction will occur if real performance of service quality that customer perceived greater than customer expectations, vice versa (Parasuraman *et al.*, 1985).

The key to make a high level of service quality is to identify problems that occurs in service and measures the level of customer satisfaction from performance of services to understand the operational process (Borgave, 2012). Hospital need to understanding the expectations and perceptions of customers towards the services that the hospital provide (Yousapronpaiboon & Johnson, 2013). It is the reason of service quality should be measured because measurement can help the company to compare the quality of service before and after do some development in delivering the service (Brysland & Curry, 2001). Parasuraman *et al.* (1988) develop SERVQUAL to measure the service quality. SERVQUAL consists of five dimensions namely: (i) *Tangibles*: physical dimension of service that customer can see directly such as facilities, infrastructure, equipment, (ii) *Reliability*: ability the performance of the company to provide right service, (iii) *Responsiveness*: employees willingness to provide service and help the customers, (iv) *Assurance*: consists of knowledge, courtesy, and competence of employees to perform the service, and (v) *Empathy*: form of employees attention to their customers.

### 2.2. Importance-Performance Analysis (IPA)

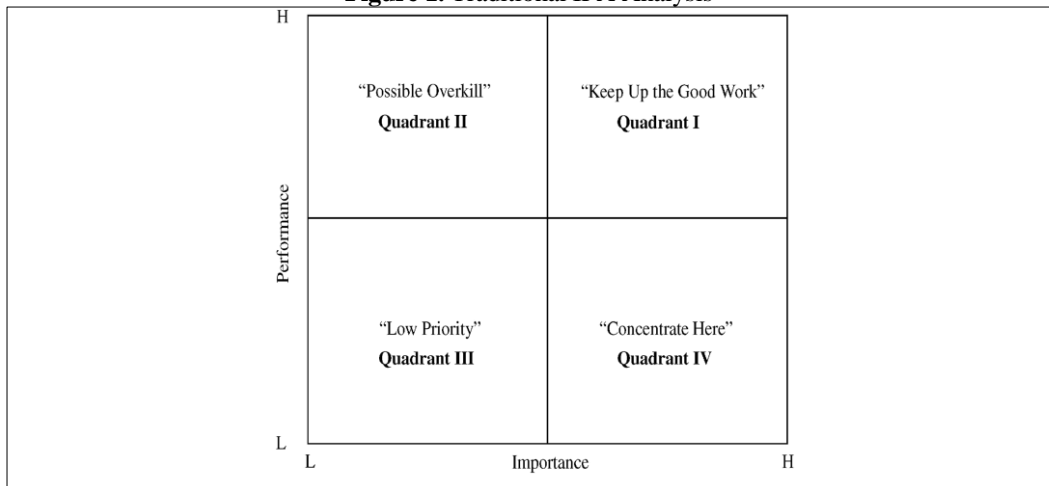
Importance-performance analysis (IPA) was introduced by Martilla and James (1977) as one of method that effective to define the priorities. It is analyse two dimensions of quality attributes from level of customer satisfaction towards the performance and the importance. It will identify the most important factors that satisfy the customer, formulate priorities factor for improvement, and classify the factors into a matrix for areas of (i) possible overkill, (ii) keep up the good work, (iii) low priority, and (iv) concentrate here (Matzler *et al.*, 2003). It can help the managers to make best decisions in allocate the resources in order to maximize the level of customer satisfaction (Deng, 2006).

Generally, IPA divides the area into four quadrants of two-dimensional matrix that construct from the result of customer satisfaction survey. It consists of x-axis for importance level and y-axis for performance level. Each attribute of importance and performance will be measured using form such as rating scale.

Attributes that places on area Quadrant I (level of performance and importance are high) presents that management should “keep up the good work” to maintaining the performances since it becomes company strength. Attribute on area Quadrant II (high level of performance but low level of importance) presents that company should not maintain this attributes since customer not required this attributes. It makes management decide to “overkill” the attributes on this area. Attributes on area Quadrant III (level performance and importance are low) makes manager should set the attributes become “low priority” since it is not importance for customer. The last is attributes on area Quadrant IV (low level of performance but high level of importance) shows that customer required the attributes but company unable to provide good services in this attributes. It makes management decides to “concentrate here” to improve the company provide better services. According to Deng (2006), this area will be main priority that should managers improve (see Fig. 1).

Two assumptions of traditional IPA stated that attribute performance and attribute importance are two independent variables, and the relationship between quality of attribute performance and overall performance is linear and asymmetric (Matzler *et al.*, 2003). Research in customer satisfaction suggest that the quality of the attributes can be categorized into: basic factors, performance factors, and excitement factors. Kano (in Matzler *et al.*, 2003) argue that the relationship between performance and importance of basic and excitement factors is nonlinear and asymmetric. Furthermore, attribute importance can be interpreted as a function of performance. Basic factors are critical when performance in low, because their influence on overall satisfaction decreases when performance increases. The opposite is true for excitement factors, because they become important determinants of satisfaction when performance is high but play an unimportant role when performance is low. Therefore, even though the IPA traditional model has been widely used in the research, but the modification of IPA is needed in order to capture the concept of satisfaction especially in health-organization.

**Figure 1. Traditional IPA Analysis**

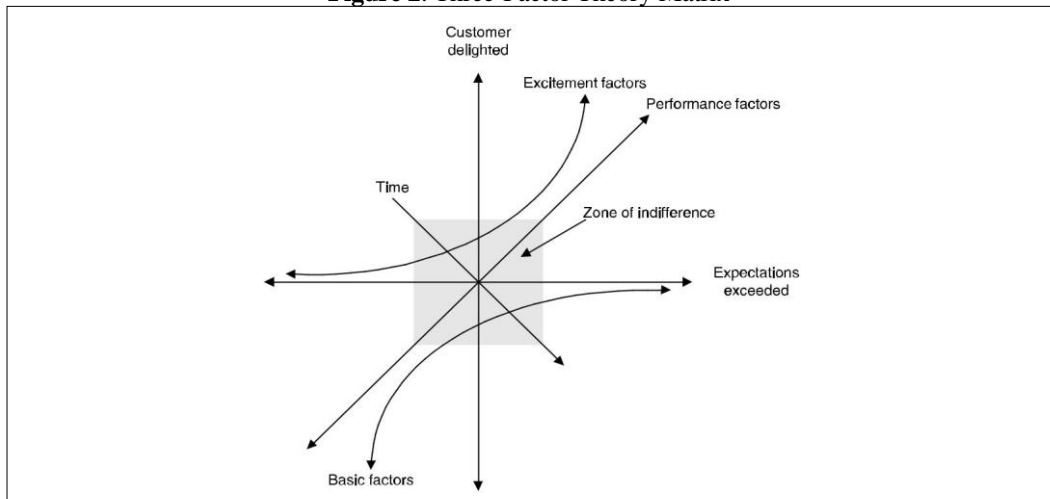


### 2.3. Three-Factor Theory of Customer Satisfaction

Three-factor theory is used to classify the quality attributes into three categories that give different impact on customer satisfaction. This theory helps to classify the attribute into basic factor, excitement factor, and performance factor. Level of satisfaction is formed through comparison of customer expectations and real performance that customer perceive. It will be satisfied if customer perceives the performances appropriate or greater than expectations but customer will be dissatisfied if they perceive performances lower than expectations. Attribute-level performance and overall satisfaction in this theory is asymmetric (Matzler *et al.*, 2003).

Basic factor is important factor that should be fulfilled by hospital since it will lead customer dissatisfaction if the hospital does not provide well but does not cause customer dissatisfy if hospital does exceeded it. On the other hand, the excitement factor will make customer satisfaction increase if hospital provide it well but not make customer dissatisfied even though the hospital do not provide it. Performance factor lead satisfaction level based on level of their performance (Sauerwein & Matzler, 2002). Three-factor theory also establishes there are two characteristics of quality attributes: (i) Performance of basic or excitement attribute is influencing their importance level (dependent attributes), and (ii) The relationship between attribute of performance and importance are asymmetric (Matzler *et al.*, 2003) (see Fig. 2).

**Figure 2.** Three-Factor Theory Matrix



## 3. RESEARCH METHODOLOGY

To identify attributes that are most influential on patients' satisfaction and importance in order to provide better service in HS-Hospital, a questionnaire was constructed based on SERVQUAL dimensions that related to performance and importance factor of service quality of the resident. The questions were made to assess the performance of resident and importance of the attributes separately using 5-Likert scale (strongly dissatisfied/ unimportant-strongly satisfied/ important). During data

collection, the respondents were asked to filled-out the questionnaire by themselves or the researcher filling-out the questionnaire after asking the questions to the respondents.

The respondents took as the sample of this research was the patient that already received health care from resident in Internal Medicine department at least for 24 hours. There were 87 respondents taken as a sample in this study during a one month observation from a total of 100 bed capacity in the Internal Medicine Department of HS-Hospital.

Next, the collected data were analysed using multiple regressions to find out the most influential attributes of patients' satisfaction and importance. For managerial implication, additional analysis of cluster analysis was done to find out which attributes considered by which patient segment. Last, the conclusion of the analysis provides some recommendation to resident of Hasan Sadikin Hospital to provide better service.

## 4. RESEARCH FINDING

### 4.1. Respondent Profiles

Based on 87 respondents from patient in Internal Medicine Department of Hasan Sadikin Hospital that fulfill the questionnaire mostly are female (63%). Ninety percent of the respondents do not have diploma degree (40% were elementary school graduates, 22% were junior high school graduates and 29% were senior high school graduates). More than half (57%) of the respondent do not have a certain job, with almost three-quarter of them have an income of Rp. 2.000.000 or less, and most of them (72%) were using BPJS – The Social Security Administrative Agency provide by the government (see Table 1 for detail).

**Table 1:** Respondent Profiles

| Variable                    | Percentage % |
|-----------------------------|--------------|
| <i>Gender</i>               |              |
| Female                      | 63           |
| Male                        | 37           |
| <i>Age</i>                  |              |
| < 17                        | 2            |
| 17 – 24                     | 9            |
| 25 – 29                     | 13           |
| 30 – 39                     | 22           |
| 40 – 49                     | 25           |
| 50 – 59                     | 20           |
| > 59                        | 9            |
| <i>Education Background</i> |              |
| Elementary School           | 40           |
| Junior High School          | 22           |
| Senior High School          | 29           |
| Diploma                     | 5            |
| Undergraduate               | 3            |
| Postgraduate                | 1            |

**Table 1:** Respondent Profiles (cont.)

| Variable                            | Percentage % |
|-------------------------------------|--------------|
| <i>Occupation</i>                   |              |
| Civil Servant                       | 3            |
| Private Employee                    | 14           |
| Entrepreneur                        | 20           |
| Student                             | 5            |
| College Student                     | 1            |
| Others                              | 57           |
| <i>Income</i>                       |              |
| < Rp. 1.000.000                     | 30           |
| Rp. 1.000.001 – Rp. 2.000.000       | 44           |
| Rp. 2.000.001 – Rp. 3.000.000       | 18           |
| Rp. 3.000.001 – Rp. 4.000.000       | 7            |
| Rp. 4.000.001 – Rp. 5.000.000       | 0            |
| >Rp. 5.000.00                       | 1            |
| <i>Payment of Hospital Services</i> |              |
| Personal                            | 10           |
| ASKES                               | 5            |
| JAMKESMAS                           | 9            |
| JAMKESDA                            | 0            |
| BPJS                                | 72           |
| Others                              | 3            |

#### 4.2. IPA-Revised Result

The dimensions and sub-dimensions of SERVQUAL is presented in the Table 2 below

**Table 2:** Dimensions and sub-dimensions of SERVQUAL assessment

| No | Dimension      | Sub-dimensions  |
|----|----------------|---|
| 1  | Tangibles      | Tidiness appearance<br>Equipment completeness   |
| 2  | Reliability    | Diagnose accuracy   |
| 3  | Responsiveness | Speed of response<br>Respond to complaint<br>Easiness to contact                          |
| 4  | Assurance      | Visit Patient on Schedule<br>Provide clear information                                    |
| 5  | Empathy        | Asking opportunity<br>Hospitality<br>Understand patients need<br>Two-way of communication |

To conduct and analyze the service quality attribute, data analyze using multiple regressions. The classical assumption to test the normality of the data a non-significant result which means the data is normally distributed. Several authors (e.g., Anderson & Mittal, 2000; Brandt, 1988; Matzler & Sauerwein, 2002; Mittal, Ross, & Baldasare, 1998) identify the impact that asymmetric from attribute

performance towards the customer satisfaction using multiple regressions with dummy attribute. The used of dummy variables is to identify the asymmetric impact of attribute performance on overall satisfaction (Matzler *et al.*, 2003) (see Table 1). In order to conduct the analysis, results of performance rating was coded with “0” and “1”.

Dummy variable for performance rating in this research separated into two parts, which are:

- Set for dummy variable when performance is low

Performance rating with scored 1 and 2 is coded as “1” and performance rating with scored 3, 4, and 5 is coded as “0”.

- Set for dummy variable when performance is high

Performance rating with scored 1, 2, and 3 is coded as “0” and the performance rating with scored 4 and 5 is coded as “1”.

The multiple regression results using dummy variable showed that for Low Performance test result, only *easiness to contact* attribute is significant, the others are only significant for the Hasan Sadikin Hospital. Whilst for High Performance test result, attributes that only significant for the Hasan Sadikin Hospital are *asking opportunity*, *provide clear information*, and *tidiness appearance*, while the rest are significant (see Table 3 for detail).

According to Table 3, the attributes that classified as basic factor are: (i) understand patient need; (ii) easy to contact; (iii) two way communication; (iv) visit patient on schedule; and (v) speed of response. The attributes that classified as performance factor are: (i) equipment completeness, (ii) respond to complaint, and (iii) hospitality. While attributes that classified as excitement factor is diagnose accuracy.

**Table 3: Dummy Attribute Regression Results**

| No | Item Code                 | Dummy Variable Regression Results |                  |
|----|---------------------------|-----------------------------------|------------------|
|    |                           | Low Performance                   | High Performance |
| 1  | Visit Patient on Schedule | -4.147 (ns)                       | 1.921 (**)       |
| 2  | Speed of Response         | -3.287 (ns)                       | 2.120 (**)       |
| 3  | Respond to Complaint      | -1.748 (ns)                       | 1.911 (**)       |
| 4  | Asking Opportunity        | 1.626 (ns)                        | 1.396 (ns)       |
| 5  | Diagnose Accuracy         | 1.440 (ns)                        | 2.238 (*)        |
| 6  | Provide Clear Information | -7.481 (ns)                       | 1.365 (ns)       |
| 7  | Hospitality               | -1.717 (ns)                       | 2.147 (*)        |
| 8  | Easy to Contact           | -4.657 (*)                        | 3.022 (**)       |
| 9  | Understand Patient Need   | -7.752 (ns)                       | 1.637 (*)        |
| 10 | Two Way Communication     | -4.358 (ns)                       | 2.073 (**)       |
| 11 | Tidiness Appearance       | 7.889 (ns)                        | 0.796 (ns)       |
| 12 | Equipment Completeness    | -2.364 (ns)                       | 2.166 (**)       |

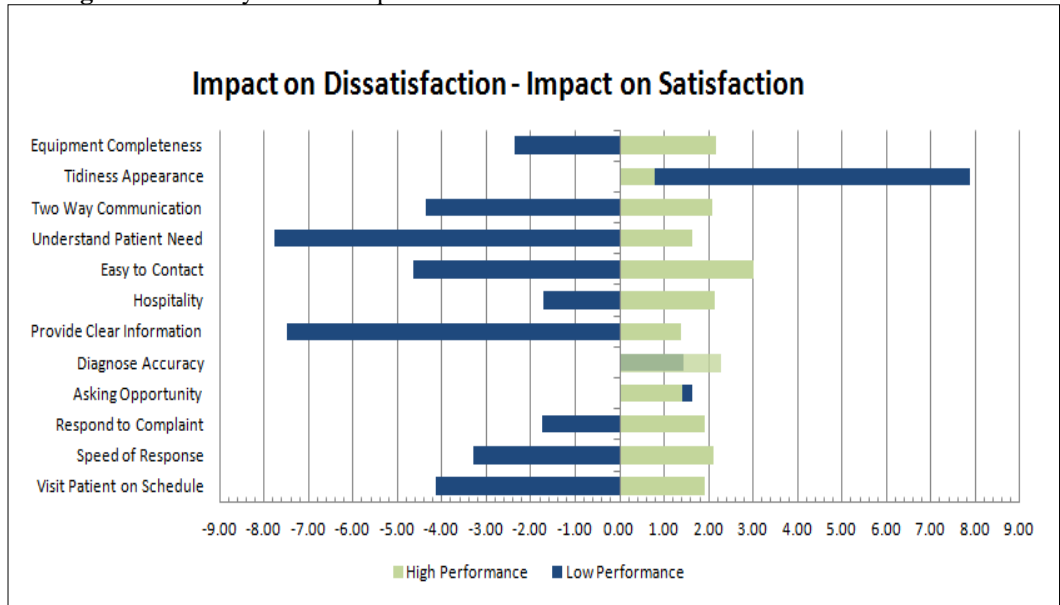
Notes: \* significant on  $p < 0.1$ ; \*\* significant on  $p < 0.05$

Basic factor is important factor that should hospital fulfilled since it will lead customer dissatisfaction if the hospital does not provide it well but does not cause customer satisfy if hospital does it exceeded. Beside basic factor there is excitement factor that will make customer satisfaction increase if hospital provide it well but not make customer dissatisfied even though the hospital do not provide it.



Performance factor lead satisfaction level based on level of their performance (Matzler *et al.*, 2003). Following this is graph to presents the results to identify the attributes into excitement factors, performance factors, and basic factors (see Figure 3. The asymmetric impact of attribute-level performance on overall satisfaction).

**Figure 3:** The Asymmetric Impact of Attribute-Level Performance on Overall Satisfaction



In another way to compare the results, IPA matrix was constructed for the patient into two groups (dissatisfied and satisfied customers). Both of groups have different results for satisfaction level in Four quadrants in two-dimensional matrix of IPA. Fig. 4 is show IPA matrix for dissatisfied customers (a) and satisfied customers (b) based on level of patient satisfaction towards the performance of resident.

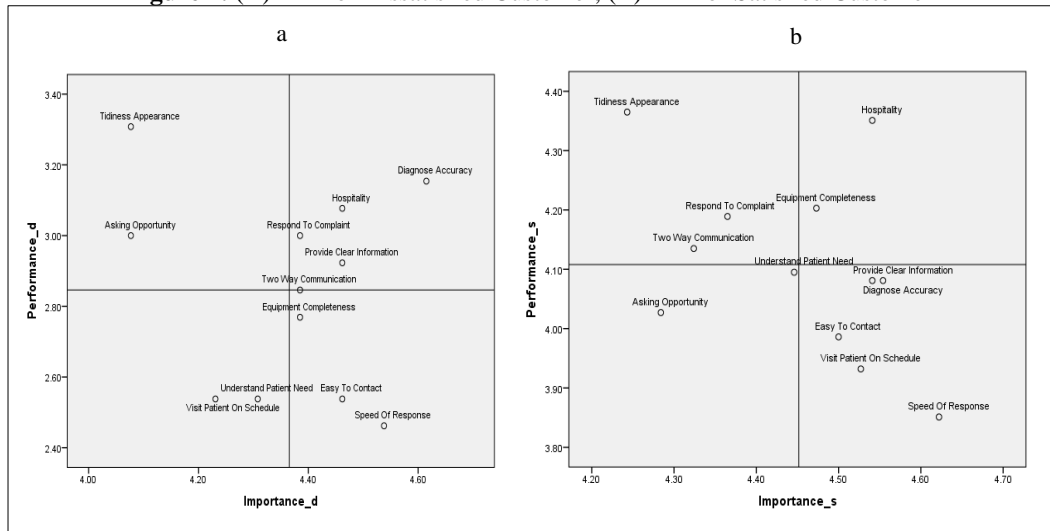
The results of IPA for dissatisfied customer shows that tidiness appearance and asking opportunity are in the area of “possible overkill”. Then, visit patient on schedule and understand patient need are “prioritized low”. Considering results of three-factor theory analysis, these results are misleading. That visit patient on schedule and understand patient need are basic factors. It becomes requirements of hospital to fulfil it and it cannot be low prioritize. If the performance of basic factors decreased, it would become serious threat (move to Quadrant IV). It is also happened on the results of IPA for satisfied customers. It suggests that understand patient need is in the area of “prioritized low”. As already described before, understand patient need is basic factors that hospital should decide to improve it with high priority because it necessary.

### 4.3. Cluster Analysis Result

This research also conducts cluster analysis in order to grouping the respondents that have similar characteristic into same group. It using K-means method for cluster analysis based on a set of specified variables. In this research, the respondents grouped based on their perceptions through

performance of resident in internal medicine department and classified into two clusters. It also classified by age and monthly salary of each respondent. It using Z score of each attributes in order to make the number as data input are standardized. Following this is results of cluster analysis that has been conducted.

**Figure 4:** (A) IPA for Dissatisfied Customer; (B) IPA for Satisfied Customer



From the Table 4 it can be seen that number of Significance (Sig.) for all of attributes are .000, exclude Age Code and Salary Code (see Table 4). It means all of attributes have significance difference between each cluster. It also can be concluded that perception of respondents in each cluster are different towards performance of resident on each attributes.

**Table 4:** ANOVA Result of Cluster Analysis

|                           | Cluster      |          | Error        |           | F            | Sig.        |
|---------------------------|--------------|----------|--------------|-----------|--------------|-------------|
|                           | Mean Square  | df       | Mean Square  | df        |              |             |
| Visit Patient On Schedule | 38.038       | 1        | .564         | 85        | 67.414       | .000        |
| Speed Of Response         | 34.008       | 1        | .612         | 85        | 55.599       | .000        |
| Respond To Complaint      | 23.846       | 1        | .731         | 85        | 32.612       | .000        |
| Asking Opportunity        | 22.365       | 1        | .749         | 85        | 29.874       | .000        |
| Diagnose Accuracy         | 22.649       | 1        | .745         | 85        | 30.389       | .000        |
| Provide Clear Information | 22.698       | 1        | .745         | 85        | 30.478       | .000        |
| Hospitality               | 27.998       | 1        | .682         | 85        | 41.029       | .000        |
| Easy To Contact           | 32.770       | 1        | .626         | 85        | 52.330       | .000        |
| Understand Patient Need   | 39.462       | 1        | .548         | 85        | 72.075       | .000        |
| Two Way Communication     | 38.779       | 1        | .556         | 85        | 69.805       | .000        |
| Tidiness Appearance       | 24.216       | 1        | .727         | 85        | 33.316       | .000        |
| Equipment Completeness    | 34.684       | 1        | .604         | 85        | 57.450       | .000        |
| <b>Age Code</b>           | <b>.849</b>  | <b>1</b> | <b>1.002</b> | <b>85</b> | <b>.847</b>  | <b>.360</b> |
| <b>Salary Code</b>        | <b>1.902</b> | <b>1</b> | <b>.989</b>  | <b>85</b> | <b>1.922</b> | <b>.169</b> |

The result of cluster analysis shows the comparison of point in every cluster (see Table 3). Based on this comparison it can be seen that each cluster has similar characteristics from their assessment towards performance of resident for each attributes. Number with sign minus (-) in the table, statistically represent that the scale respond of the respondent in the questionnaire is below average. In the managerial situation, this (-) score indicate that the expectations from member group of this cluster are high and it becomes important for their satisfaction level. While, number with sign positive (+) statistically represent that the scale respond in the questionnaire is above average. In the managerial situation, this (+) score indicate that the expectations from member group of this cluster are medium and tend to be low. It can be conclude that smaller the number, level importance and expectations of patient towards the performance are higher, vice versa.

**Table 5:** Result of Cluster Analysis

|                           | Cluster        |                |
|---------------------------|----------------|----------------|
|                           | 1              | 2              |
| Visit Patient On Schedule | .33773         | -1.29461       |
| Speed Of Response         | .31933         | -1.22411       |
| Respond To Complaint      | .26740         | -1.02504       |
| Asking Opportunity        | .25896         | -.99270        |
| Diagnose Accuracy         | .26060         | -.99897        |
| Provide Clear Information | .26088         | -1.00005       |
| Hospitality               | .28974         | -1.11068       |
| Easy To Contact           | .31347         | -1.20163       |
| Understand Patient Need   | .34399         | -1.31861       |
| Two Way Communication     | .34100         | -1.30716       |
| Tidiness Appearance       | .26947         | -1.03296       |
| Equipment Completeness    | .32249         | -1.23621       |
| <b>Age Code</b>           | <b>-.05044</b> | <b>.19336</b>  |
| <b>Salary Code</b>        | <b>.07552</b>  | <b>-.28949</b> |

Based on Table 5 it can be seen that Cluster 1 are patient with characteristics that have lower expectations towards performance of resident than Cluster 2. It is because their numbers are positive and higher than Cluster 2. The members of this cluster are concern with attributes asking opportunity, diagnose accuracy, and provide clear information (smallest number on Cluster 1). Frequency of Cluster 1 are sixty nine patients that consist of patient with range age 30-39 years old and has monthly salary Rp 1,000,000-Rp 2,000,000.

**Table 6:** Number of Cluster's Member

| Cluster        | 1 | 69.000        |
|----------------|---|---------------|
|                | 2 | 18.000        |
| <b>Valid</b>   |   | <b>87.000</b> |
| <b>Missing</b> |   | <b>.000</b>   |

Cluster 2 are consists of patient with characteristics that have high expectations towards performance of each attributes. It is because their numbers are negative and smaller than Cluster 1. Their numbers indicate that they are difficult to feel satisfied. This cluster is very concern with attributes understands patient need, two-way communication, and visit patient on schedule (smallest number on Cluster 2). Frequency of this cluster are eighteen patients that consist of patient with range age 40-49 years old and has monthly salary Rp 1,000,000-Rp 2,000,000.

## 5. CONCLUSION

Based on the analysis by comparing results of three-factor theory analysis and IPA there is differences conclusions. The IPA analysis indicates misleading for managerial to make decisions. Three-factor theory of customer satisfaction help management to classify the quality attributes into basic, performance, and excitement that can suggest proper recommendation. Then for cluster analysis it can be seen that age and level of monthly salary patient are influencing their expectations, level of importance, and level of satisfaction.

It can be conclude the result from survey and depth-interview that was conducted shows there are five attributes that classified as basic factor; (1) understand patient need; (2) easy to contact; (3) two way communication; (4) visit patient on schedule; and (5) speed of response. Attributes that classified as performance factor are equipment completeness, respond to complaint, and hospitality. While attributes that classified as excitement factor is diagnose accuracy. Based on these results there some of recommendations that proposed to improve Internal Medicine Department of Hasan Sadikin Hospital provide better services. These recommendation consists of prioritize to fulfilled the attribute that classified as basic factor, make excitement factor such as unique things that stand out from another hospital, and increasing the performance factor to be more competitive with another hospital to help Hasan Sadikin Hospital to achieve International Accreditation from JCI.

In additional for the recommendations, the hospital can create the segment of the patient based on their characteristics to increasing patient satisfaction level. In this case, there are two cluster that more dominant on Cluster 1 that have low expectations of performance resident and typical patient that concern with attributes related to knowledge and competence of resident. It is different with Cluster 2 that has high expectations of performance resident. They are patient with typical more concern with attributes related to form of resident's attention. So, the hospital can provide different services for each cluster appropriate with their characteristics.

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