

Quality Function Deployment and Kano Model for Service Quality Improvement of UNEJ Medical Center

¹Didik Pudjo Musmedi, ²Evi Nurul Fadhilah, ³Tatok Endhiarto, ⁴Vanya Pinkan Maridelana, ⁵Markus Apriono

Faculty of Economics and Business
University of Jember, Jember, Indonesia

Abstract: The competition among health care industries in Indonesia is rapidly developing. UNEJ Medical Center (UMC) is a health service unit provided by the University of Jember, Indonesia. UMC's improvement of service quality is a must to fulfill the customer expectation and compete with other health care providers. This study aims to improve UMC's service quality by using the Quality Function Deployment (QFD) Kano Model. The type of research is the quantitative descriptive method. The Lemeshow formula was performed to determine the number of samples. Forty-two patients and five staff were selected as respondents using accidental sampling. Primary data and secondary data were used to answer the research question. The data collected were analyzed by performing the QFD analysis, including the House of Quality and Kano model. Based on the analysis result, there were eight attributes recommended for improvement. These attributes are the accuracy of prescription, a friendly doctor, the accuracy of doctors' diagnoses, obtaining the correct information, a rapid examination, a medical ward, friendly UMC staff, and a well-ordered queue.

Index Terms: service quality, Quality Function Deployment (QFD), kano model

I. INTRODUCTION

The competition among manufacturing and service industries in Indonesia is rapidly developing. This condition requires companies to improve the quality of service to win against the competition, including the health service company. Based on the [1], the health services sector in Indonesia grew by 10.46% in 2021. This growth was the highest compared to other sectors and much higher than Indonesia's economic growth of 3.69%. Despite this high growth, there are still healthcare challenges, including how to improve the service quality of health service in Indonesia.

Service quality is a measure of how a company fulfills consumer desires and the accuracy of service delivery to meet consumer expectations. Higher customer satisfaction indicates that the quality of service provided by the company is optimized. According to [2] a company that can consistently maintain its service quality will not lose to compete with other companies engaged in the same industry. Measuring service quality is a challenge for companies because many intangible factors determine customer satisfaction. According to [3], two factors affect the service quality, namely the expected service and the perceived service. If the perceived service is in accordance with the expected service, then the services provided have met the quality expected by consumers. A structured method that can be used to develop a service that fulfills the consumer's needs and expectations is Quality Function Deployment (QFD).

According to Piri and Mende, Quality Function Deployment (QFD) is the translation of a set of consumer needs priorities subjectively into a set of system levels during the conceptual process of the design system[4]. QFD is a popular method to create a high-quality service[5]. Jaiswal [6] stated that QFD is a method or tool capable of translating the voice of the customer into a service design that will satisfy the customer. QFD also refers to a comprehensive quality process to achieve consumer satisfaction and business growth that can be applied in all types of business industries. Kano Model, in general, provides a unique way of distinguishing the impact of different customer needs (voice of customers) on total customer satisfaction in the early stage of product/service development. This will substantially lead to a much higher degree of effectiveness and efficiency in the subsequent processes. Some examples that showed the importance of integrating the Kano Model in QFD could be found in [7]. Moreover, The Kano model is used to classify customer requirements and technical responses before being inputted into Quality Function Deployment (QFD). Inputs from QFD include customer requirements and technical responses which are included in the "must-be", "one-dimensional", "attractive", "indifference" and "reverse" categories. Then, based on Kano's questionnaire, the value of consumer satisfaction and dissatisfaction can be calculated and input into the planning matrix.

UNEJ Medical Center (UMC) is a health service unit provided by the University of Jember, Indonesia. The UNEJ Medical Center targets students, lecturers, and employees of the University of Jember and the people of Jember Regency. The UMC needs to compete with other hospitals and clinics located in Jember. Therefore the improvement of the service quality of UMC is a must to fulfill the customer expectation. Some factors make people less interested in seeking treatment at UMC, such as the ability of doctors to treat patients, limited waiting chairs, and lack of patient knowledge about the health care system. If this continues, it will undoubtedly have a negative impact on UMC. Unej Medical Center will lose its existence, and it will not be able to survive the competition between increasingly stringent health care clinics in Jember District. Thus, Unej Medical Center needs to determine the solution to these problems immediately. This study aims to improve the service quality of UMC by using QFD and Kano Model. The results of this study are recommendations or suggestions for improvement that can be taken into consideration by Unej Medical Center (UMC) in improving service quality to attract customers who seek treatment at UMC.

II. RESEARCH METHOD

The study was conducted on patients and staff of General Poly at Unej Medical Center (UMC). The type of research is a quantitative descriptive method that aims to explain a phenomenon using number and statistic processing. To explore patients' behavior, we

conducted interviews with UMC management, nurses, and employee and distributed questionnaires to UMC patients. The Lemeshow formula was performed to determine the number of samples. Then, 42 patients and five staff were selected using accidental sampling [8]. Primary data and secondary data were used to answer the research question. Primary data were obtained by interviewing some interviewees and from the results of questionnaires. At the same time, secondary data sources were collected from clinical documents, such as clinic profiles, previous research reports, and clinical performance data. Furthermore, the data collected were analyzed by performing the QFD analysis, including the House of Quality and Kano model.

III. RESULT AND DISCUSSION

Respondent Characteristics

This research used 42 people as respondents at Unej Medical Center (UMC) in analyzing attributes of service quality. Based on gender, 25 respondents were women, and 17 respondents were men. Most of the respondents' age (32 respondents) were 17-22. Meanwhile, 5 respondents were aged 23-28 years, 3 respondents were aged 34-39 years, and 2 respondents were aged over 40 years. Moreover, 38 respondents were students, 2 respondents worked as private employees, 1 respondent worked as a civil servant, and 1 respondent worked as an entrepreneur.

Result of Quality Function Development (QFD)

The attribute of patient preferences are shown in table 1, and the house quality matrix developed from the service attributes is provided in figure 1.

Table 1. Service attributes needed

No	Attributes of Patient Need
1	Accuracy of Prescription
2	Friendly doctors
3	Accuracy of doctors' diagnoses
4	Obtaining the correct information
5	Rapid examination
6	Doctor's attention to patients
7	Medical ward
8	Waiting Room
9	Friendly UMC staff
10	24-hours service
11	Ease of making health certificates
12	Well-ordered queue

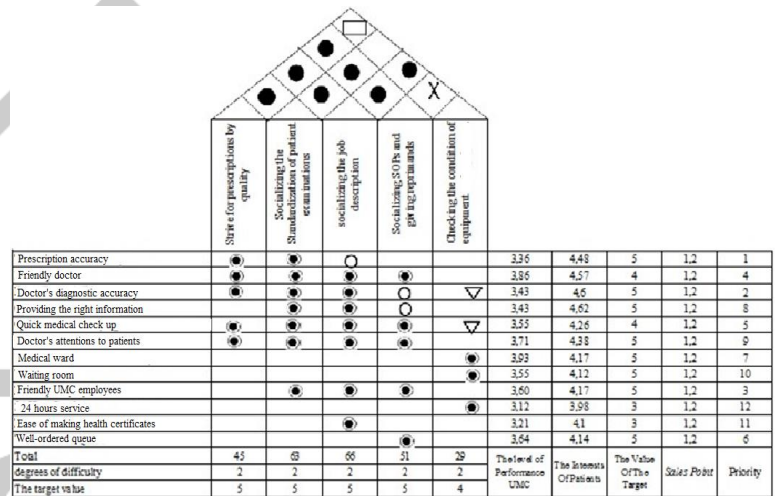


Figure 1. House of quality

House of Quality that has been constructed based on calculations has charts containing numbers and symbols that have their meaning, including:

- a) The left chart contains various service attributes patients need when visiting Unej Medical Center (UMC) general poly service. Starting from the accuracy of prescribing, friendly doctors, proper doctor diagnosis, obtaining the correct information, rapid examination, doctor's attention to patients, treatment room, waiting room, friendly staff, 24-hour service, ease of making health certificates, and well-ordered queue.
- b) The upper chart consists of several technical needs that can be implemented by Unej Medical Center (UMC) to meet patient's needs, including striving for prescribing according to quality, socializing standardization of patient examinations, socializing the job description, socializing SOPs, and giving reprimands, and checking the condition of equipment periodically.
- c) The right chart contains numbers obtained from the calculation of:
 - i. Performance Level of General Poly Services at Unej Medical Center (UMC)
In the performance level column, it can be seen that the overall performance of UMC poly services has a value close to 4, such as a treatment room with a value of 3.93.
 - ii. Level of Patient Needs
In the Patients' Needs column, it can be seen if the value of the patients' need for the attribute "Obtaining the right information" and "Doctors diagnosis accuracy" has a higher value than the other values, which means that the need for "obtaining the right information" and "doctor diagnosis accuracy" is the top priority of patients in using the general poly services of UMC.
 - iii. Target Value
The target value column shows that attributes of the patient's needs which consist of the accuracy of prescription, doctors diagnosis accuracy, obtaining the correct information, doctor's attention to the patient, medical ward, waiting room, friendly staff, and well-ordered queue have higher target value than the others, which means that UMC needs to be more prioritizes fulfilling those five attributes of the patient's needs.
 - iv. Sales Point
In the sales point column, it can be seen that the sales point value on all attributes of the patient's needs, except obtaining the correct information, doctor's attention to the patient, medical ward, waiting room, 24-hour service, the ease of making health certificates, and well-ordered queue, have a value of 1.5, which means that if there are improvements to the attributes of the patient's needs, then the possibility of the benefits that UMC will receive will be even greater. Meanwhile, the attributes of obtaining the correct

information, doctor's attention to the patient, medical ward, waiting room, 24-hour service, the ease of making health certificates, and well-ordered queue have a sales point value of 1.2, which means that improvements to the attributes of the patient's needs may increase the UMC benefit moderately.

v. Priority of Patient's Needs

In the priority column, it shows that the accuracy of prescribing, the accuracy of diagnosis of the doctor, friendly staffs, friendly doctors, and rapid examination have a higher priority value compared to the other attributes, which means that UMC needs to prioritize those five attributes of the patient's needs to be fulfilled and improve the service quality.

d) The middle chart consists of various symbols that describe the level or value of the relationship between the technical needs of UMC and the attributes of the patient's needs. The technical needs of Unej Medical Center (UMC) that do not have a relationship with the attributes of the patient's needs are left blank or worth the same as 0. The technical needs of UMC, which have a weak relationship with the attributes of the patient's needs, are symbolized by symbols worth 1. The technical needs of UMC, which have a moderate relationship with the attributes of the patient's needs, are symbolized by symbols that are worth 3. Meanwhile, the technical needs of UMC, which have a strong relationship with the attributes of the patient's needs, are symbolized by symbols that are worth 9.

e) The lower middle chart consists of the total value of the relationship between the technical needs of UMC and the attributes of the patient's needs and the degree of difficulty and target values of each of the technical needs of UMC. In the "total" row, it is presented that the technical needs that have the highest number of relationship values with the attributes of patient needs are technical requirements "socializing the job description." Therefore, socializing the job description are technical needs that UMC can prioritize to meet patients' needs.

f) The upper section chart consists of various symbols that describe the level or value of the relationship between the technical needs of Unej Medical Center (UMC). Technical requirements that have no connection with other technical needs are left blank or worth the same as 0. Technical needs with a strong positive relationship with other technical needs are symbolized by a symbol worth +9. Technical requirements in which relationships are positive with other technical needs are symbolized by a symbol worth +3. Technical requirements with a negative relationship with other technical needs are symbolized by symbols worth -3. Technical requirements with a strong negative relationship with other technical needs are symbolized by a * symbol with a value of -9. Based on figure 1 above, it can be seen that "Socializing Standardization of patient examinations" are technical needs that have a strong positive relationship with all other technical needs, so it can be concluded that UMC standardizes patient examination medical and non-medical staff can positively influence the improvements of UMC services.

Results of Analysis of the Kano Model

a) Kano category determination

The initial stage carried out in the data processing of the Kano model is to categorize the respondents' answers in the Kano category by matching respondents' answers to functional and dysfunctional statements, which are then mapped with Kano categories. The categories based on respondents' answers can be seen in the following table 2:

Table 2. Recapitulation of respondents' answers based on the Kano model

Attributes	A	M	O	I	Total	Grade
Accuracy of Prescription	3	23	14	2	42	M
Friendly doctors	3	19	15	5	42	M
Accuracy of doctors' diagnoses	1	20	14	7	42	M
Obtaining the correct information	5	16	14	7	42	M
Rapid examination	0	19	7	16	42	M
Doctor's attention to patients	11	10	11	10	42	A
Medical ward	6	13	3	20	42	M
Waiting Room	4	12	2	24	42	I
Friendly UMC staff	9	15	10	8	42	M
24-hours service	5	4	15	18	42	O
Ease of making health certificates	2	6	15	19	42	O
Well-ordered queue	5	18	4	15	42	M

b) Analysis of Kano Diagrams

Based on the assessment of respondents' answers with Kano diagrams, the interpretation is as follows:

i. One Dimensional

An attribute that falls into the category is essential to prioritize by UMC because satisfaction levels are linearly related to performance attributes. The factors included in this category are 24-hour service and the ease of making health certificates.

ii. Attractive

An attribute that falls into the category needs to be maintained because the level of patient satisfaction will be very high with the increase in the performance of the attributes. However, the decrease in the performance of the attribute will not cause a decrease in the level of satisfaction. The factor included in this category is the doctor's attention to patients.

iii. Must be or basic need

Must be is a weak statement of satisfaction but more positive than neutral. The factors included in this category are the accuracy of the prescription, friendly doctor, the accuracy of doctors' diagnosis, obtaining the correct information, rapid examination, medical ward, friendly staff beside doctors, and well-ordered queue.

An attribute in this category is still considered necessary by the patient because the patient becomes dissatisfied if the performance of the attribute concerned is low. Nevertheless, patient satisfaction will not increase far above neutral even though the performance of these attributes is high.

Indifferent

An attribute in the category of less attention by patients so that the presence or absence of these attributes will not affect the increase or decrease in the level of customer satisfaction. The factor included in this category is Waiting Room.

c) Kano Model Assessment

Based on table 3 below, the attribute that, if no improvement is made, will reduce the highest level of patient satisfaction is "accuracy of prescription," at 88%.

Table 3. Recapitulation of Kano Assessment

Attributes	A	M	O	I	Total	Better	Worse
Accuracy of Prescription	3	23	14	2	42	0,40	0,88
Friendly doctors	3	19	15	5	42	0,43	0,81
Accuracy of doctors' diagnoses	1	20	14	7	42	0,36	0,81
Obtaining the correct information	5	16	14	7	42	0,45	0,71
Rapid examination	0	19	7	16	42	0,17	0,62
Doctor's attention to patients	11	10	11	10	42	0,52	0,50
Medical ward	6	13	3	20	42	0,21	0,38
Waiting Room	4	12	2	24	42	0,14	0,33
Friendly UMC staff	9	15	10	8	42	0,45	0,60
24-hours service	5	4	15	18	42	0,48	0,45
Ease of making health certificates	2	6	15	19	42	0,40	0,50
Well-ordered queue	5	18	4	15	42	0,21	0,52

Discussion

a) The Accuracy of Prescription.

The attribute of prescription accuracy produces a scale of patient needs and normalization of the scale of patient needs of 7.53 and 10.49%, respectively. Based on the Kano model, when prescription accuracy is improved, it can increase patient satisfaction by 40%, and when it is not improved, satisfaction will be reduced by 88%. The accuracy of prescriptions is an attribute that needs to be improved because errors in analyzing doctors' prescriptions can be fatal for patients. This result is also reinforced by the study [9], which said that prescription services were the most crucial factor in a hospital. Provision of prescription drugs according to the patient's condition must be prioritized because the accuracy of the dosage at each prescription of drugs to the patient is an essential factor in the effectiveness and safety of the patient's treatment.

b) Friendly Doctors

Based on the analysis results, the doctor's friendly attributes resulted in a patient's need scale of 6.03 and a normalization of the need scale of 8.41%. The results of the Kano model analysis show that if this attribute is improved, it can increase patient satisfaction by 43%, and when not improved, it can reduce satisfaction by 81%. Providing a friendly doctor is vital in UMC, particularly in General Poly Service. It is stated in the medical code of ethics in the article regarding the doctor's obligation to patients. The general poly doctor at Unej Medical Center (UMC), that is friendly to patients, will give a good impression. Besides that, when the patient is satisfied with doctor services, the patient will intend to re-visit again when they need treatment.

c) The accuracy of doctors' diagnoses

The accuracy of doctors' diagnoses is essential, and the doctor of Unej Medical Center (UMC) must provide a correct diagnosis of the patient. The accuracy of a doctor's diagnosis generates data on the scale of patient needs and normalization of the scale of patient needs by 7.52 and 10.48%, respectively. In the Kano model, it is identified that if this attribute is improved, it can increase patient satisfaction by 36%, and when not improved, it can reduce satisfaction by 81%. If the diagnosis misses, then the doctor's actions can be considered malpractice, harming the patient. Otherwise, if doctors can provide a proper diagnosis, consumers would be satisfied with the service of the general poly at Unej Medical Center (UMC).

d) Obtaining the Correct Information

Based on the results, the attribute of obtaining the correct information results in a patient's need scale of 5.99 and a normalization of the need scale of 8.35%. The results of the Kano model analysis present that if this attribute is improved, it can increase patient satisfaction by 43%, and when not improved, it can reduce satisfaction by 71%. At Unej Medical Center (UMC), information related to the health of patients is summarized in the medical record UMC, which is a confidential document that UMC must maintain from anyone other than the patient concerned. Furthermore, obtaining the correct information is the patient's right as regulated in Law No.29 of 2004 concerning the right of patients to receive health services [10]. If Unej Medical Center (UMC) can provide the correct information, then general poly patients at Unej Medical Center (UMC) will be satisfied with the services received.

e) Rapid Examination

The general poly doctor of Unej Medical Center (UMC) should be able to examine patients rapidly. The attribute of rapid examination produces a scale of patient needs and normalization of the scale of patient needs of 6.01 and 8.37 %, respectively. Based on the Kano model, when prescription accuracy is improved, it can increase patient satisfaction by 17%, and when it is not improved, satisfaction will be reduced by 62%. Unrapid examination or treatment can affect the patient's safety and health. This is in accordance with Law No. 29 of 2004 concerning the standard of service for administering medical practice [10].

f) Doctors' Attention to Patients

Based on the Kano model analysis, the attribute of doctor attention is one of the critical patients need attributes. The improvement of this attribute will lead to an increase in patients satisfaction by 52%. Otherwise, if there is no improvement, patient satisfaction will decrease by 50%. Giving more attention to patients in terms of more than what patients expect can make these patients feel more comfortable in delivering their health conditions to the doctor. Therefore, the doctor will be able to give a rapid and accurate diagnosis for these patients. This is also supported by Putri's research (2011) which states that good communication between doctors and patients can increase the patient's trust in health services. Indirectly, the patient will be satisfied with the health service [11].

g) Medical Ward

Unej Medical Center (UMC) physical facilities can affect patient satisfaction. The improvement of the medical ward will increase patients satisfaction by 21%, and when it is not improved, the satisfaction will decrease by 20%. One of Unej Medical Center's (UMC) general poly physical facilities is a treatment room or medical ward. Nurses and UMC staffs have an essential responsibility to make the medical ward as comfortable as possible by setting the room temperature, maintaining adequate ventilation, avoiding bad odors, maintaining cleanliness, and keeping the room neat and orderly so that patients will feel more comfortable.

h) Waiting Room

Unej Medical Center (UMC) general poly waiting room is an important part and cannot be ignored. Based on the results, the attribute of the waiting room results in a patient's need scale of 5.98 and a normalization of the need scale of 8.34%. The results of the Kano model analysis present that if this attribute is improved, it can increase patient satisfaction by 14%, and when not improved, it can reduce satisfaction by 33%. In the waiting room, many people with various health problems sometimes have to sit waiting for a long time, even hours, waiting to be examined. Thus, the waiting room should be maintained so that patients can feel comfortable while waiting.

i) Friendly UMC Staff

Unej Medical Center (UMC) staff should be friendly to all patients because, with such hospitality, patients will feel well served by UMC. The attribute of friendly staff generates a scale of patient needs and normalization of the scale of patient needs of 7.51 and 10.46 %, respectively. Based on the Kano model, when prescription accuracy is improved, it can increase patient satisfaction by 45%, and when it is not improved, satisfaction will be reduced by 60%. The opinion of Dr. Nafsiah Mboi also supports this, SpA, MBA in the Mayapada Hospital 2013 Grand Opening, which said that to support optimal health services, then good, friendly, and empathetic human resources were needed and attention to patients and also polite attitude [12].

j) 24-hours service

Based on the results, the attribute of 24-hours service results in a patient's need scale of 3.58 and a normalization of the need scale of 4.99%. The results of the Kano model analysis present that if this attribute is improved, it can increase patient satisfaction by 48%, and when not improved, it can reduce satisfaction by 45%. A 24-hour service is a patient's need for Unej Medical Center (UMC), but only a small number of patient respondents think this is necessary. According to respondents, the whole UMC service is not needed for 24 hours. Only Emergency Room (ER) services should be open 24 hours to emergency services.

k) Ease of Making Health Certificate

The attribute of the ease of making a health certificate produces a scale of patient needs, and the normalization of the scale of patient needs is 3.59 and 5.01 %, respectively. Based on the Kano model, when prescription accuracy is improved, it can increase patient satisfaction by 40%, and when it is not improved, satisfaction will be reduced by 50%. The health certificate and sick leave letter, especially for those who are students or employees. Health certificates and sick leave letters are helpful as evidence of the presence of an individual in an organization. Therefore, the ease of making a health certificate is needed and can affect patient satisfaction.

l) Well-ordered Queue

The queue time is one of the potential components as a cause of dissatisfaction. Base on the analysis results, the improvement of the queue will increase patients satisfaction by 21%, and when it is not improved, the satisfaction will decrease by 52%. Patients will consider general poly services at UMC poor when there are long queues. If the queue time of the general poly service is long, it will reduce patient comfort and influence the image of the UMC, which can affect the patient's intention to re-visit. This is supported by the results of outpatient patient satisfaction surveys in Pandanaran Semarang Health Center in 2005, concluding that 50% of people stated they were dissatisfied with outpatient services because 30% of people stated that the waiting time was long, 20% of people say doctors come not on time, 20% of people declare queues at long counters, and 30% say less waiting rooms [13].

IV. CONCLUSION

There are 12 attributes of patients' needs for general poly services to be fulfilled and improved by the Unej Medical Center (UMC). Based on the order of priorities, the attributes of the patient's needs consist of the accuracy of prescription, a friendly doctor, the accuracy of doctor's diagnosis, obtaining the correct information, rapid examination, doctor's attention to the patient, medical ward, waiting room, friendly UMC staff, 24-hour service, ease in making health certificate, as well as well-ordered queues. Besides attributes of patient needs, the Unej Medical Center (UMC) can perform five technical needs to fulfill 12 attributes of the patient's needs for the general poly service. Based on the priority sequence of technical requirements that UMC can implement, among others, striving for prescriptions by quality, socializing the standardization of patient examinations, socializing the job description, socializing SOPs and giving reprimands, and checking the condition of equipment periodically. To improve the quality of competition between health clinics in Jember, eight attributes were recommended for improvement. These attributes are based on the scale results of the patient's needs on Quality Function Deployment (QFD). It includes the category of must-be in patient preferences based on the Kano model. These attributes are the accuracy of prescription, a friendly doctor, the accuracy of doctor diagnostic, obtaining the correct information, a rapid examination, a medical ward, friendly staff, and a well-ordered queue.

REFERENCES

- [1] A. Purwanti, Kinerja Sektor Kesehatan Kian Meningkat di Tengah Pandemi. Jakarta: Kompas, 2021.
- [2] Dana Putra R, "Analisis Quality Function Deployment Guna Meningkatkan Mutu layanan Instalasi Rawat Inap pada Puskesmas Tegalsari Banyuwangi". Undergraduate Thesis: Universitas Jember, 2016.
- [3] F. Tjiptono, Manajemen Pemasaran Jasa. Yogyakarta : C.V Andi Offset, 2006
- [4] N. Piri, A. Sutrisno, and J. Mende, "Penerapan Metode Quality Function Deployment (QFD) Untuk Menangani Non Value Added Activity Pada Proses Perawatan Mesin", Jurnal Online Poros Teknik Mesin Volume 6 Nomor 1, 2017.
- [5] D. Gharakhani and J. Eslami, "Determining Customer Needs Priorities For Improving Service Quality using QFD," International Journal of Economics and Management Sciences Vol. 1, No. 6, 2012, pp. 21-282011.
- [6] E. S. Jaiswal, "A Case Study on Quality Function Deployment (QFD)," IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE) ISSN:2278-1684 Volume 3, Issue 6 (Nov-Dec. 2012), pp. 27-35, 2012
- [7] K.C. Tan and T.A. Pawitra, "Integrating SERVQUAL and Kano's Model into QFD for Service Excellence Development, Managing Service Quality," 11(6), 418-430, 2001.
- [8] Sugiyono, Metode Penelitian Manajemen. Bandung: Penerbit Alfabeta, 2014
- [9] Mulyono, "Program Bantu Analisis Ketepatan Pemberian Obat Dari Resep Dokter". Undergraduate thesis: Duta Wacana Christian University, 2000. Retrieved from <http://sinta.ukdw.ac.id>
- [10] Pemerintah Indonesia, Undang-Undang No. 29 Tahun 2004 tentang Praktik Kedokteran. Lembaran Negara RI Tahun 2004, No. 60. Jakarta: Sekretariat Negara, 2004.
- [11] Putri Rachmania, "Pola Komunikasi Dokter Terhadap Pasien Dalam Proses Penyembuhan Di Klinik Makmur Jaya". Undergraduate thesis: UIN Syarif hidayatullah Jakarta, 2011.
- [12] Agung, Pesan Menkes untuk Petugas Medis: Berlakulah Ramah dan Santun pada Pasien. Jakarta: detik Health, 2013.
- [13] Puskesmas Pandanaran, "Survei Kepuasan Pasien Rawat Jalan di Puskesmas Pandanaran Semarang Tahun 2005". Semarang, 2005.

