Analysis of Website Quality on Telemedicine User Satisfaction in Indonesia Based on Measurement of End User Satisfaction with the Webqual Method 4.0 (Halodoc Case Study)

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Abstract— *The rapid development of technology has made progress in all aspects. Website is a tool that can be used to exchange information especially in medical activities, this can be categorized as telemedicine. This study aims to analyze the value quality from three aspects in the webqual and to know the level satisfaction users of the HALODOC website based on the usability, information quality, and service interaction quality. The approach of this research is by using quantitative method, with the Webqual 4.0 method. The data were collected by spreading out online questionnaires to the 150 respondents users and the visitors of HALODOC website. The results shows that the overall assessment of the quality of the website gives a positive respond and shows that usability, information quality and service interaction had an effect on user satisfaction.*

Keywords— *Webqual 4.0, Telemedicine, Halodoc.*

I. INTRODUCTION

In this era of globalization, the internet's presence is seen as having a significant impact on global growth, particularly in Indonesia. According to a survey conducted by the Indonesian Internet Service Association (APJII), more than half of Indonesia's population, or 196.71 million individuals, would be online in 2019-2020. The rate of growth continues to be around 8.9% every year, with internet penetration reaching 73.7 percent in 2019-2020. It is clear from this description that the Indonesian people have a great need for internet-based information. Many parties, both individuals and institutions, have chosen the website as a medium for conveying information, publications, and other materials because of the website's ability to disseminate information rapidly and easily.

Based on the above explanation, one of the information technologies that the community need is health and lifestyle. This notion is also known as "telemedicine" application. PT Media Dokter Investama, which formed HALODOC, is an example of a corporation that uses telemedicine. In addition to medical services, HALODOC provides health, lifestyle, illness kinds, first-aid treatment, and other information in the form of articles that can be read on the HALODOC website.

As a result, practicality is required as a beneficial medium for a decent website portrayal. As a result, we need to measure the website's quality so that we may improve it from the perspective of the end user and bring satisfaction to the user. WebQual is one of the most generally used ways or strategies for assessing the quality of a website based on the impressions of users or visitors. Webqual is a method for assessing the quality of a website based on user feedback.

WebQual 4.0 is a metric for assessing the quality of a website based on three factors: usability, information quality, and service interaction quality. This method is considered sufficient for a research entitled "Analysis of Telemedicine User Satisfaction in Indonesia Based on Measurement of End User Satisfaction Level with Webqual 4.0 Method (Case Study of Halodoc)".

In accordance with this title, this study aims to analyze how the assessment of the quality of a website based on usability, the information quality and the service interaction quality and to analyze whether the usability, the information quality and the service interaction quality affect user satisfaction. The following is a summary of previous research:

1. Himawat, Dyah, and Niken (2017), "Analisis Kualitas Layanan Website E-Commerce Terhadap Kepuasan Pengguna Menggunakan Metode Webqual 4.0". According to the findings of the overall research, the Bukalapak.com website is the best in all categories. The WQI value of the Bukalapak website, according to the respondents, was in the categories of usability (0.70), information quality (0.70), and service interaction quality (0.70). (0.65). Usability is the most crucial component in determining consumer satisfaction.

2. Rizky Esa, and Otong Saeful (2019). "Analisis Pengukuran Kualitas Website Terhadap Kepuasan Pengguna Berdasarkan Webqual 4.0". The result of this study show that the quality of the Website, which includes usability, information quality, and service interaction quality, has a substantial impact on Ebill Tour Organizer's customer happiness. It can be seen from the relationship between the independent variables that the customer satisfaction variable has a positive link.

3. Diana, Nuri, and Maria (2018), "Analisis Kualitas Website Provinsi Bengkulu Menggunakan Metode Webqual 4.0". The result is respondents agreed that the e-Government website in Bengkulu Province has usability, quality of information shown, simply the interaction, and general care of the e-government website in Bengkulu Province.

II. THEOROTICAL BASIC

A. Telemedicine

Telemedicine is the treatment, diagnosis, consultation, and treatment of patients via audio, visual, and data communications, as well as the interchange of medical data and remote scientific conversations.

Based on the foregoing, we can deduce that the scope of telemedicine is quite broad, encompassing the provision of long-distance health services (including clinical, educational, and administrative services) via the transmission of information (audio, video, and graphics) via telecommunication devices (audio-interactive two-way video, computers, and telemetry) involving doctors, patients, and other healthcare professionals. In simple terms, telemedicine is when a doctor and a patient talk over the phone about a patient's problem (Coelho, 2011).

B. Website Quality

According to Rayport, J., F., and Jaworski, B., J. (2001), a good website consists of seven design aspects known as the 7Cs, which include:

1. Content, layout, and design
2. Content, text, images, audio, and videos;
3. Community, or how the site allows users to communicate with one another
4. Customization refers to a site's ability to offer itself to different users or to allow users to personalize it.
5. Communication, or how the site allows users to communicate with one other, or two-way communication;
6. Connection, or the site's ability to connect with other sites; and
7. Commerce, or the site's ability to conduct commercial activities.

C. Webqual 4.0

WebQual is one of the most generally used ways or strategies for assessing the quality of a website based on the impressions of users or visitors (Candra, 2012). Webqual is a method for assessing the quality of a website based on user feedback (Barnes & Vidgen, 2002).

Usability, information quality, and service interaction quality are the three dimensions of Webqual, which describe the quality of a website. Navigation, website appearance, website design, user convenience, and the image to be sent to users are all aspects of usability.

Information is critical to the success of a website; information quality refers to whether or not information is appropriate for user needs in terms of accuracy, relevancy, and structure. This includes information that is trustworthy, factual, current, on subject, and simple to comprehend, among other things, a sense of security in transactions, ease of communication, a sense of security in transactions, and so on are all examples of service interaction quality.

TABEL I. Dimensions and Variables in Webqual 4.0 (Barnes & Vigen, 2002)

Dimension	Variables in Webqual 4.0
Usability	1. I find the site easy to learn to operate. 2. My interaction with the site is clear and understand. 3. I find the site easy to navigate 4. I find the site easy to use 5. The site as an attractive appearance 6. The design is appropriate to the type of site 7. The site conveys a sense of competency 8. The site creates a positive experience for me.
Information Quality	1. Provides accurate information 2. Provides believeable information 3. Provides timely information 4. Provides relevant information 5. Provides easy to understand information 6. Provides information at the night level of detail 7. Present the information in an appropriate format
Service Interaction Quality	1. Has a good reputation. 2. It feels safe to complete transactions. 3. My personal information feels secure. 4. Creates a sense of personalization. 5. Conveys a sense of personalization. 6. Conveys a sense of community. 7. Makes it easy to communicate with the organization.

III. RESEARCH METHOD

A. Subject of Study

The site www.halodoc.com is the subject of this study; HALODOC is a service built by PT Media Dokter Investama.

B. Subject of Study

The data used are primary data, and the sort of research performed is descriptive statistical research.

C. Mapping of Respondents

All HALODOC users who have accessed HALODOC from Website. The participants were 150 persons ranging in age from 18 to 60 years old, with a variety of career and educational backgrounds.

D. Data Collection

The data gathering method employed in this study was a questionnaire. A questionnaire is a data collection method in which respondents are given a set of questions or written statements to answer. A likert scale is used to assess a person's or a group's attitudes, views, and perceptions of social phenomena.

E. Webqual Instrument

With 22 question indicators, the webqual variable includes usability, information quality, and service interaction quality. Then one more variable, user satisfaction, with three indicators, was introduced. There are a total of 25 statements in the questionnaire.

F. Analysis Technique

Methods for data processing and analysis are:
- Descriptive statistics
  In order to offer an overview of the variables evaluated, descriptive analysis was used.
- Validity Test and Reliability Test

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The validity test is required to verify the extent to which the tool for assessing the assessment data instrument can accurately reflect true conditions. If a person's response to a statement is consistent or stable throughout time, the questionnaire is said to be dependable. When two or more measurements of the same symptom are taken with the same measuring device, reliability is a metric used to judge how consistent the results are.

- Classic Assumption Test

  In this research, to manage research data using the Multiple Linear Regression method is used with the classical assumption test including normality test, heteroscedasticity test, and multicollinearity test.

- Multiple Linear Regression Analysis

  The strength of a relationship between two or more variables is measured using multiple linear regression analysis, which also displays the direction of the relationship between the dependent and independent variables.

- T test and F test

  The t test is used to test the independent variable partially on the dependent variable. And the F test is to test the effect of the independent variables together on the dependent variable. The level of significance in this study was 5% (0.05). If sig t sig F is greater than 0.05, then H0 is accepted. But, if sig t and sig F are smaller than 0.05, then H0 is rejected.

IV. RESULT AND DISCUSSION

A. Descriptive Statistic

According to the results of the descriptive analysis processing, the questions have a percentage of more than 80%, and the Likert scale interval is that the index with 80% - 100% is declared as "Strongly Agree."

B. Data from the instrument test

The authors conclude that all components of the variables X1, X2, X3, and Y are valid and have a value of r count > r table based on the validity test.

TABEL II. Result of the Reability Test

Variabel	Cronbach's Alpha	N of Items
Usability	0,891	8
Information Quality	0,894	7
Service Interaction Quality	0,907	7
User Satisfaction	0,841	3

The reliability test findings of the four variables: Usability of 0.891, Information Quality of 0.894, Service Interaction Quality of 0.907, and User Satisfaction of 0.841, were deemed reliable since Cronbach's Alpha results were greater than 0.6, as shown in Table II. Instruments that are trustworthy will produce reliable data.
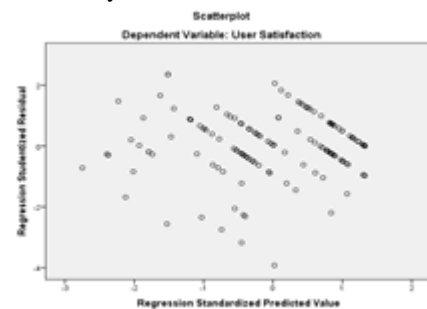
C. Classic Assumption Test

- Normality Test
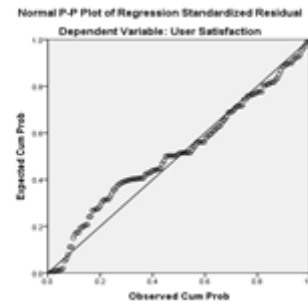
The data is spread out along the diagonal line and follows the line's direction. The results of the position of the spots that are close to or not far from the diagonal line are shown in the P-Plot. Although the data spread is slightly off-kilter, it eventually follows the diagonal line. The independent and dependent variables have a normal distribution, as evidenced by this.

- Heteroscedasticity Test

As a result, it can be inferred that the data utilized in this study has no heteroscedasticity, and thus passes the classical assumption test and is suitable for linear regression analysis.

- Multicollinearity Test

TABEL III. Result of Multicollinearity Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.295	.672		1.926	.056		
X1	.121	.037	.289	3.298	.001	.271	3.687
X2	.030	.041	.068	.743	.459	.248	4.034
X3	.222	.035	.526	6.300	.000	.298	3.353

Table III shows that the VIF value is more than 0.1 and less than 10, implying that there is no multicollinearity (no correlation) between each independent variable in this regression model based on the total value of the variable.

D. Multiple LinearRegression Analysis

TABEL IV. Result of Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.295	.672		1.926	.056
X1	.121	.037	.289	3.298	.001
X2	.030	.041	.068	.743	.459
X3	.222	.035	.526	6.300	.000

$$Y = a + b(X1) + b(X2) + b(X3) + e$$
$$Y = 1,295 + 0,121\ X1 + 0,030\ X2 + 0,222\ X3 + e$$

The following can be deduced from the preceding equation:

1. The constant coefficient in the regression has a value of positive 1.295. If the variables Usability (X1), Information Quality (X2), and Service Interaction Quality (X3) do not grow or decrease, the constant coefficient explains why. As a result, User Satisfaction (Y) is always 1.295.
2. Usability (X1) has a positive regression coefficient of 0.121. If the Usability (X1) regression coefficient has grown but Information Quality (X2) and Service Interaction Quality (X3) remain constant. As a result, the Usability regression coefficient (X1) will rise by 0.121 points.
3. The value of the regression coefficient Information Quality (X2) is 0.030. If the Information Quality (X2) regression coefficient has grown, then Usability (X1) and Service Interaction Quality (X3) are considered to be constant. As a result, the Information Quality (X2) regression coefficient value will rise by 0.030.
4. Service Interaction Quality (X3) has a positive regression coefficient of 0.222. If the regression coefficient for Service Interaction Quality (X3) has increased while Usability (X1) and Information Quality (X2) remain constant. As a result, the value of the regression coefficient for Service Interaction Quality (X3) will rise by 0.222.

E. T Test

TABEL V. Result of T Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.295	.672		1.926	.056
X1	.121	.037	.289	3.298	.001
X2	.030	.041	.068	.743	.459
X3	.222	.035	.526	6.300	.000

- X1: The usability variable has a 0.001 significance level. It may be concluded that the significance value is 0.001 0.05, and based on the comparison, H0 is rejected and H1 is accepted, indicating that the usability variable has a significant impact on user satisfaction.
- X2: The variable information quality has a significant value of 0.459. It may be determined that the significance value is $0.459 > 0.05$, and that H0 is accepted and H2 is rejected based on the comparison, implying that information quality has no significant impact on user pleasure.
- X3: The significance value for the service interaction quality variable is 0.459. The significance value is 0.0000.05, and based on the comparison, H0 is rejected and H3 is approved, indicating that service interaction quality has a significant impact on user satisfaction.

F. F Test

TABEL VI. Result of F Test (Anova Table)

Moder	Sum of Squares	df	Mean Square	F	Sig.
Regression	354.106	3	118.035	111.493	.000
Residual	154.568	146	1.059		
Total	508.673	149			

The significance value in table VI is 0.000. The significance value is 0.0000.05, and the findings are H0 rejected and H4 approved based on this comparison. This means that usability, information quality, and service interaction quality all have an impact on total user satisfaction.

V. CONCLUTION

Based on the findings of the research analysis conducted on the HALODOC website (https://www.halodoc.com/), the following conclusions can be drawn:

1. The study, which included 150 loyal users of the website HALODOC, found that the three factors in the variable test, usability, information quality, and service interaction quality, all yielded positive results. This implies that assessing a website's quality based on the variable quality of usability, information quality, and service interaction quality works quite well on the HALODOC website.
2. The interaction of usability and service quality has an effect on user satisfaction, while the quality of information has no effect on user satisfaction. The interaction of quality usability, information quality, and service quality has an overall impact on user satisfaction.

VI. SUGGESTION

The authors propose the following based on the findings of their research into the quality of the HALODOC website:

1. In the future, HALODOC is projected to improve the website's quality in order to make users (users) feel more secure and comfortable when using the HALODOC website / website. Particularly, the growth in the distribution of health-related information. In addition to improving the security of user data on the HALODOC site/website, more advertisements are being distributed to increase awareness of the telemedicine site/website.
2. More study is needed to add criteria to the respondents' sample, making it more accurate and conical. It is envisaged that this research can be used to assess quality on the HALODOC website and other telemedicine websites in the future.

REFERENCES

[1] APJII. (2020). Asosiasi Penyelenggara Jasa Internet Indonesia [online]. Available at https://www.apjii.or.id [Accessed : 28 November 2020].
[2] Barnes, S. J., & Vidgen, R. T. (2002). An integrative approach to the assessment of e-commerce quality. J. Electron. Commerce Res., 3(3), 114-127.
[3] Candra, I. (2012). Evaluasi Kualitas Website Pemerintah Daerah Dengan Menggunakan WebQual (Studi Kasus Pada Kabupaten Ogan Ilir), Jurnal Sistem Informasi (JSI), Vol 4. No. 2.
[4] Coelho, K. R., (2011). Identifying Telemedicine Services To Improve Access To Specialty Care For The Underserved In The San Francisco Safety Net. International Journal of Telemedicine and Applications.

[5] Diana., Nuri., dan Maria. (2018). Analisis Kualitas Website Provinsi Bengkulu Menggunakan Metode Webqual 4.0. Pseudocode 5, no. 1 : 10-17.

[6] Halodoc. (2020). Website Telemedicine (online). Available at https://www.halodoc.com/ [Accessed: 16 November 2020].

[7] Himawat., Diah., dan Niken. (2017). Analisis Kualitas Layanan Website E-Commerce Terhadap Kepuasan Pengguna Menggunakan Metode Webqual 4.0. Studia Informatika: Jurnal Sistem Informasi 10, No. 1.

[8] Imam Ghozali. Applications of Multivariate Analysis with IBM SPSS Program 23. Edition 8. VIII Printing. Semarang: Diponegoro University Publishing Agency. 2016.

[9] Rizky Esa, dan Otong Saeful Bachri. (2019). Analisis Pengukuran Kualitas Website Terhadap Kepuasan Pengguna Berdasarkan Webqual 4.0. Jurnal Ilmiah INTECH: Information Technology Journal of UMUS 1, no. 01 : 89-97.

[10] Rayport, J., F, dan Jaworski, B., J. (2001). E-commerce: A Managerial Persective. Prentice Hall, Inc. New Jersey.