Analysis of Community Satisfaction Level Against the Ministry of Health’s Infection Emerging Websites Using Webqual 4.0

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Abstract. As one form of communication and information media, web sites have a very big role in representing a government institution to interact with the public. A website is designed in such a way as to meet certain service quality standards set by the developer. However, good service quality must also consider perceptions from the point of view of users in this case the wider community. The study purpose is to determine the level of community satisfaction with the quality of the website as an indicator of success by the government in conveying information to the public. The method used in this study is to distribute questionnaires with a Webqual approach which is of three categories, specifically Usability Dimension, Information Quality Dimension, and Service Interaction Dimension. The data were obtained then analyzed using the Structural Equation Model (SEM) Technique with the SmartPLS 3 software. Based on a survey of 104 respondents, it was found that in general users were satisfied with the services on the website.

1. Introduction
Information technology and communication technology (ITCT) has been widely used by many countries nowadays. In government organizations ITCT is utilized to build the straightforwardness of the administration framework. Along with the development of ITCT, the need for ITCT in all walks of life has also increased and public acceptance of the Internet has produced several implications for the public sector [1].

During the pandemic disease of Covid-19 the need for data on the amount of people affected by the viruses was even greater. Not only the government, the people also need information on the extent and impact of the distribution of Covid-19. The government has made a policy to utilize ITCTs in the field of integrated government, which is contained in Presidential Instruction (INPRESS) No. 3 of 2003 concerning National Policies and Strategies for the Development of E-Government [2]. As the government agencies dealing with health issues, the Ministry of Health applies the use of ITCTs to manage data and information related to Emerging Infection that is manifested in a website named Infection Emerging.

Infection Emerging is managed by the Ministry of Health to provide the best service in the field of information technology as an effort to provide satisfaction to users, namely the community. It’s provide the reliable information about global emerging disease, Southeast Asia regional emerging disease, numbers of infected country, numbers of country transmitted with local transmission, numbers of confirmed cases, numbers of death case, numbers of cure case,
numbers of case in treatment, numbers of regency or city affected, Indonesian region with local transmission, gender and age of patients who are positively infected. The Government hope that this website give the valuable information for decision maker, media or people who need.

In order to make the Infection Emerging website the best in accordance with what is desired by the visitors, it is necessary to know the extent to which the website of Infection Emerging can be accepted by the public by holding an assessment to measure from the available websites whether it can be accepted by society well. The measurement serves to enhance the standard of service to the community [3]. This mechanism permits voters to assume a lively role in discovering, distinguishing, and shaping public services that require to be provided [4].

From the explanation above, it is necessary to conduct a study to measure the service quality of Infection Emerging Website by referring to the Webqual indicator to analyze the relationship between aspects of Usability, Information Quality, and Service Interaction on community satisfaction level against the Infection Emerging Website with the help of SmartPLS 3 software.

2. Method
Quality of service contains a very important role in determinant success for a corporation. Consumer perception is that the comparison between expectations of the standard of a service with the standard of services received by consumers. Quality of service represents the relationship between the customer and the service provider and between the level of service perception and the service provided. Service quality is conceptualized as a multidimensional. The concept and measurement of service quality must be based on user perception, context specific, hierarchical, and multidimensional. Service quality includes two dimensions, namely technical and functional [5].

Webqual was first created in 2000 and over the years the scaled version was iteratively developed by Barnes and Vidgen until Webqual 4.0 in 2002 [6]. The scale used at Webqual is based on a scale developed by Parasitaman Zeithaml and Berry in 1988 called Servqual and has been widely accepted. There are three main dimensions on the Webqual scale, namely: the Usability scale, the Information Quality scale, and also the Service Interaction scale [7]. Webqual facilitates marketers in transforming a qualitative assessment into a quantitative measure. The only focus on Webqual’s scale is the Internet user experience [8].

Likert Scale was designed in 1932 to measurement ‘Attitudes’ scientifically and validated. An attitude can be defined as a way of behaving / reacting preferences in specific circumstances rooted in relatively long-standing organizational beliefs and ideas (around an object, subject or concept) obtained through social interaction. The collection of statements (items) that are asked for a real situation or a hypothetical being studied is the definition of a Likert Scale. The level of acceptance of a statement (item) is shown from fully disagree to fully agree using the metric scale. All statements are combined to reveal the specific dimensions of attitude towards the problem, hence, of course are interrelated to one another [9].

Structural Equation Modeling or abbreviated SEM which has a component or variant based equation model is the understanding of PLS. PLS was first introduced in general by Herman Wold in 1974. The PLS approach is a covariance-based SEM approach that is shifted into variants. SEM generally tests causality or theoretical models, while PLS is predictive model. PLS Analysis sub-model consists of structural models or often called inner models and measurement models or called outer models. Structural models or inner models show the strength of estimates between constructs, whereas measurement models or outer models show how indicators represent latent variables for being measured. The latent variables formed in the PLS indicator can be either reflexive or formative [10].

This study was conducted to live the standard of the Infection Emerging Website (infeksiemerging.kemkes.go.id) which belongs to Ministry of the Health of Republic of Indonesia
from the perception of website users using quantitative descriptive research. Using survey techniques to get primary data by distributing questionnaires. Determination of the sample or respondent using random sampling techniques.

The questionnaire-based survey was used as an instrument at the research stage, which was distributed to respondents in this case the community which became an example of distributing questionnaires as users of the Infection Emerging website. Using a WebQual 4.0-based questionnaire according to the established standards.

![WebQual 4.0 Conceptual Model](image)

**Figure 1.** Webqual 4.0 Conceptual Model

There are 3 hypotheses that being tested by this study. these hypotheses are:

H1: Usability variable contains a positive and important result on the amount of community satisfaction.

H2: information quality variable contains a positive and important result on the amount of community satisfaction.

H3: The quality of service interaction variable contains a positive and important result on the amount of community satisfaction.

The use of WebQual 4.0 as a theory to determine community satisfaction has often been done for example in educational sites [3], and also online banking [6]. However, the use of this theory for the assessment of community satisfaction on websites relating to the handling of Covid-19 has not been much. So that the contribution of this research is that it can provide recommendations on the satisfaction indicators of users of the Covid-19 website, specifically the Infection Emerging website of Ministry of Health’s.

| Quality       | Description                                                                 |
|---------------|-----------------------------------------------------------------------------|
| Usability     | 1. I find site easy to learn to operate                                      |
|               | 2. My interaction with the site is clear and understandable                  |
|               | 3. I find the site easy to navigate                                         |
|               | 4. I find the site to use                                                   |
|               | 5. The site has 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 user                          |
| Information Quality | Provides accurate information                        |
|               | Provides believable information                                              |
|               | Provides timely information                                                  |
|               | Provides relevant information                                                |
|               | Provides easy to understand information                                      |
|               | Provides information at the right level of detail                           |
|               | Present the information in an appropriate format                            |
The total used number of questions is 20 questions with a usability dimension of 8 questions, the dimension of information quality is 5 questions, the quality dimension of service interaction is 7 questions. Assessment for each question uses a Likert Scale consisting of 5 answer choices to assess perceptions of website quality, as shown on Table 2.

| Table 2. Likert Scale |
|-----------------------|
| No. | Description | Score |
| 1   | Dissatisfied | 1     |
| 2   | Less satisfied | 2     |
| 3   | Quite satisfied | 3     |
| 4   | Satisfied | 4     |
| 5   | Very satisfied | 5     |

3. Result & Discussion

3.1. Respondent Demographics

| Table 3. Respondent Demographics |
|----------------------------------|
| Characteristics | Total | Percentage (%) |
| Gender | Male | 46 | 44.3 |
|         | Female | 58 | 55.8 |
| Age | | | |
| < 20 | 0 | 0 |
| 20 - 29 | 33 | 31.7 |
| 30 - 39 | 54 | 51.9 |
| 40 - 49 | 11 | 10.6 |
| > 50 | 8 | 8.7 |
| Last Education | | |
| Elementary School | 0 | 0 |
| Middle School | 0 | 0 |
| High School | 3 | 2.9 |
| Diploma | 6 | 5.8 |
| Bachelor | 70 | 67.3 |
| Master Degree | 24 | 23 |
| Doctoral Degree | 1 | 1 |

The respondents of this research were Indonesian citizens who has used the Infection Emerging website at least once. The respondents who have never visited Infection Emerging website will be directed to visit the Infection Emerging website before filling out the questionnaire as shown on Figure 2.

Figure 2. Confirmation on the questionnaire that shows the respondent has visited the website.
Respondents were drawn from the population using random sampling. Only 104 responses were categorized as appropriate responses for the analysis step as shown in Table 3. Arguably, the respondents are people who concern about what’s going on, moreover, about the pandemic that has been infect millions and creating high rate of casualties. Therefore, the responds are valid and the data can be accounted for this study.

3.2. Measurement and Structural Model Testing
At this stage, there are three types of testing carried out namely Convergence Validity, Discriminant Validity and Reliability Testing. This test is to see the extent of the link between latent variables with each indicator. The Convergent Validity value is taken from the loading issue of every indicator of every latent variable. In order to be processed further, the expected loading factor value is 0.7. In Figure 3, the research model and output are shown after the questionnaire results are processed using PLS Algorithm in the SmartPLS application.

![Path Diagram](image)

Based on user perception of each indicator, it has an outer loading value of more than 0.7. This means having a positive impact on users of the Infection Emerging website (infeksiemerging.kemkes.go.id). A construct will be valid and reliable if it has a AVE value above 0.50, composite reliability above 0.70 and a Cronbach alpha value above 0.70 [12]. Table 4 shown that it meets the requirement, so it will be same that the research model conducted contains a positive and important result on society.

| Variable              | Cronbach Alpha | Composite Reliability | AVE  |
|-----------------------|----------------|-----------------------|------|
| Usability             | 0.952          | 0.960                 | 0.149|
| Information Quality   | 0.930          | 0.961                 | 0.833|
| Service Interaction   | 0.959          | 0.966                 | 0.801|
| User Satisfaction     | 0.977          | 0.979                 | 0.697|

Table 4. Value of Construction Validity and Reliability
Table 5. T-Statistic Value

| Variable          | T-Stat |
|-------------------|--------|
| Usability         | 32.057 |
| Information Quality | 28.312 |
| Service Interaction | 20.041 |

The hypothesis can be accepted if the T-Statistic value is greater than 1.64 and if the opposite occurs, the hypothesis is not accepted. Where the $\alpha$ value used is 5 percent. As shown on table 5 it is seen that the test conducted using SmartPLS T-Statistic values have values greater than 1.64 so Hypothesis 1 (H1), Hypothesis 2 (H2), and Hypothesis 3 (H3) are accepted. The 3 variables specifically Usability variable, Information Quality variable, and Service Interaction variable have positive and important result on user satisfaction variables.

4. Conclusion

Based on data analysis results of the study, it may be all over that the variable Usability, Information Quality, and Service Interaction have an effect on community satisfaction as users of the Infection Emerging website belongs to Ministry of Health’s. However, service suppliers should still improve the standard of each the knowledge, services and interactions to the broader community as its users.

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