Evaluating Website Repeat Usage Using Webqual 4.0: a Guide for E-Commerce Business

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Abstract. The research aims to examine the repeated use of e-commerce websites by analyzing the quality of the website using webqual 4.0, which consists of quality of use, information, and service interactions. The research method used is a quantitative method using a questionnaire of 200 respondents in Bandung and asked to fill out an online questionnaire. The data obtained were analyzed using regression analysis. Results The findings from the study are that this implies the effect of high quality web sites on potential repeat usage. Therefore, this research urges business owners to interact with visitors using website tools, in addition to improving the usability and quality of website information. Increasing the interaction of website visitors will make the shopping experience more interesting. Engagement means that visitors’ interests are supported by relevant and useful content or interactions. The more engaged your visitors are, the better the potential for conversions from website visitors to customers.

1. Introduction

To maintain a competitive e-commerce market in Indonesia as a profitable business, entrepreneurs need significant marketing experience and information system knowledge. In this decade, internet penetration has caused changes to many aspects of society’s daily life. According to Asosiasi Penyedia Jasa Internet (Indonesia Internet Service Provider Association), internet user in Indonesia reach to 132.7 million people in 2016, which increased significantly from approximately 51.8% in the data released in 2014 [1]. Within these result, there are 53.6% active users aged 25-40 years old, 28% above 45 years old, and 18.4% aged 10-24 years old. The majority of these internet users consists of the active working generation who usually has very limited time to go shopping. In that case, the process of the transaction which previously must be face-to-face now can be shifted through the use of a smartphone with an internet connection. Rather than going to a physical store, as usual, online shopping is now a common practice.

The growth of internet technology in the retail industry leads to the development of new business models, platforms, and complimentary services offered, like electronic commerce (e-commerce). Turban [2] define e-commerce as a process from buying, selling or trading products, services, and information through a computer network, with the internet. Simply, e-commerce makes the transaction easier by being digital between the organization and the individual. Laudon [3], divide e-commerce into five types, specifically: business-to-consumer (B2C), business-to-business (B2B), costumer-to-customer (C2C), peer-to-peer (P2P), mobile commerce (m-commerce). One of the well-known types in Indonesia is C2C or better known as ‘Situs Jual Beli’ in Indonesian. The main characteristic of C2C is that fellow users carry out all transactions, while the e-commerce provider just act as an intermediary and service provider [3].

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The advantage of the internet, however, does not only enable users to get easier access to e-commerce but also enable the users to actively compare service offered by different e-commerce providers. The most prominent service in e-commerce that determining customer loyalty is Webqual™. Webqual is the result of the development of e-servqual, a measurement of service quality given by a service provider to its customers. Webqual is a measurement of web quality was introduced to assess website quality based on broad literature study and interview with website designer and visitor. A website, in general, is evaluated by the user point of view. Therefore, webqual is developed to measure a website’s quality based on the perception of end-user of the said website [4]. A past study proposed that dimensions to test the website quality are informational fit-to-task, tailored information, trust, response time, ease of understanding, intuitive operations, visual appeal, innovativeness, emotional appeal, consistent image, online completeness, and relative advantage [5]. However, the most prominent test instrument is webqual index [4]. This index has been reviewed and has been adjusted in the last decade to be webqual 4.0, which is developed by three main dimensions i.e. usability quality, information quality, and service interaction quality [6].

Repeat usage defined as a decision made by a customer to voluntarily subscribing certain service in a long-term, by using and rebuying [7]. This action represents the satisfaction to the service offered, which is the main factor for the success of a business. Repeat usage could also be a form of customers loyalty. Customer loyalty is a decision making behavior to make a regular purchase of products or services in a long-term [8]. A loyal customer is a closely related to pledge response in holding on commitment which underlie relation continuity, and often reflected in the continuing purchase from the same service provider (see Table 1-3).

### Table 1. Brand Popularity Index of E-commerce Sites Based on Electronic Product in 2016

| Rank | E-commerce   | PBI  |
|------|--------------|------|
| 1    | Lazada       | 29.3%|
| 2    | OLX          | 27.7%|
| 3    | Tokopedia    | 11.4%|
| 4    | Bukalapak    | 6.8% |
| 5    | Bhineka      | 4.1% |
| 6    | Blibli       | 4.0% |
| 7    | Elevania     | 3.7% |
| 8    | Electronic-city.com | 2.6% |
|      | Source: Top Brand Award (2016) |

### Table 2. Brand Popularity Index of E-commerce Sites Based on Fashion Product in 2016

| Rank | E-commerce   | PBI  |
|------|--------------|------|
| 1    | Zalora       | 40.5%|
| 2    | Lazada       | 24.1%|
| 3    | OLX          | 8.7% |
| 4    | Tokopedia    | 4.4% |
| 5    | Blibli       | 3.3% |
|      | Source: Top Brand Award (2016) |

### Table 3. Brand Popularity Index of E-commerce Sites Based on Transaction in 2016

| Rank | E-commerce   | PBI  |
|------|--------------|------|
| 1    | OLX          | 44.5%|
| 2    | Lazada       | 19.9%|
| 3    | Tokopedia    | 12.1%|
| 4    | Bukalapak    | 11.8%|
| 5    | Elevania     | 1.6% |
| 6    | Kaskus       | 0.8% |
|      | Source: Top Brand Award (2016) |
A loyal customer has a characteristic as follows: making a purchase regularly (repeat purchase), purchase across product and service lines, recommends other products (referrals) and shows immunity from attraction to other product by a competitor (retention) [8]. Several behaviors defined to indicate website loyalties, such as visiting the website more than other websites within the same categories, acknowledge the website as the favorite webpage for online shopping of products and services, and low frequency of visiting other websites which provides the same product [9].

In 2016, Top Brand Award (TBA) released a report of brand popularity index based on surveys regarding e-commerce service provider as shown in table 1. The TBA survey implies that there is fierce competition to be the most well-known e-commerce brand in Indonesia. Different provider ranked top in the different product category, showing that these e-commerce provider does not have loyal customers. Giving the difficulties in obtaining e-commerce loyal customers, this study aims to assess e-commerce websites’ quality level, as well as the repeat usage of those websites. Then the role of website quality on repeat usage is also investigated. This study is highly important for e-commerce business to increase visitors’ satisfaction and convert them to be loyal customers.

The research aims to examine the use of e-commerce websites by analyzing the quality of websites using webqual 4.0. The research method used is a quantitative method using a questionnaire of 200 respondents in Bandung and asked to fill out an online questionnaire. The data obtained were analyzed using regression analysis. Results The findings from the study are that this implies the effect of high quality web sites on potential repeat usage.

2. Method
This study uses a descriptive quantitative research approach that is research that is intended to investigate a situation, condition or other things mentioned earlier, to be presented in the form of a research report [10]. The purpose of this study is to assess the quality of e-commerce websites, repeat usage of those websites, and the relationship between the quality and the repeat usage using webqual 4.0. According to the study of backgrounds and theoretical basis, a hypothesis is formulated as follows:

Ho : Website quality does not positively and significantly affect the repeat usage of e-commerce website
Ha : Website quality positively and significantly affect the repeat usage of e-commerce website

Sampling technique employed is a non-probability sampling, by taking the sample using purposive sampling. E-commerce website users with a size of 200 were asked to be the respondents. With the minimum sample needed of 200 for problem-solving type research [10], the sample amount of this study was accepted. The characteristic of respondents is displayed in the table 4. The data collected from respondents was then analyzed using regression analysis. While the hypothesis was tested using the F test and t-test shown in Figure 1.

![Figure 1. Model Framework](image)

3. Results and Discussion
3.1 Descriptive Analysis
From the result of descriptive analysis of table 5, it can be seen that the average website quality given by e-commerce users is 3,72. The number mentioned can be categorized in the fair level [11]. In a detail, the average number for usability dimension is 3.80, the highest number among other
dimensions. Followed by information quality, this dimension shows that the average number on 3.67. While the interaction service quality dimension has the lowest result of 3.58. The standard deviation in the website quality variable of 0.605 means that there is 16.2% of the low variance in the respondent’s answer to the question [10]. This implies that the respondents, in general, answer the question in some sort of agreement.

On another hand, the average value of repeat usage given by the users is 3.14, which can be categorized as fair [11]. However, the standard deviation in the repeat usage numbered in 0.761, which means the variance of answers is 24.2%. This number shows that the variance of the respondents’ answer is high (see Tables 4 and 5).

Table 4. Respondents Characteristic

| Gender          | Percentages |
|-----------------|-------------|
| Male            | 25%         |
| Female          | 75%         |

| Age             | Percentages |
|-----------------|-------------|
| 18-21 years old | 59%         |
| 22-25 years old | 34%         |
| 26-30 years old | 4%          |
| >30 years old   | 3%          |

| Occupation      | Percentages |
|-----------------|-------------|
| Student/College Student | 59%       |
| Private Employee | 34%         |
| Entrepreneur     | 4%          |
| Civil Servant    | 3%          |
| Others           | 7%          |

| Income (Rupiah) | Percentages |
|-----------------|-------------|
| < 1 Million     | 45%         |
| 1 – 2 Millions  | 34%         |
| 2 – 3 Millions  | 8%          |
| 3 – 4 Millions  | 4%          |
| > 4 Millions    | 9%          |

| Last Access     | Percentages |
|-----------------|-------------|
| < 1 Week        | 27%         |
| 1 Week – 1 Month| 20%         |
| 1 Month – 3 Months | 18%      |
| > 3 Months      | 35%         |

Table 5. Descriptive Analysis

| Dimension/Variable       | N  | Mean | Std. Deviation |
|--------------------------|----|------|----------------|
| Website Quality          | 200| 3.72 | 0.605          |
| Usability                | 200| 3.80 | 0.636          |
| Information Quality      | 200| 3.67 | 0.626          |
| Service Information Quality | 200 | 3.58 | 0.668          |
| Repeat Usage             | 200| 3.14 | 0.761          |

3.2 Correlation Analysis
The correlation result between website quality and repeat usage is 0.637 as shown in Table 6. This result indicated a strong and positive correlation between the two variable [11]. As stated in the unstandardized coefficient column, the constant value (a) is 0.045 with the regression coefficient (b) is 0.381. Therefore, the regression equation figured as follows:

\[ Y = a + bX \]

\[ Y = 0.045 + 0.381X \]
The equation above explained that if there is no change to the website quality (X=0) then the decision making achieved in the repeat usage is 0.045. Then, every increase in a unit of website quality will increase repeat usage decision making to 0.381. The standardized coefficient value of the regression is 0.637, equated for Y = 0.637X. The equation means if there is no independent value or website quality (X=0) then repeat usage have a value of zero. Meanwhile, the regression coefficient (b) valued at positive means if there is an addition of one unit to the website quality (X=1) then Y is increased by 0.637(b). In other words, if website quality is increased, then the value of repeat usage will also increase and vice versa.

To test the hypothesis, the F test and t-test are employed. F count and t count of website quality are 135.154 and 11.626. Following the value of significance of 0.000 and df of 200-2 = 198, F table and t table acquired is 3.89 and 1.97202 ≈ 1.972. The significance level that is lower than the probability value (0.050) can be concluded that Ha is received, meaning that there is a positive and significant influence simultaneously of the website quality to the repeat usage of the e-commerce website. The probability value of 0.000 is far lower than 0.050, then the regression model can be used in decision prediction or it can be said that website quality has the influence to repeat usage.

| Table 6. Correlation and Regression |
|------------------------------------|
| Model                         | Pearson Correlation | Sig. |
| Website Quality -> Repeat Usage  | 0.637               | 0.000|

|                      | Unstandardized | Standardized | Sig. |
|----------------------|----------------|--------------|------|
| Simple Regression Constant | 0.45           | 0.987        |      |
| Website Quality      | 0.381          | 0.637        | 0.000|

3.3 Correlation Analysis
Positive and significant relation of website quality and repeat usage give support to past studies [12-14] stated that the result shows that users that interact with the website provider will result in user satisfaction. Technical interaction tools on the website will help users to feel interaction with the organization, therefore in the evaluation process, the user is not only influenced by organization’s website performance but also influenced by satisfaction and loyalty. The higher the quality of the website then the higher the quality of electronic satisfactory gained, lead to the increase of users’ loyalty to the website [15]. This means if a company want to increase transaction done by users on the website, the quality of the website need to be watched [16]. The website’s ease of use is likely to be the prominent factor for the user to make a continuing purchase. Information and system quality also influence the loyalty of website visitor. A website that has good information and system quality, as well as service quality create loyal users [17].

The value of coefficient determination (R²/R square) of the website quality variable and the repeat usage is in the value of 0.406. This result shows that the website quality gave an influence contribution for 40.6% of the repeat usage. While the rest influence of 59.4% is the contribution of other variables that does not included in this research.
The finding from this study suggests the business owner pay attention to their website’s usability, information quality, and service information quality. First, making a customer buy your product will not work if the website does not work well and easy to use. It is imperative to design and develop websites that are easy to use, optimized, and responsive. Website navigation that clearly shows parent category and subcategory of all products offered help consumers to find similar and supplementary products. More importantly, if a consumer cannot find a product, the simply will not buy it. Thus, website aids like navigation button, search button, and keywords need to be fully utilized.

Then it is also important to aware that buying products and services online is quite different than in a physical store [18]. The consumer does not have the option to touch or interact with the product before deciding to buy it. Information on the website should make consumers feel as if there is no need to examine the merchandise in a brick and mortar store. Therefore, giving consumers multiple views of the products in high quality and an option to zoom help the consumer know what they are getting. Testimonials and consumer reviews (both positive and negative) can also increase the trust of potential consumers to the product [19].

In the last, although the online consumers and sales staff does not meet face by face in the e-commerce website, all information needed by consumers need to be provided clearly. Information like additional charges, payment procedure, delivery options, and return policies are very important for online consumers. These kinds of information give an assurance for potential consumers that it will not be a hassle to buy the product from the e-commerce website.

4. Conclusions
E-commerce websites quality in Indonesia is on a good level in the view of their users. This result is reviewed from the good or high value of variables i.e. usability dimension, information dimension, and service dimension. Repeat usage of e-commerce websites is considered in the fair level, with every result from the indicators is in the average value of fair or pretty good. While there is positive and significant influence between website quality and repeat usage partially and simultaneously. In other words, if e-commerce websites’ quality increases, then the repeat usage will also increase.

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