Analysis of An Indonesian E-Commerce Website: Gap Between Actual Performance and Users' Expectation

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Abstract

For an e-commerce company, a reliable website is a basic requirement in the expansion of its business. This study aimed to describe the level of quality that is perceived by customers of an e-commerce website in Indonesia, based on the judgment of the actual quality and perceived quality developed from Website Quality (WebQual) theory. This research employs WebQual dimensions namely usability, information quality, and service interaction to be further analyzed by using Gap Analysis method. The research was done by spreading questionnaires to 100 respondents in Bandung, Indonesia, to determine what are the factors determining website quality of Shopee Indonesia. The result shows that overall there are value gaps between the actual quality (performance) and ideal quality (importance) of the website.

Keywords: E-Commerce; Website Quality; Information Technology; Online business

Introduction

In this digital era, an online platform such as website is very useful for both company business and home-based businesses in marketing their products (Wardhana & Pradana, 2016). In Indonesia, the behavior of the Indonesian people in online shopping is quite significant in the growth of e-business in South East Asia. People want to shop effectively and efficiently in aspect of time which boosts the proliferation of e-commerce in Indonesia (Chen, 2010). Hence, the proliferation of e-commerce website in Indonesia has been running in such a high speed.

A multinational company that begins to follow the growing trend is Shopee. By creating an online application which is Shopee.co.id, the Singapore-based company under the umbrella of Garena multinational corporate. It has been a major player in the digital business market since its inception. Shopee has also launched an online store-based application.

The percentage of online buying and selling activities is not too high but this is the opportunity for business people to market their business to improve their business. As analyzed by Wardhana & Pradana (2016), Indonesia is one of the largest e-commerce market growth in Asia-Pacific. Below is the estimated amount of e-commerce sales for the Asia-Pacific region. The figures below show estimates on B2C e-commerce sales in some Asian countries. Although the number of sales in Indonesia is still relatively low compared to other countries, it does not rule out the development of e-commerce sales over Indonesia.
Figure 1. Indonesian e-commerce growth

The figure above shows that the growth of e-commerce in recent years has always been increasing and improving. This can enable the advancement in the field of online trading and make Indonesia as one of the best places for business actors, so e-commerce market is seen as a gold mine and very tempting for certain people who can see the potential for the future (Fadillah et al., 2015).

Previously, there were no research results that measured the quality of Shopee.co.id website. Research on the level of quality can be used as a reference to improve website management for the better (Chen, 2010). With these indications the authors are interested to examine the quality of Shopee.com website by using Webqual method.

According Pradana & Danisa (2016), the quality of a website in an online shop site is a factor that can influence customer decisions. This classification can help marketers to recognize and better understand the potential of online shopping tools used. Website quality is not only important for marketing a product and service only but also to provide other information that appeals to the customer. The quality measurement of this research website uses Webqual method which evaluate on e-commerce website. For the reason explored above, we would like to analyze whether the online platform has met the expectation of the users.

**Literature Review**

Information Technology (IT) is a general term that describes any technology that helps human beings to create, modify, store, communicate and or disseminate information. IT brings together high-speed connectivity and communication for data, voice and video (Kisaleva et al., 2016). Simply put, a system can be defined as a collection or set of elements, components, or variables that are organized, interacted, interdependent, and integrated. The general system theory that was first described by Wardhana & Pradana (2016), especially suppresses the importance of attention to every part that makes up a system.

The human tendency that gets the job of leading an organization is to focus too much on just one component of the organizational system (Fakhri et al., 2014). According to O'Brien and Marakas (2010), website is a facility that offers chat rooms, e-mail, and
instant messaging where internet surfers can explore the World Wide Web using browser software to get various information, entertainment and business interests.

While Gregg & Walczak (2010) explained that website quality can be seen as an attribute of a website whose purpose is to help consumers. Quality website research has previously identified several dimensions of the website quality, dimensions of information quality, ease-of-use, usability, aesthetics, trust building technologies and emotional appeal. This was then supported by Barnes and Vidgens (2014) with WebQual concept, which is one of the methods or techniques that measure website quality based on end user perceptions developed by Barnes and Vidgens (2014).

According to Barnes and Vidgens (2014), quality measurement website with method WebQual 4.0 is the right instrument to assess website website based on consumer perspective consisting of three sub variables such as usability, information quality and quality of interaction services. In this method, which is WebQual 4.0, usability relates to website design such as appearance, ease of use, navigation and also the appearance presented on the website. Usability focuses on how things look users see and interact with the website (Sowter et al., 2016). It also talks about whether the design matches the type of website (Arsyawati, 2017).

Finally, the quality of information is the quality of the contents of the website, namely the suitability of information for users such as format, level of accuracy and relevance (Wardhana & Pradana, 2016). There are also quality of service interactions that are things experienced by website users, manifested in the form of trust and empathy, for example regarding transaction and information security, product delivery, personalization and communication with website owners or managers (Barnes & Vidgen, 2014).

In this study, we used methods WebQual 4.0 because this research focuses on User Satisfaction. For quite a while, the concept of satisfaction is known as the customer's perception that his expectations have been fulfilled or exceeded (Madiawati, 2016). According to Kotler and Keller (2014), customer satisfaction is a feeling of being happy or disappointed someone who appears after comparing the performance (results) of a product that is thought of the expected performance (results). Whereas according to Hafid et al. (2018), user satisfaction is user information about the extent to which users believe that available information systems are able to meet their information needs.

Natyari (2017) also revealed that user satisfaction is very important for the company, because user satisfaction is the key to success in measuring the implementation of an information system.

**Research Methodology**

This type of research is categorized into quantitative descriptive research. Barnes & Vidgens (2014) set the variables which will be used in this study, which is WebQual 4.0. This approach comprises usability, information and service interaction seen from two perspectives that are actual perceived quality (performance) and ideal quality desired (importance). Population in this research is Shopee web user in Indonesia. The samples used are 100 respondents with sampling technique done by incidental sampling.
Incidental sample is a sample determination technique by chance, in this term anyone who accidentally / incidentally meets with the researcher can be used as a sample, when viewed by chance (Madiawati & Pradana, 2016). Data collection was done with an online questionnaire on a scale of 1-5 (1 = strongly disagree, 5 = strongly agree).

In this study, the population is the number of people who have downloaded Shopee official applications. Shopee apps in the playstore have been downloaded by 230,670 users in 2017. Sample size or number of respondents for this research will then be calculated using Slovin Formula. The calculation is seen with the following formula:

\[ n = \frac{N}{1 + Ne^2} \]

Information:
- \( n \): Number of elements / sample members
- \( N \): Number of elements / members of the population
- \( e \): Error level (error rate)

In this study researchers used error level (error rate) of 10%. When calculated using the formula, then the number of samples obtained are:

\[ n = \frac{230,670}{1 + 230,670 (0.1)^2} \]

\[ n = 99.95 \approx 100 \text{ respondents} \]

So, based on the Slovin formula, the number of samples obtained is as many as 100 respondents. How do we define the questions? The questions that form the questionnaire are taken from WebQual Instruments by Barnes & Vidgen (2014):

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I find the site easy to learn to operate</td>
<td>USA1</td>
</tr>
<tr>
<td>2</td>
<td>My interaction with the site is clear and understandable</td>
<td>USA2</td>
</tr>
<tr>
<td>3</td>
<td>I find the site easy to navigate</td>
<td>USA3</td>
</tr>
<tr>
<td>4</td>
<td>I find the site easy to use</td>
<td>USA4</td>
</tr>
<tr>
<td>5</td>
<td>The site has an attractive appearance</td>
<td>USA5</td>
</tr>
<tr>
<td>6</td>
<td>The design is appropriate to the type of site</td>
<td>USA6</td>
</tr>
<tr>
<td>7</td>
<td>The site conveys a sense of competency</td>
<td>USA7</td>
</tr>
<tr>
<td>8</td>
<td>The site creates a positive experience for me</td>
<td>USA8</td>
</tr>
<tr>
<td>9</td>
<td>Provides accurate information</td>
<td>INF1</td>
</tr>
<tr>
<td>10</td>
<td>Provides believable information</td>
<td>INF2</td>
</tr>
<tr>
<td>11</td>
<td>Provides timely information</td>
<td>INF3</td>
</tr>
<tr>
<td>12</td>
<td>Provides relevant information</td>
<td>INF4</td>
</tr>
</tbody>
</table>
Moreover, the data will be analyzed by Importance performance analysis (IPA) method. It is an analytical technique used to identify performance factors important what should be shown by an organisation to meet the satisfaction of the users of their services. IPA is used to understand more about the service user’s perception of the quality of the service. Dimensions of importance show how important quality attributes according to the users, while the dimensions of the performance show how good of user perceived quality attribute that significantly (Azzopardi and Nash, 2013).

Previous researches conducted by Pradana & Novitasari (2016) and Wong et al., (2011) states that IPA is a very useful tool in describing the position of quality attributes so it looks which priority attribute to be considered and become a reference in strategic development.

To answer the problem formulation "how is the quality of Shopee website seen from the gap between the desired quality (ideal) and quality perceived (actual)?" A gap analysis was conducted. Gap analysis will see the description of each indicator whether the actual quality perceived at this time from the website is in accordance with the ideal quality that the user wants. To determine the value of the gap, can be seen from the formula below between the actual quality (performance) and the quality of the ideal (importance).

$$Q_i = P_i - I_i$$

Information:

$Qi$ = quality
$Pi$ = actual quality value (performance)
$Ii$ = ideal quality value (importance)

A good quality level is indicated by a positive result or $Qi > 0$, this means that the actual quality score meets the ideal quality that the user expects. Conversely, if the result of $Qi$
0 or negative value, then the quality level is declared poor and can not meet the user's ideal activities.

To answer the problem formulation "any website quality indicators that have been in accordance with the wishes of users and whichever needs improvement" is done analysis of Importance-Performance. The Importance-Performance Analysis aims to depict visually the position of each indicator in the four IPA quadrant matrix in which each quadrant has a specific interpretation. The IPA analysis is based on the user's assessment of the performance and the importance of the indicators in this study.

From the indicator position in the IPA quadrant, it can be seen which indicators have been in accordance with user expectations and which are not yet appropriate. Indicators that have not been appropriate is an indicator of priority improvement. To illustrate the four IPA quadrant matrix used Cartesian diagram. The horizontal axis (X) in the Cartesian diagram is filled by the average score of the actual quality rating (performance), while the upright axis (Y) is filled by the average score of the ideal quality rating.

\[
\bar{X} = \frac{\sum X_i}{n}
\]

\[
\bar{Y} = \frac{\sum Y_i}{n}
\]

\[X_i = \text{average score of actual quality (performance)}\]

\[Y_i = \text{average score of ideal quality (importance)}\]

\[n = \text{respondents}\]

To determine the matrix of four IPA quadrants in Cartesian diagram, done by drawing a line from \(\bar{X}\) and \(Y\), so the result of the intersection of these two lines will divide the Cartesian diagram into 4 quadrants.

\[
\bar{\bar{X}} = \frac{\sum_{i=1}^{N} \bar{X}_i}{N}
\]

\[
\bar{\bar{Y}} = \frac{\sum_{i=1}^{N} \bar{Y}_i}{N}
\]
The explanation of each quadrants can be seen below:

\[ \begin{array}{c|c}
\bar{Y} & \bar{X} \\
\hline
\text{Quadrant I} & \text{Quadrant II} \\
Concentrate Here & Keep Up the Good Work \\
\text{Quadrant III} & \text{Quadrant IV} \\
Low Priority & Possible Overkill \\
\end{array} \]

Figure 2
IPA Matrix in Kartesius Diagram

**Result and Discussion**

Based on the results of research, the characteristics of the respondents showed the number of women more than the number of men, with the percentage of women by 68% and 32% men. Based on age dominated by age range 20-30 years as much as 40% while the age range <20 years as much as 36%, age range 30-40 years as much as 20%, and age range 40> 50 years as much as 4%. Based on work dominated by Other work as much as 44% whereas in this research is dominated by Other work as much as 45% while work as Teacher / Lecturer as much as 3%, employed as civil servants of 4% and as a private employee of 12%, and 36% as self-employed employment.

The results of Usability recapitulation show that the total score of the Performance of 82.68%, while the total score of Hope is 81.95% thus both attributes are entered into ‘good’ category. The weighting of the questionnaire data using the liker scale (1-5) is done by frequency tabulation of all indicators of each WEBQUAL dimension i.e. usability, information quality, and service interaction.

\[ Q_i = P_i - I_i \]

In this case:
- \(Q_i\) = quality level
- \(P_i\) = actual quality score (performance)
- \(I_i\) = value of ideal quality (importance)

Importance Performance Analysis (IPA) is used to see the quality indicators of any website which has been in accordance with the wishes of users and anywhere in need of repair. Results from the analysis of IPA shows the location of each indicator in the IPA matrix consisting of 4 (four) quadrants.
Figure 3. The IPA Diagram Result.

Based on the graphic image above can be seen position of each existing indicator in the IPA matrix. Each quadrant has its own specific interpretation that explains the strategic action what should be done for each indicator (Pangarso et al., 2017). The discussion which is the interpretation of the four quadrants will be in the discussion part after this. Based on the graph above can be seen position of each indicator in IPA matrix. Each quadrant has a specific interpretation that explains what strategic action should be performed for each indicator.

IPA graphs visually depicting residents’ importance and performance ratings and provide those within specific recommendations on where to allocate resources toward good website performance. In Quadrant I (Concentrate here), this quadrant contains attributes / statements that are considered important by visitors but in fact that attribute / statement is not in accordance with the importance of customers. The performance level of the attribute / statement is lower than the importance of the visitor towards the attribute / statement. The attributes / statements that are in this quadrant should be further enhanced in order to satisfy the performance of the visitors.

The attributes / statements that are in Quadrant I are as follows:

- Question no.6: Design accordingly
- Question no. 12: Relevant information
- Question no.14: Information with the right level of detail
- Question no. 18: Security of personal information

In Quadrant II (Keep up the good work), this quadrant contains attributes / statements that are considered to have a high level of importance and performance. This shows that the attributes / statements are important and have a high performance, so it must be maintained for the next time because it is considered very important / expected and the results are very satisfactory.
The attributes / statements that are in Quadrant II are as follows:

- Question no. 1: Easy to learn and operate
- Question no. 4: Easy to use
- Question no. 9: Information is accurate
- Question no. 10: Information can be trusted
- Question no. 11: Actual information
- Question no. 16: Good reputation
- Question no. 17: Security in transactions
- Question no. 22: Implement service according to appointment

Furthermore, in Quadrant III (Low priority), attributes / statements contained in this quadrant are considered less important by visitors and in reality, its performance is not very special. That is the attributes / statements contained in this quadrant have a low importance / importance and its performance is also considered not good by visitors. Improvements to the attributes / statements included in this quadrant need to be reconsidered by looking at attributes / statements that have an effect on the perceived benefit of the visitor either large or small and also to prevent attributes / statements from shifting to Quadrant I.

The attributes / statements that are in Quadrant III are as follows:

- Question no. 7: Competitiveness
- Question no. 8: Positive experience
- Question no. 15: Information in the appropriate format
- Question no. 19: Personal space
- Question no. 20: A sense of community
- Question no. 21: Ease of communicating with the company

Last but not least, Quadrant IV (Possible overkill), the attributes / statements contained in this quadrant have a low level of importance according to the visitor but have a good performance, so it is considered excessive by visitors. This indicates that the attribute / statement that influences the visitor's satisfaction is considered excessive in the implementation, this is because the visitor thinks not too important / less expected to the attribute / statement, but the implementation is done very well.

The attributes / statements that are in Quadrant IV are as follows:

- Question no. 2: The interactions are clear and understandable
- Question no. 3: Easy to navigate
- Question no. 5: Interesting view
- Question no. 13: Information is easy to understand

Conclusions

From the results of the study could indicate that the level of quality Shopee website is in accordance with the expectations of the desired by the user. There is a difference that indicates a gap between the two assessment perspectives between performance levels and
levels of interests (importance) or ideal quality expected. Overall, in the can from the research, an indicator of Usability, Information Quality, and Service Interaction has a difference in the average value of (0), the meal was stated as a positive result that proves that Shopee website is in accordance with the wishes of the user but there are still some must be increased to achieve excellent customer satisfaction. both on the Information Quality indicator that has a bad gap value.

Based on the analysis of the IPA quadrant consisting of 4 (four) quadrants, the quality attribute that is the top priority in the improvement to get the web in accordance with the wishes of the user is the attribute that goes into the quadrant to the first. Furthermore, what should be maintained is the attribute that goes in the second quadrant. And there are according to the user is not necessary but must remain in the attention to the attributes that go in the quadrant to three. The last attribute which, according to normal users but is packed very well on the Shopee website, is the attribute that goes in the fourth quadrant.

As with all research this study has limitations. The use of four quadrants in most cases are not considerably accurate. However, for answering our research questions, the method is sufficient. While the results of this study demonstrate that the e-commerce with the most emphasis on Service Interaction perceived by its users as the most sustainable in practice, some questions remain unanswered. IPA also carries the limitation of researchers having to subjectively decide where to place the limit within the analysis. Perhaps the level of importance can be deeper in other similar researches.

References

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