



The Use of Webqual 4.0 and Importance Performance Analysis (IPA) Method for Sriwijaya State Polytechnic International Office Website Quality

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Abstract. Digital flows allow the dissemination of information to be carried out borderless. The world of education also takes advantage of this. Nowadays, a website has become the face of the institution and the mean of promotion for international students. Therefore, doing evaluations from various aspects is very important to maintain satisfaction and attract user interest. It is utmost importance to analyze the performance of the Sriwijaya State Polytechnic International website to find out whether it has met the expectations of society towards the campus. There are two methods used in analyzing the website quality in this study. The first method is the Webqual 4.0 method using 23 questions from three dimensions (information, usability, and interaction). The second method is Importance-Performance Analysis (IPA) to identify the three dimensions that require improvement. This research was conducted on 177 domestic and international respondents using a questionnaire. The analyses revealed that the website quality had an average gap (GAP) of -0.01 indicated the low performance level. Then, the results of the quadrant analysis in IPA required an increase in the priority quadrant: indicator number 5 about an attractive appearance, indicator number 6 about design according to the type of web information system, indicator number 15 about information presented in accordance with the format (shape, font, color, etc.), multimedia features, and indicator number 23 about the overall website.

Keywords: webqual · IPA · website · international office

1 Introduction

Information and communication technology continues to develop rapidly in the present. The era of computerization development continued and developed until the 1990s, giving birth to internet technology which is utilized in various forms. One of which is web technology. With the rapid development of it, Sriwijaya State Polytechnic also uses web

technology in promoting the campus. The website for a university is the face of the university in the virtual world. Sriwijaya State Polytechnic also has its own national and international official website as a promotional medium. The existence of these two websites is a forum for information about profiles, study programs, facilities, and so on to internet users both from within and outside the country so that it is easier to introduce and promote the campus without having to come directly to the campus. In this study, researchers prefer to analyze the website quality for international internet users.

One of the countries that have several foreign students far above Indonesia is Malaysia. According to the report [9], “the number of foreign students in Malaysia in 2014 has exceeded 108,000 with a target of 250,000 by 2025”. Based on this statement, international students can improve and revive the economy of a country, and not only that, the presence of foreign students is expected to improve quality and bring benefits to universities. Based on this information, the international website should provide clear, concise, interesting, and not excessive information to attract foreign students to continue their education in Indonesia, especially at the Sriwijaya State Polytechnic. Hence, it is in the best interest to analyze the performance of the Sriwijaya State Polytechnic International website to find out whether it has met the expectations of society towards the campus as a promotion medium by using two methods; Webqual 4.0 and Importance-Performance Analysis.

2 Literature Review

2.1 Website Quality

A website serves to provide information to internet users. As claimed by [17], a website can be interpreted as a collection of pages used to display textual information, moving images, animations, sounds, and/or combinations of all, both dynamic in nature, forming a series of interconnected buildings, each is linked by the web of pages. As stated by [15], a website is a collection of pages of information available on the Internet for worldwide access, as long as connected to the Internet network. The quality of a website must be considered to support the image of an institution. [8] states that An institution’s web site is the image of the institution in cyber space, so web site quality is an important factor for the institution to consider. [4] mentions that a good website is a website whose main focus is the content of the website, which is the main factor that causes users to return to visit a website. The quality of the website greatly affects how user perceptions and user satisfaction are supported by several features of a website. As reported by [10], a user’s perception of the quality of a website is based on the features available on the website, which can meet the user’s needs and highlight the advantages of the website itself. This is also supported by [1] who state that websites can affect user satisfaction and influence users to use the website.

2.2 Websites for Higher Education

Education websites can be used as a parameter for campus responsiveness in dealing with the development of the era of technology and information. Following an attractive

website design style or trend, with easy-to-use navigation can increase the interest of many visitors and students to access the website [19]. This opinion is supported by [8] who states that the university website is a reflection of the campus image so its appearance needs to be considered. Students often pay attention to the physical appearance of a website.

2.3 Webqual 4.0 and Importance-Performance Analysis

Webqual (website quality) is a method of how to measure a website according to the user perceptions [12]. According to [14], webqual 4.0 consists of three dimensions as follow:

- a) Usability quality: a quality related to website design, such as Website appearance, usability, navigation, images displayed to users, etc.
- b) Information quality: the content quality on the website, whether or not it is appropriate for information to be conveyed such as accurate information, format, and relevance.
- c) Service interaction quality: the quality of service interaction that a user experiences while browsing a website to see the reputation and easy communication with the campus.

[16] Argues that IPA is a simple and convenient technique for identifying service-provider attributes that need improvement or deprioritization. As stated by [6], IPA can be used to set attributes based on the level of implementation, which will later be useful in developing a website by measuring the gap.

2.4 Previous Related Studies

In the past two years, there have been several studies discussing website evaluation for various user needs, ranging from educational institutions to E-commerce companies, one of which was focused on the analysis of website quality with Webqual 4.0 and IPA methods by [2]. This study was intended to evaluate the performance provider company platform Tokopedia. With 100 respondents, the quality of the Tokopedia website has a WebQual Index with a score of 0.85 which can be concluded as a good quality because it was close to 1.00. Indonesia's e-commerce map showed that in the first quarter of 2022, the highest number of website visitors in Indonesia was ranked 1st by Tokopedia [2]. This shows the effectiveness of these two methods in evaluating the website because they have results that are linear with the facts on the ground. However, the results of the 4 quadrants of the IPA method indicate that there is a need to improve performance in quadrant 1, namely on usability parameters related to the ease of operating the Tokopedia Website. This is what makes the Tokopedia website not perfect.

As e-commerce interacts with users through platforms, it is not surprising that the Tokopedia website shows good performance. On the other hand, websites for universities are generally only considered supporting facilities so they require more attention [4]. In his research on the website evaluation for the new student admission, [3] evaluated the Ahmad Dahlan University Website for new student admissions. Conducted with

250 respondents, this study shows that there is a need for improvements to the variable “information that is easy to understand”. For websites that are intended for new student admissions, the ease of understanding information is a very important variable to pay attention to.

3 Methodology

Questionnaire was used as the data collection technique which consisted of 3 dimensions with 23 question indicators. Then, this questionnaire was given to 177 respondents from several countries with the status of students. This questionnaire was distributed indirectly through the link of google form distributed via social media (Whatsapp and e-mail). Before the questionnaire was given to the respondents, the researcher conducted testing on the three dimensions of the questionnaire. In this study, n (number of respondents) = 177 people, and there are three research variables, so to calculate the value of the r table $df = n - 2 = 177 - 2 = 175$, with a significant level of 0.05, the r table obtained is 0.148. Each indicator of the Webqual on Performance or the level of the website is declared valid. All webqual on performance in this study are also declared reliable. It is shown that each research instrument has a very high level of average reliability since *Cronbach's alpha*(r) > 0.06.

After collecting data, the analyses were conducted. In this quantitative study, the data were analyzed by using the two methods; Webqual 4.0 and Importance-Performance Analysis (IPA). This IPA analysis can be carried out by using several steps. Management in a company has a good level of service if the value of the gap is getting smaller [7]. Gap analysis can be done by finding the average value of each variable in terms of importance and performance on the Webqual 4.0 indicators. After getting the average importance/performance on 3 variables of Webqual 4.0, it was followed by getting the average value of the gap (GAP) using the following equation:

$$Q_i (\text{GAP}) = \text{Performance } (i) - \text{Importance } (i)$$

The level of conformity is explained in three parts by 0–32% (users are very dissatisfied), 33–65% (users are not satisfied), and 66–99% (users are satisfied). Then the analysis of IPA quadrant with cartesian diagram was conducted. According to [10], the Cartesian diagram consists of four parts of a building bounded by two perpendicularly intersecting lines at point (X, Y) where X is the average of the Performance average number divided by the number of respondents and Y is the average of Importance average number.

4 Result and Discussion

4.1 Webqual 4.0 Analysis

The gap on the website shows a negative result (<0) which is -0.01 as shown in Tables 1, 2 and 3.

Based on the conformity analysis, the website has an attractive appearance, while the lowest rank on the indicator regarding the competence of the author in creating the website.

Table 1. Results of Webqual on Performance

Number	Answer	Likert Scale	Frequency	Percentage
1	Strongly Disagree	1	14	0.34%
2	Disagree	2	115	2.82%
3	Neither Agree nor Disagree	3	668	16.41%
4	Agree	4	1692	41.56%
5	Strongly Agree	5	1582	38.86%

Table 2. Results of Webqual on Importance

Number	Answer	Likert Scale	Frequency	Percentage
1	Strongly Disagree	1	8	0.20%
2	Disagree	2	128	3.14%
3	Neither Agree nor Disagree	3	598	14.69%
4	Agree	4	1763	43.31%
5	Strongly Agree	5	1574	38.66%

Table 3. Results of Webqual on Importance

Number	Indicator	Performance	Importance	Percentage
1	Usability	4.18	4.17	-0.01
2	Information	4.28	4.27	-0.01
3	Service Interaction	-0.01	4.05	4.06

4.2 Importance-Performance Analysis

The details of the quadrant mapping from IPA analysis are shown in Fig. 1.

Quadrant I contains metrics that website users consider important, however, website developers fail to meet user expectations, so the users feel dissatisfied. The following are indicators that are included in quadrant I.

- a) Indicator number 5 shows that the international website has an attractive appearance or feature.
- b) Indicator number 6 indicates that the international website has a design according to the type of web-based information system.
- c) Indicator number 15 describes the information presented on the international website in the appropriate format (shape, font, color, and multimedia features).

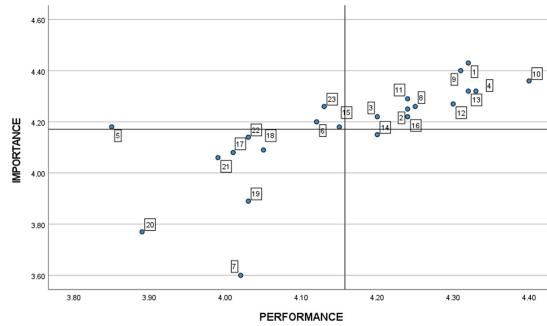


Fig. 1. Quadrant of IPA Analysis

- d) Indicator number 23 shows that the overall appearance of the international website is good.

Indicators in quadrant II show the service attributes on the website affect user satisfaction and need to be maintained because all of these indicators make the website outstanding. The followings are indicators that are included in quadrant II.

- a) Indicator number 1 shows that the users find it easy to learn the operation of the international website.
- b) Indicator number 2 describes that the users are easy to understand the international website.
- c) Indicator number 3 shows that the international website has clear navigation and instructions.
- d) Indicator number 4 gives information that users feel is easy to access on the international website.
- e) Indicator number 8 states that the international website has a positive influence or experience.
- f) Indicator number 9 shows that the international website provides information that is quite clear and there are no errors in the delivery of information.
- g) Indicator number 10 indicates that the information presented on the international website can be trusted.
- h) Indicator number 11 describes that the information provided international website on time or up-to-date.
- i) Indicator number 12 shows that information posted on the international website is relevant to the needs of users.
- j) Indicator number 13 describes that accurate information is presented by the international website.
- k) Indicator number 16 shows that the website has a very good reputation for the users.

Quadrant III is considered less important by users with its actual implementation, so repairs with low priority can be made. The followings are indicators that are included in quadrant III.

- a) Indicator number 7 shows that the international website has complete facilities or features.
- b) Indicator number 17 indicates that users feel safe when interacting with the international website.
- c) Indicator number 18 shows that users feel that their personal information is stored safely on the international website.
- d) Indicator number 19 describes that the international website provides space for user personalization.
- e) Indicator number 20 shows that the international website gives spaces for the community.
- f) Indicator number 21 is the international website gives access to communicate with the campus.
- g) Indicator number 22 shows that the website guarantees a highly trusted information for the users.

In quadrant IV there is an excessive performance by website managers, even though the use of these indicators is less important and the website needs to reduce the level of implementation and resources used in this indicator can be allocated to other factors of concern or priority. There is only one indicator that is included in quadrant IV, namely indicator number 14 which contains information on the international website of the Sriwijaya State Polytechnic which is presented in detail.

5 Conclusion

Based on the gap analysis results, the gap values were negative, which was -0.01. This shows that the website performance is not in the interests of users. On the other hand, the results of the total level of conformity are 89.73%. These results is <100%, which indicates the users' dissatisfaction with the performance of this website. Results of the IPA quadrant shows Quadrant 1 with instruments number 5, 6, 15, and 23, and Quadrant 3 with instruments number 7, 17, 18, 19, 29, 21, 22 need to be improved.

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