Journal of Computer Networks, Architecture and High Performance Computing
Volume 6, Number 3, July 2024
https://doi.org/10.47709/cnapc.v6i3.4039

Submitted : 10 June 2024
Accepted : 21 June 2024
Published : 2 July 2024

User Satisfaction Analysis of the PT Dikstra Cipta Solusi Website Using the Webqual 4.0 Method

Hylenarti Hertyana[1)*], Syahrozi Lomotu [2)], Eva Rahmawati[3)]
[1)*2)] Department of System Information, Universitas Nusa Mandiri, Indonesia
[3)]Department of informatics, Universitas Nusa Mandiri, Indonesia
[1)*]hylenarti.hha@nusamandiri.ac.id, [2)]olomotu@gmail.com, [3)] eva.ehw@nusamandiri.ac.id

ABSTRACT

The abundance of IT consulting firms in this digital era necessitates continuous improvement for these companies. From services to products, everything must be constantly updated. Websites have become a crucial platform for reaching customers connected to the internet. Customer satisfaction is equally important in building trust with IT consulting firms. This makes companies more aware of the need for customer satisfaction. The Webqual 4.0 method can be a solution to help IT consulting firms understand satisfaction from the end user's perspective by measuring website quality in terms of usability, information quality, and service interaction. The use of the Webqual 4.0 method also requires IT consulting firms to pose a series of questions to existing customers to gauge how attractive, informative, useful, and secure a website is when accessed. This makes the method highly effective if the questions asked are accurate and align with the views of the customers or end users. From the research conducted on PT Diksta Cipta Solusi, it was found that the dominant characteristics of the website users are males aged 35-39 years, with a usage frequency of about twice a month. User evaluations of the website fall into the good category, with the majority of users feeling satisfied or very satisfied, as evidenced by the high validity and reliability of the assessments. The most significant factor influencing user satisfaction is usability, particularly in terms of the ease of operating the website. It was discovered that the three independent variables—usability, information quality, and service interaction—collectively influence user satisfaction. This study makes an important contribution by demonstrating the effectiveness of the Webqual 4.0 method in measuring website quality and providing insights for IT consulting firms to focus on improving usability, information quality, and service interaction to enhance user satisfaction.

Keywords: IT Consultant; Analysis; User Satisfaction; Website; Webqual 4.0

1. INTRODUCTION

The digital era has ushered in an unprecedented wave of technological advancements that have fundamentally transformed how we live, work, and interact. Over the past few decades, this period has witnessed rapid developments in digital technology, reshaping industries, economies, and social structures worldwide. The integration of technologies such as AI, machine learning, robotics, and automation has dramatically impacted various sectors, enhancing productivity and quality of life while posing significant challenges that require proactive management (Wang & Siau, 2019) Additionally, the advancements in information technology have driven economic and social transformations, highlighting the need for businesses to innovate and adapt to stay competitive in the global market (Vertakova & Babich, 2021). Cloud computing, big data analytics, and artificial intelligence have empowered businesses to leverage vast amounts of data, gain valuable insights for precise decision-making, and deliver personalized customer experiences. Additionally, the shift towards digital communication and collaboration tools has altered workplace dynamics, enabling remote work and global connectivity.

Before establishing ethical behavior in the use of digital technology, it is essential to have a solid understanding of technology as a system, as well as the potential ethical implications that may arise. In the context of current digital technology usage, internet usage has become a necessity. The internet not only provides global reach but also enables companies to interact directly with customers (Kurniawan Candra, 2019).

Websites are a crucial example of communication and collaboration tools in this era. Since their invention in

* Corresponding author

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1991, websites have rapidly evolved and transformed the operations of many industries to this day. As a medium that contains information pages, websites can be accessed via the internet and enjoyed globally (Susilawati et al., 2020).

An IT Consultant is a company or entity that focuses on integrating different information technology systems to work together seamlessly and efficiently. IT Consultants are responsible for connecting various software, hardware, and other technologies into an integrated infrastructure. IT Consulting companies also utilize available information technology to support their business operations. When implementing information technology, IT Consulting companies should consider the capability and ease of use to achieve optimal results.

PT Dikstra Cipta Solusi is an IT Consulting company based in Jakarta that uses website technology as its information technology. All information, including service offerings, partnerships, provided solutions, and existing customer information, is presented in the form of a website to provide the best service to customers. The urgency at PT Dikstra Cipta Solusi arises from the need to stay competitive in the rapidly advancing digital era. Their website must continuously improve to effectively reach and satisfy customers. Ensuring high usability, accurate information, and secure service interactions is crucial, as these factors significantly influence user satisfaction. The study identified key areas for improvement, emphasizing the importance of regular updates and evaluations using the Webqual 4.0 method. Addressing these issues is essential for maintaining customer trust, meeting evolving user needs, and sustaining a competitive edge in the IT consulting industry.

The quality of PT Dikstra Cipta Solusi's website services is crucial for attracting new customers. According to data obtained by researchers on December 4, 2023, the number of users of PT Dikstra Cipta Solusi's website was 1,100 from August to September.

Measuring the quality of a website is important because it is an integral part of efforts to build it to meet user expectations and satisfaction (Utami Lilyani Asri et al., 2020). One approach that can be used to analyze website quality is the Webqual 4.0 method. This method is a tool for evaluating the quality of a website by considering the opinions or perceptions of the users or visitors.

The three variables used as benchmarks in the Webqual 4.0 method to evaluate website quality are usability, information quality, and service interaction (Prastiti Novi et al., 2021). Through these three variables in Webqual 4.0, the information provided tends to be accurate and can assess the extent to which a website is fit for use.

2. LITERATURE REVIEW

Webqual 4.0 is a widely used framework for assessing website quality and its impact on user satisfaction. This method evaluates three main dimensions: usability, information quality, and service interaction quality. These dimensions collectively help in understanding user satisfaction and provide insights for website improvements. Usability is one of the most significant factors influencing user satisfaction. It includes ease of use, navigation, and overall user experience on the website. Research by firdaus found that usability has the highest correlation with user satisfaction, indicating that this factor is very important (Firdaus et al., 2019). Esmaeili Givi et al. (2023) also supported this finding, highlighting usability as part of high-performance excitement factors (Esmaeili Givi et al., 2023). Additionally, other research concluded that improving usability is crucial for increasing user satisfaction on educational websites (Pamungkas, 2019).

Information quality relates to the accuracy, relevance, and completeness of the content provided on the website. (Panggabean & Sinambela, 2020) noted that information quality significantly affects user satisfaction, especially on websites. Nugraha's research emphasized the importance of accurate and relevant information for user satisfaction on government websites (Nugraha et al., 2020).

Service interaction quality focuses on the support, trust, and empathy provided by the website to its users. Recent studies have shown that service interaction quality, along with usability and information quality, plays an important role in determining user satisfaction. For example, interaction quality, including trust and empathy, significantly influences user satisfaction with vocational school quality assurance websites (Hadi et al., 2023). Additionally, the dimensions of reliability, responsiveness, and assurance have been shown to impact user satisfaction with helpdesk service systems (Fadilah & Handrianto, 2023). Moreover, a study on the Eskanusa.com website confirmed that usability, information quality, and interaction quality are critical factors affecting user satisfaction (Lazzuardi Effendi et al., 2021) Wijaya et al. (2021) found that service interaction quality significantly affects both user satisfaction and customer loyalty on e-commerce websites (Wijaya et al., 2021).

The study “Analysis of Website Quality Using Webqual 4.0 Method: Case Study of MyBest E-learning System UBSI” by Indah Purwandani and Nurfia Oktaviani Syamsiah (2021) found that the evaluation conducted can provide

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input for the university to maintain the existing quality of services, information, and interactions. Continuous innovation and regular updates of information are necessary to maintain user attraction (Purwandani & Syamsiah, 2021).

The Webqual 4.0 framework effectively measures website quality through the dimensions of usability, information quality, and service interaction quality, all of which significantly influence user satisfaction. For PT Dikstra Cipta Solusi, focusing on these dimensions and implementing continuous innovation and regular information updates can help enhance user satisfaction and overall website performance.

3. METHOD

The progress of this research began with identifying the existing issues on the PT Dikstra Cipta Solusi website, followed by a preliminary study and an evaluation of user satisfaction through questionnaires distributed to respondents. The data sources for the study on user satisfaction with the PT Dikstra Cipta Solusi website were primarily gathered from existing customers in the Jabodetabek area and its surroundings who actively used the company's website. A total of 51 questionnaires were distributed, and 45 were returned and completed by these customers, forming the sample for this study.

The development of the questionnaire was a critical step, structured around the Webqual 4.0 method, which evaluates three main variables: usability, information quality, and service interaction. For the usability dimension, questions assessed the ease of use, navigation, and overall user experience of the website with statements such as "The PT Dikstra Cipta Solusi website is easy to operate" and "The menu of the PT Dikstra Cipta Solusi website is easy to find". In the information quality section, questions evaluated the accuracy, reliability, and comprehensibility of the information provided, including indicators like "The information presented on the PT Dikstra Cipta Solusi website is accurate" and "The information on the PT Dikstra Cipta Solusi website is trustworthy". The service interaction dimension focused on perceived service quality, security, and user support, with statements such as "The PT Dikstra Cipta Solusi website guarantees the security of user information" and "Users feel safe using the PT Dikstra Cipta Solusi website".

Respondents rated each question on a Likert scale, indicating their level of satisfaction from "Very Satisfied" to "Very Dissatisfied". This structured approach ensured that all relevant aspects of user satisfaction were comprehensively covered. The collected data were analyzed to confirm the reliability and validity of the responses, providing a robust foundation for assessing user satisfaction and identifying key areas for improvement on the PT Dikstra Cipta Solusi website.

The collected data were analyzed using the Webqual 4.0 method before drawing conclusions. This research process is illustrated in Figure 1.

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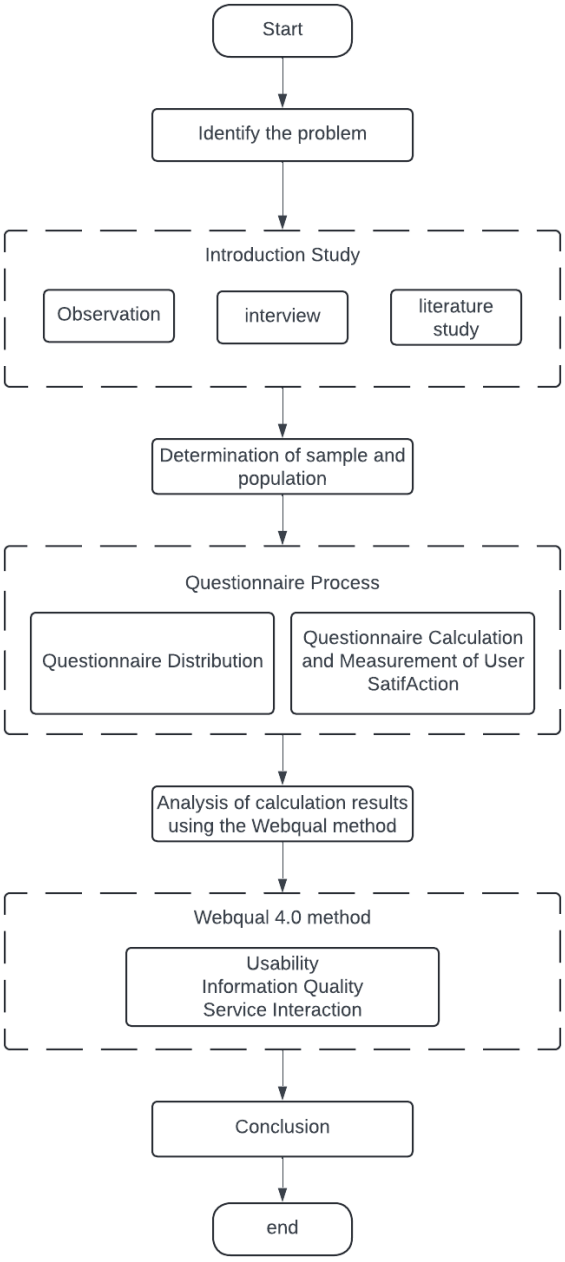


Fig.1 Research Stages

The stages of the research are as follows:

1. Problem Identification
In this initial stage, the author identifies the issues present on the PT Dikstra Cipta Solusi website.

2. Preliminary Study
After identifying the problems, the author conducts a preliminary study, including:

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a. Interview
This research involves a direct interview with Mr. Karel Alexander, who serves as the Lead IT Manage Service at PT Dikstra Cipta Solusi. The interview revealed that PT Dikstra Cipta Solusi manages their website through a server located in Jakarta, while user satisfaction testing has never been conducted on the company's website.

b. Observation
The author begins by establishing the behaviors that will be the focus of the research, followed by formulating systematic procedures to identify, categorize, and record these behaviors, both in natural and created situations.

c. Documentation
The information obtained can come from relevant divisions within the research or reference sources from books related to the research topic, all used for the purpose of report preparation.

d. Literature Review
In conducting the literature review, data are collected from various sources such as research reports, scientific book references, articles, and journals related to the research focus being undertaken.

3. Supporting Theory

a. Analysis
Data analysis is a crucial stage in organizing and structuring data from interviews, field notes, and documentation. This process includes categorizing data into groups, dividing data into separate units, synthesizing data, forming patterns, emphasizing essential information, and drawing conclusions to be easily understood by researchers and others (Sugiyono, 2021).

b. User Satisfaction
According to Park in (Irawan H, 2021), user satisfaction is the emotional response or evaluation performed by users or consumers towards the products or services they have consumed.

c. Likert Scale
In the Likert scale method, each indicator is represented by a single statement, and each statement is responded to using a Likert scale, which ranges from very positive to very negative. This scale typically uses phrases like 'Very Satisfied', 'Satisfied', 'Dissatisfied', and 'Very Dissatisfied' to express responses.

4. Sampling
A sample includes a portion of the total number and characteristics possessed by a population. When the population is very large and cannot be thoroughly studied due to limited funds, time, or effort, the researcher selects a sample that represents the population as the research object (Sugiyono, 2022). This study uses a sample of existing customers of PT Dikstra Cipta Solusi in the Greater Jakarta area and surrounding regions who use the PT Dikstra Cipta Solusi website.

5. Questionnaire

Table 1
Questionaire

No	Usability	SP	P	TP	STP
1	The PT Dikstra Cipta Solusi website is easy to operate				
2	The menu on the PT Dikstra Cipta Solusi website is easy to find				
3	The PT Dikstra Cipta Solusi website is available 24/7				
4	The PT Dikstra Cipta Solusi website design is very attractive				
No	**Information Quality Variables**				
1	The information presented on the PT Dikstra Cipta Solusi website is accurate				
2	The information presented on the PT Dikstra Cipta Solusi website is reliable				
3	The information presented on the PT Dikstra Cipta Solusi website is easy to understand				
4	The information presented on the PT Dikstra Cipta Solusi website is timely				
No	**Service Interaction Variables**				
1	The PT Dikstra Cipta Solusi website has a good reputation				

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2	The PT Dikstra Cipta Solusi website ensures user information security				
3	Users feel safe using the PT Dikstra Cipta Solusi website				
4	The PT Dikstra Cipta Solusi website ensures security for downloading				
No	**User Satisfaction Variables**				
1	I enjoy using the PT Dikstra Cipta Solusi website				
2	The PT Dikstra Cipta Solusi website provides additional knowledge				
3	The PT Dikstra Cipta Solusi website offers services as promised				
4	I will recommend the PT Dikstra Cipta Solusi website to my friends				

Description: SP = Very Satisfied P = Satisfied TP = Dissatisfied STP = Very Dissatisfied

6. Webqual 4.0 Method

Table 2
Webqual 4.0 Indicator

No	Variabel	Indicator
1	**Usability**	I find this site easy to use.
2		My connection with this site is quite simple and uncomplicated.
3		I found the site easy to navigate.
4		The look of this website is pleasant.
5		The design is adequate for the purpose of this website.
6		The professional feel of this webpage is strong.
7		This site provides a satisfying experience for me.
8	**Information quality**	Presents the right information.
9		Present reliable information.
10		It provides timely information.
11		The information is relevant to what is needed.
12		Presents information that is simple to understand.
13		Presents information with an appropriate degree of detail.
14		Presents the information in a style that is suitable
15	**Service interaction**	It holds a favorable reputation
16		It provides a secure environment for transactions.
17		I trust that my personal information is secure.
18		It promotes a sense of personal identity.
19		It fosters a feeling of inclusion.
20		It enables easy communication with the organization.
21		I trust that the goods/services will arrive punctually.

Source: (Ramadhan & Hartomo, 2022)

4. RESULT

This study uses a sample of existing customers of PT Dikstra Cipta Solusi in the Greater Jakarta area and surrounding regions who use the PT Dikstra Cipta Solusi website, with a total of 51 respondents. However, only 45 questionnaires were returned, corresponding to 45 existing customers of PT Dikstra Cipta Solusi who meet the criteria of using the PT Dikstra Cipta Solusi website. Therefore, this study uses 45 samples or respondents.

Table 3
Questionnaire Distribution

Description	Quantity
The questionnaire does not meet the established standards	6

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The questionnaire meets the required criteria	45
Total	**51**

Questionnaire distribution was also carried out to understand the profile of respondents, including demographic data such as age, gender, and frequency of using the PT Dikstra Cipta Solusi website in a month.

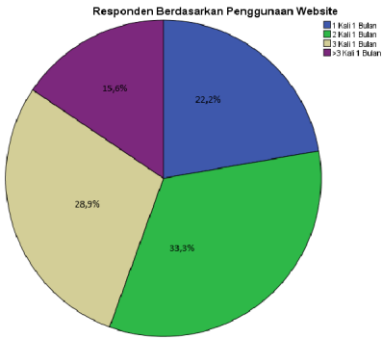


Fig. 2 Characteristics of Respondents Based on Website Users
Source: Result From SPSS23

From Figure IV.18, it can be seen that the majority of respondents use the PT Dikstra Cipta Solusi website twice a month, accounting for 33.3% or 15 respondents, which is represented in green. This is followed by usage three times a month, reaching 28.9% or 13 respondents, represented in cream. Then, usage once a month accounts for 22.2% or 10 respondents, represented in blue, and lastly, more than three times a month accounts for 15.6% or 7 respondents, represented in purple.

User satisfaction assessment in this method was conducted through a questionnaire using the Likert scale, based on the Webqual 4.0 concept, which consists of three variables: usability, information quality, and service interaction. The user satisfaction scale consists of: 4 (very satisfied), 3 (satisfied), 2 (dissatisfied), and 1 (very dissatisfied), and the interpretation of the results can be found in Table 4.

Table 4
User Satisfaction Score Results

Variabel	Indicator Code	Answer Score					Avg	Interpretation
		SP	P	TP	STP			
Usability	U1	14	23	7	1		3.11	Very Dissatisfied
	U2	13	19	12	1		2.97	Satisfied
	U3	12	24	6	3		3	Satisfied
	U4	13	22	8	2		3.02	Satisfied
Information quality	IQ1	11	20	10	4		2.84	Satisfied
	IQ2	8	24	9	4		2.8	Satisfied
	IQ3	16	19	8	2		3.08	Satisfied
	IQ4	12	23	8	2		3	Satisfied
Service interaction	SI1	20	7	14	4		2.95	Satisfied
	SI2	21	5	11	8		2.86	Satisfied
	SI3	14	12	13	6		2.75	Satisfied
	SI4	14	6	21	4		2.66	Satisfied
User satisfaction	US1	9	27	8	1		2.97	Satisfied
	US2	1	17	19	8		2.24	Dissatisfied

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	US3	12	20	10	3		2.91	Satisfied
	US4	9	16	18	2		2.71	Satisfied

Source: Likert Scale Data Processing Results Using Microsoft Excel

The evaluation of the validity test results shows that for the variables usability (X1), information quality (X2), service interaction (X3), and user satisfaction (Y), all research instruments have a validity coefficient (r) > 0.294 (r table) and significance < 0.05. This confirms the validity of all instruments used to measure these variables in this study. Therefore, all statements presented to the respondents are proven to be appropriate as instruments for measuring the research variables.

The evaluation of the reliability test results shows that usability, information quality, service interaction, and user satisfaction have Cronbach's Alpha values exceeding 0.60. The Cronbach's Alpha values for each variable are 0.771 for usability (X1), 0.786 for information quality (X2), 0.758 for service interaction (X3), and 0.614 for user satisfaction (Y).

Thus, all measurement concepts of the variables in the research questionnaire have been proven to be highly reliable as their values exceed 0.60 and are within the range of 0.60 to 0.80. This indicates consistent results from the measurement of these variables. Since the validity and reliability tests show valid and reliable results, the questionnaire used has been proven to be suitable for this research.

The calculation results from the multiple linear regression analysis in the previous table, which show the influence of usability, information quality, and service interaction on user satisfaction, present the regression equation as follows:

$$\mathbf{Y = 1,166 + 0,359X1 + 0,240X2 + 0,24X3} \quad (1)$$

Description:

Y = User satisfaction
X_1 = Usability
X_2 = Information quality
X_3 = Service interaction

The results of the regression equation allow the researcher to interpret the influence of each variable as follows:

1. A constant value of 1.166 indicates that when the variables usability, information quality, and service interaction do not change (value 0), user satisfaction will increase by 1.166.
2. A positive usability coefficient of 0.359 shows that each 1-point increase in usability will result in an increase of 0.359 in user satisfaction, assuming other variables remain stable. From these results, it can be interpreted that usability contributes 0.359 to user satisfaction.
3. A positive information quality coefficient of 0.240 shows that each 1-point increase in information quality will result in an increase of 0.240 in user satisfaction, assuming other variables remain stable. From these results, it can be interpreted that information quality contributes 0.240 to user satisfaction.
4. A positive service interaction coefficient of 0.224 shows that each 1-point increase in service interaction will result in an increase of 0.224 in user satisfaction, assuming other variables remain stable. From these results, it can be interpreted that service interaction contributes 0.224 to user satisfaction.

From the results of the t-test, it can be concluded:

1. The t-value for the usability variable (X1) is 2.908, exceeding the t-table value (2.908 > 1.682), with a significance of 0.006 < 0.05. This indicates the acceptance of Ha, meaning there is a significant influence of usability on user satisfaction.
2. The t-value for the information quality variable (X2) is 2.066, exceeding the t-table value (2.066 > 1.682), with a significance of 0.045 < 0.05. This confirms the acceptance of Ha, showing a significant influence of information quality on user satisfaction.
3. The t-value for the service interaction variable (X3) is 2.961, exceeding the t-table value (2.961 > 1.682), with a significance of 0.005 < 0.05. This confirms the acceptance of Ha, showing a significant influence of service interaction on user satisfaction.

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4. In this study, the number of respondents (n) is 45, with the number of independent variables (k) being 3. Thus, the degrees of freedom for the numerator (df1) is 3, while for the denominator (df2) it is calculated as n - k - 1, which is (45 - 3 - 1) = 41. Therefore, df1 (n1) = 3 and df2 (n2) = 41, and the F-table value obtained is 2.83.

Table 5
F-Test Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	100,165	3	33,388	12,705	,000[b]
	Residual	107,746	41	2,628		
	Total	207,911	44			

a. Dependent Variable: User satisfaction (Y)
b. Predictors: (Constant), Service interaction (X3), Usability (X1), Information quality (X2)

Source:Hasil Output SPSS23

Based on the information in the table, the calculated F-value is 12.705, while the F-table value is 2.83 with a significance value of 0.000. From this comparison, it can be concluded that the calculated F-value is greater than the F-table value (12.705 > 2.83) and the significance value of 0.000 is less than 0.05. This indicates that the independent variables such as usability, information quality, and service interaction have a significant simultaneous effect on user satisfaction.

5. DISCUSSIONS

Recommendations to help PT Dikstra Cipta Solusi improve service quality in this research include:

PT Dikstra Cipta Solusi should tighten the provision of shared files on the PT Dikstra Cipta Solusi website to users, as 21 respondents expressed dissatisfaction with the service interaction variable. PT Dikstra Cipta Solusi should frequently check website scores or website reputation to enhance the website's reputation. This can be done by checking if the website domain is categorized as blacklisted, as 14 respondents expressed dissatisfaction with the service interaction variable.

There is a need to improve information on the PT Dikstra Cipta Solusi website by adding more diverse case studies, project goals, and more certification information. This is because, in the user satisfaction variable, 19 respondents expressed dissatisfaction with the US2 indicator (PT Dikstra Cipta Solusi website adds knowledge information), and 18 respondents expressed dissatisfaction with the US4 indicator (I will recommend the PT Dikstra Cipta Solusi website to my friends).

In the researcher's view after conducting observations, system integrator companies often visit customers directly to expand relations with new customers. From the interview results, the PT Dikstra Cipta Solusi website is more directed towards being just a company portfolio. Future studies could choose alternative methods such as End User Computing Satisfaction or Green and Pearson to measure user satisfaction, providing a more comprehensive comparison of results.

6. CONCLUSION

Based on the analysis of user satisfaction responses to the PT Dikstra Cipta Solusi website, the author draws the following conclusions. The dominant characteristics of PT Dikstra Cipta Solusi website users are male, with the majority being in the age range of 35 to 39 years old, and most users accessing the website twice a month. The evaluation of users places the PT Dikstra Cipta Solusi website in a good category, as the majority of users feel satisfied or very satisfied, providing high validity and reliability to the assessment results. The factor that most influences user satisfaction with the PT Dikstra Cipta Solusi website is usability, with the highest average score of 3.11 on variable U1, "The PT Dikstra Cipta Solusi website is easy to operate." Furthermore, the results of simultaneous hypothesis testing show that the three independent variables—usability, information quality, and service interaction—collectively affect the dependent variable, user satisfaction.

* Corresponding author

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* Corresponding author

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Journal of Computer Networks, Architecture and High Performance Computing
Volume 6, Number 3, July 2024
https://doi.org/10.47709/cnapc.v6i3.4039

Submitted : 10 June 2024
Accepted : 21 June 2024
Published : 2 July 2024

https://doi.org/10.4018/JDM.2019010104

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* Corresponding author

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