

## QUALITY ANALYSIS OF THE ELECTRONIC GOVERNMENT PROCUREMENT ORDER SYSTEM USING WEBQUAL AND EUCS METHODS

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**Abstract**— Within district of Hulu Sungai Selatan there is a website for the community to offer goods or services, namely SIOOPEN, SIOOPEN functions as a forum for the HSS community and umkm to offer their goods or services to the local government. The goal of this research is to evaluate SIOOPEN's quality using the Webqual approach and users' degree of satisfaction using the EUCS approach. The Webqual approach, which has three dimensions information quality, usability, and interaction service was employed in this research together with the EUCS approach. The EUCS approach has some variables in partikular ease of use, accuracy, format, content, and timeliness. The approach of gathering information data through respondents via sending out online questionnaires to SIOOPEN users and determining the sample using the formula from Slovin obtained 88 users then obtained by Webqual Index and Average Satisfaction. The results of research measuring the three dimensions of Webqual show that are in very good interpretation, The information quality dimension obtained 0.8392, the usability dimension obtained 0.8292, then the service interaction dimension obtained 0.8284. The findings from assessing the level of the satisfied user three variables of EUCS in particular content at a score of 4.27, ease of use at a score of 4.21, and timeliness at a score of 4.28 are at very satisfied level, then the other two variables are accuracy at a score of 4.15 and format at a score of 4.11 at a satisfied level.

**Keywords:** SIOOPEN, end-user computing satisfaction, website, webqual.

**Intisari**— Di kabupaten hulu sungai selatan terdapat website untuk masyarakatnya dapat menawarkan barang ataupun jasa yakni SIOOPEN, SIOOPEN berfungsi sebagai wadah bagi masyarakat hss dan umkm dapat menawarkan barang ataupun

jasa mereka ke pihak pemerintah daerah. Studi ini memiliki tujuan akhir dalam mengevaluasi kualitas SIOOPEN dengan pendekatan Webqual dan tingkatan kepuasan pengguna dengan pendekatan EUCS. Pendekatan Webqual, yang memiliki tiga dimensi kualitas informasi, kegunaan, dan interaksi layanan digunakan pada studi ini bersama dengan pendekatan EUCS. Pendekatan EUCS memiliki beberapa variabel, yaitu: konten, akurasi, bentuk, mudah dalam kegunaan, dan ketepatan dalam waktu. Pendekatan pengumpulan data informasi dari responden melalui penyebaran kuesioner online kepada pengguna SIOOPEN dan penentuan sampel dengan menggunakan rumus dari Slovin diperoleh 88 pengguna kemudian diolah dengan Webqual Index dan Rata-rata Kepuasan. Hasil penelitian yang mengukur ketiga dimensi Webqual menunjukkan bahwa berada pada interpretasi sangat baik, Dimensi kualitas informasi memperoleh 0.8392, dimensi usability memperoleh 0.8292, kemudian dimensi interaksi layanan memperoleh 0.8284. Temuan dari penilaian tingkat kepuasan pengguna tiga variabel EUCS khususnya konten pada skor 4.27, mudah dalam kegunaan pada skor 4.21, lalu ketepatan dalam waktu pada skor 4.28 berada pada tingkat sangat puas, kemudian dua variabel lainnya yaitu akurasi pada skor 4.15 dan bentuk pada skor 4.11 berada pada tingkat puas

**Kata Kunci:** SIOOPEN, kepuasan komputasi pengguna akhir, situs, webqual.

### INTRODUCTION

The rapid advancement of information technology has made it an indispensable tool in everyday life, serving as a key way of helping human activities that generate information to enhance organizational performance. Organizations are

required to use information technology to meet their needs to support various purposes, both for communication, online service systems, online business, and the need for information (Fatmawati, Sukarsa, & Mandenni, 2022). Technology plays a significant part in life by facilitating the utilization of information systems (Prasongko & Nurdin, 2023). Information systems play an important role as one of the main needs in an organization, one of which is the UKPBJ (Goods and Services Procurement Work Unit) of Hulu Sungai Selatan Regency called SIOPEN HSS (Hulu Sungai Selatan Regency Government Order System).

SIOPEN is an information system that is under the UKPBJ supported by the Regional Government, the Communication and Information Service, and the Electronic Procurement Service. SIOPEN was created with the hope of encouraging business growth, expanding business opportunities, and improving the welfare of business people in Hulu Sungai Selatan Regency. By utilizing SIOPEN as a promotional media, it will be more effective and efficient for business actors (Rusi, 2022). Research from Kiki et. al. evaluated a website called E-catalog of government procurement within the scope of usability testing. Despite the different approaches used, the information technology used uses the same concept, namely as a platform to support local businesses and transparency of purchasing transaction reports in local governments (Emyarsari, Hendradi, & Nugroho, 2023).

Based on observations SIOPEN was inaugurated in 2022, the use of SIOPEN which is still relatively new has problems in terms of its functionality such as features that have not functioned properly and properly. Interviews that have been conducted found that SIOPEN has never been evaluated for website quality measurement with Webqual so that it is not yet known how SIOPEN user satisfaction is, the notification feature that becomes a user complaint when getting an order gets late notification of information, minimal information about the orderer during the ordering process, and the procedures for using the SIOPEN website itself are still difficult.

The effectiveness of SIOPEN's services is critical to achieving the system's goals and is correlated with user happiness. Service quality is the main fundamental in determining how satisfied users are related to information systems that can meet user needs and expectations. If the quality of information system services provided is good and according to user needs, the degree to which the information system is satisfied service users will also be good and fulfilled (Rusi, 2022).

Webqual is one workable method for assessing the level of service on a website. A

common measuring technique is used to assess the benchmark of a website determined by its end users' opinions which called Webqual (Rusi, 2022). The pleasure of users is affected by an information system quality of service; In this case, one method of assessing the user's level system happiness is end-user computing satisfaction (EUCS). EUCS defined as measurement approach that aims to assess a system as a whole based on the experience and satisfaction of system users (Rusi, 2022).

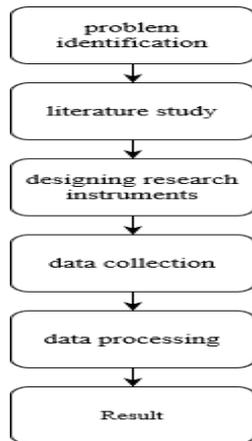
Therefore, the selection of the Webqual and EUCS methods the selection of these two techniques is considered suitable and appropriate, because Webqual can be used as an instrument to measure website quality, while EUCS is used to determine end-user satisfaction from an information system (Rusi, 2022). Therefore, based on the problems found and then reinforced by these two methods, this research is important to do so that it provides benefits in the website developer. The goal of this research is to evaluate SIOPEN's quality using the Webqual approach and users' degree of satisfaction using the EUCS approach.

In 1998 Stuart Barnes & Richard Vidgen created the Webqual technique to evaluate or gauge a website's quality. Version 4.0 of Webqual uses the aspects of information, service interaction quality, and usability, while version 1.0 applied different dimensions. Research from (Utami, Winarno, & Setiadi, 2021) states that because the webqual 4.0 technique focuses on evaluating the quality of websites, it was selected.

The information system in the EUCS method itself is a model created by experts named Gholamreza Torkzadeh & William J. Doll in 1988 who developed the EUCS instrument method to obtain a result from the user satisfaction value (Gobel, Katili, & Polin, 2022). A technique for gauging satisfaction of the information system's end users in use is the EUCS model (Fauzi & Yuhana, 2022). Research from (Putera & Candiasa, 2021) states that the EUCS approach was chosen with the purpose of analyzing e-learning system users' satisfaction levels based on the five EUCS aspects.

## MATERIALS AND METHODS

This study employed a structured methodology to ensure accurate and reliable results. The methods applied followed a systematic approach, beginning with problem identification, literature review, research instrument design, data collection, data processing, and research results. A detailed overview of the research flow is presented in the diagram below to visualize the sequential stages of the study.



Source: (Research Results, 2024)  
 Figure 1. Research Flow Diagram

A. Problem Identification

Researchers conducted observations and interviews at SIOPEN HSS which is still relatively new, there are problems in terms of its functionality. Interviews were conducted with one of SIOPEN employees Taufiq Anshari to map out what researchers needed in the research. features that are still under development, servers that are often down and user usability that confuses users. Researchers also reviewed based on their own observations that there are things that have not been running properly such as product photos that are damaged or not displayed, other users also conveyed that receiving notifications sometimes does not appear.

B. Literature Study

Researchers search and review literature in the form of theories that intersect with Webqual and EUCS website quality analysis research. In the formulation of research variables and indicators, the researcher refers to both methods which in development have three variables for Webqual 4.0 and five variables in EUCS.

C. Designing Research Instruments

The research instrument is a questionnaire with a closed nature, a scale commonly used by researchers, namely Likert. Likert scale assesses the attitude or behavior desired by the researcher by asking several questions to the respondent and is answered by the respondent according to the answers provided, in this case strongly agree, agree, neutral, disagree and strongly disagree(Sukardi, 2018), each statement on the questionnaire refers to the research variables that have been determined. The basis for selecting statements refers to the Webqual 4.0 method which consists of three variables with 19 statements and EUCS

consists of five variables with 15 statements and the combination of the two is 34 statements.

Tabel 1. Webqual Instrument

Variable	Statement	Code
Usability Quality	SIOPEN is easy to learn and operate.	USQ1
	Interaction with SIOPEN is understandable and recognizable	USQ2
	SIOPEN has an easy-to-find navigation menu.	USQ3
	The SIOPEN website is easy to find when searching (googling).	USQ4
	SIOPEN's design is in accordance with its type (online shop website).	USQ5
	With SIOPEN you can increase product sales.	USQ6
	Users get positive experience from SIOPEN	USQ7
Information Quality	SIOPEN provides reliable information.	INQ1
	SIOPEN provides up to date news.	INQ2
	Relevant information is provided by SIOPEN.	INQ3
	Easy to understand information is provided by SIOPEN.	INQ4
	SIOPEN offers comprehensive details.	INQ5
Service Interaction Quality	SIOPEN has a good reputation.	SIQ1
	SIOPEN provides users with a sense of security in transaction activities.	SIQ2
	SIOPEN provides a sense of security regarding user personal information or data.	SIQ3
	SIOPEN creates a personal impression for users.	SIQ4
	When using SIOPEN, users feel like they are part of the SIOPEN provider.	SIQ5
	SIOPEN provides easy communication with local government.	SIQ6
	SIOPEN provides services as promised.	SIQ7

Source: (Research Results, 2024)

Tabel 2. EUCS Instrument

Variable	Statement	Code
Content	Details in SIOPEN show user needs.	C1
	Users can recognize detailed data in SIOPEN easily.	C2
	The data details in SIOPEN are perfect.	C3
	The information content in SIOPEN is clear	C4
Accuracy	The SIOPEN system displays information accurately and correctly.	AC1

Variable	Statement	Code
Format	The SIOPEN page that users access/open is according to the user's wishes.	AC2
	Users are satisfied with the accuracy of SIOPEN.	AC3
	SIOPEN's display design has an easy-to-understand link and menu structure.	F1
	SIOPEN's display design has a layout that provides convenience for its users.	F2
	SIOPEN has an attractive color combination.	F3
	SIOPEN is easy for users to access.	EoU1
Easy of Use	SIOPEN is easy for users to navigate.	EoU2
	SIOPEN can be accessed anywhere and anytime.	EoU3
	SIOPEN displays the latest information quickly.	T1
Timeliness	SIOPEN users can obtain the data or information they need quickly and accurately.	T2

Source: (Research Results, 2024)

#### D. Data Collection

The first step in collecting data is watching SIOPEN users to determine how many samples are needed using the Slovin algorithm (DS & Sanjaya, 2021). The total population of SIOPEN users is 705.

$$n = \frac{N}{1 + N \cdot e^2} \quad (1)$$

n = amount of responders in the sample

N = seluruh populasi responden

e = allowable margin of error (10%)

then it can be determined how many samples to achieve as follows

$$n = \frac{705}{1 + 705 \cdot 0.1^2} = 88 \text{ respondent}$$

The questionnaire was used as a tool to collect data from respondents. The questionnaire used is online, uses Google Form, and contains closed questions that facilitate data analysis. Researchers in distributing questionnaires to respondents refer to their contacts who can be contacted such as *WhatsApp*, their contacts are available on the website provider page so that researchers do not need to go to the field to find respondents. Researchers can do this because they have obtained research permission from SIOPEN.

#### E. Data Processing

Data obtained via the use of questionnaires is processed using Microsoft Excel & SPSS software. The data processing stage includes testing the

validity and reliability of the instrument, as well as calculating Webqual & EUCS. The statistical analysis technique in this study uses descriptive analysis with quantitative method lines. Descriptive analysis is part of statistics that studies how to collect and present data so that it is easy to understand, and its purpose is only to describe information or provide information about data, conditions, or phenomena (Putera & Candiasa, 2021).

##### 1. Validity & Reliability Test

To make sure the instruments used for data collection were reliable and valid, validity and reliability tests were carried out. Validity is measured using the product moment correlation coefficient, while reliability is measured using the Cronbach alpha value (Muhammad Asep Rosyady, 2021).

##### 2. Webqual Index

The SIOPEN website's quality is assessed using the Webqual Index (WQI), which takes into account user expectations and perceptions (Sucipto, 2021). The weighted score is determined by multiplying the means of performance by the means of importance and then the highest (max) score is obtained by multiplying the Mean of Interest (MoI) number by the largest Likert scale. WQI is determined by comparing the maximum score to the weighted score (Syahputri, Rizkya, Siregar, & Syardhi, 2021).

$$WQI = \frac{\text{weighted score}}{\text{maximum score}} \quad (2)$$

WQI results obtained can be drawn conclusions about the quality of the site based on the WQI interpretation in the following table:

Interval WQI	Quality Rate
0.00 – 0.19	Very Not Good
0.20 – 0.39	Not Good
0.40 – 0.59	Enough
0.60 – 0.70	Good
0.80 – 1.00	Very Good

Source: (Research Results, 2024)

##### 3. EUCS

User satisfaction is measured using Kaplan and Norton's theory with Average Satisfaction (RK) as the main indicator (Putera & Candiasa, 2021). The means satisfaction score is a widely used measure of the level of user satisfaction with incremental service, product or system improvement. User satisfaction assessment: average user satisfaction score is calculated by administering a series of questions or items giving high-level description

about users' experiences and then averaging the scores that are given back to us.

$$RK = \frac{JSK}{JK} \quad (3)$$

RK = average level of satisfaction  
 JSK = Total Score on the Questionnaire  
 JK = Number of Questionnaires

#### 4. Expert Recommendations

From Nanny's research that makes recommendations & suggestions (Setyoningrum, 2020), this research in making recommendations for improvement, is not based on the opinion of the researcher but involves expert designers so as to strengthen the recommendations. The process of getting recommendations based on an expert named Ahmad Rifki Nurrahman who now works at Hulu Talent. The researcher involved the expert on the basis of more than 5 years of experience in designers such as UI/UX. The researcher gave the SIOOPEN link to the expert and one of the weak statements among the webqual and EUCS statements, as for the statement coded SIQ 7 and F 3. The expert then analyzed SIOOPEN by adhering to these two statements so that improvement recommendations were produced.

### RESULTS AND DISCUSSION

The findings of the conducted research are presented in this section.

Tabel 4. Gender Data

Gender	Number Respondents	Percentage
Male	46	52%
Female	42	48%
Total	88	100%

Source: (Research Results, 2024)

Table 4 is data on the results of respondents based on gender.

Tabel 5. Joining Year Data

Year	Number Respondent	Percentage
2022	44	50%
2023	29	33%
2024	15	17%

Source: (Research Results, 2024)

Table 5 is data on the results of respondents who have joined SIOOPEN based on year.

#### A. Validity & Reliability Result

To determine the correlation value  $r$  table refers to the degree of freedom formula, namely  $n - 2$  and significance 0,05,  $n$  means the amount of data. The use of the formula is as follows  $df = 88 - 2 = 86$ , following that 0.209 is the  $r$ -tabel. In this study,

validity was assessed by comparing each item's score to the total score (Jumiasih & Maruloh, 2024). In the context of research, item validity is the degree to which a question in a questionnaire, for example, truly assesses the subject matter that it is supposed to test. Item validity helps uphold the accuracy of research results by ensuring that is accurately measuring what it intends to measure. Everyone loves high item validity, as it makes the results of research more credible meaning that conclusions drawn from data at hand are most likely correct. Alternatively, when the validity of item is low this may result in meaningless or non -applicable findings to what you intend to be measured which compromise reliability and generalizability. The outcomes of the Webqual and EUCS validity tests are as follows:

Tabel 6. Webqual Validity Test Results

Code	R-count Performance	R-count Interest	R Table	Description
UQ 1	0.504	0.529	0.209	Valid
UQ 2	0.522	0.508	0.209	Valid
UQ 3	0.550	0.589	0.209	Valid
UQ 4	0.519	0.550	0.209	Valid
UQ 5	0.520	0.595	0.209	Valid
UQ 6	0.508	0.494	0.209	Valid
UQ 7	0.522	0.448	0.209	Valid
IQ 1	0.531	0.570	0.209	Valid
IQ 2	0.532	0.543	0.209	Valid
IQ 3	0.582	0.548	0.209	Valid
IQ 4	0.533	0.533	0.209	Valid
IQ 5	0.562	0.549	0.209	Valid
SIQ 1	0.557	0.552	0.209	Valid
SIQ 2	0.533	0.476	0.209	Valid
SIQ 3	0.533	0.506	0.209	Valid
SIQ 4	0.477	0.547	0.209	Valid
SIQ 5	0.517	0.460	0.209	Valid
SIQ 6	0.575	0.566	0.209	Valid
SIQ 7	0.528	0.545	0.209	Valid

Source: (Research Results, 2024)

In table 6 the results of testing the validity of Webqual state that as the  $r$ -total(count) number are higher more than the  $r$ -table, every of the statement code are legitimate.

Tabel 7. EUCS Validity Test Results

Code	R-Count	R-Table	Description
C 1	.556	.209	Valid
C 2	.574	.209	Valid
C 3	.546	.209	Valid
C 4	.559	.209	Valid
AC 1	.548	.209	Valid
AC 2	.554	.209	Valid
AC 3	.620	.209	Valid
F 1	.577	.209	Valid
F 2	.564	.209	Valid
F 3	.571	.209	Valid
EoU 1	.597	.209	Valid
EoU 2	.581	.209	Valid

Code	R-Count	R-Table	Description
EoU 3	.679	.209	Valid
T 1	.534	.209	Valid
T 2	.490	.209	Valid

Source: (Research Results, 2024)

Table 7 displays the findings from the evaluation of EUCS validity declare that since the r-total(count) number are higher more than the r-table, every of the statement code are legitimate. The validity test has been carried out, then testing the reliability of the respondent's answer to determine its consistency. Researchers set Cronbach's Alpha as the basis for determining whether it is reliable or not. A high Cronbach's Alpha value means that the items in the instrument are strongly related to each other, which implies they all measure consistently or almost same concept. On the other a low Cronbach's Alpha value will show that possibly the items do not relate to each, or it may as well indicate poor instrumentation design. The Webqual and EUCS reliability tests yielded the following findings:

Tabel 8. Performance Reliability Test Outcomes

Alpha Cronbach's	N Items
.859	19

Source: (Research Results, 2024)

Tabel 9. importance Reliability Test Outcomes

Alpha Cronbach's	N Items
.859	19

Source: (Research Results, 2024)

Tabel 10. EUCS Reliability Test Outcomes

Alpha Cronbach's	N Items
.850	15

Source: (Research Results, 2024)

In tables 8, 9, & 10 are the results of webqual & EUCS reliability test, within evident that Cronbach's Alpha score surpasses 0.80, indicating a level of reliability(Prasetya, Harjanto, & Setiyawan, 2020). Researchers concluded that the Webqual and EUCS reliability tests on all statement items were reliable.

## B. Webqual Index

Researchers use Microsoft Excel in grouping data so that it is easier to calculate respondent answer data. Researchers need to obtain the Means of Performance (MoP) and Means of Importance (MoI) values from each statement item and then using these two values, researchers can derive two more values, the Max Score and the Weighted Score, which together allow researchers to determine the final score, or WQI. The highest(max) score is obtained by multiplying the Mean of Interest (MoI) number by the largest Likert scale, which is 5.

Weighted Score is derived from (MoI) value multiplied by (MoP) value. These are the outcomes of applying the Webqual approach to data processing:

Tabel 11. Webqual Index Calculation Summary

Website	Variabel	Maximum Score	Weighted Score	WQI
SIOPE N	Usability	141.988	117.737	0.829
	Quality	6	7	2
	Information Quality	101.761	85.4053	0.839
	Service Interaction Quality	3	2	2
		141.25	117.024	0.828
		2	4	
	Total	385	320.167	0.831
			3	6

Source: (Research Results, 2024)

Based on table 11, the usability quality variable obtained a score of 0.8292, so this variable is included in the interval 0.80 - 1.00, namely with a very good interpretation. Furthermore, the information quality obtained a score of 0.8392 so that this variable was included in the interval 0.80 - 1.00, namely with a very good interpretation. and the service interaction quality variable obtained a score of 0.8284 so that this variable was included in the interval 0.80 - 1.00, namely with a very good interpretation. And finally the researchers totaled the maximum score and weighted score values and the WQI calculation resulted in a score of 0.8316 so that the overall quality of the SIOPE website is in the interval 0.80 - 1.00, namely with a very good interpretation. The interpretation that researchers use is based on references to articles that discuss this method as well(Syahputri et al., 2021). WQI scores are helpful indicators, which provide a tool to analyze the quality of websites and establish improvements that will influence both user side as well industry benchmarks. This assessment may (and should) also form the foundation for future growth that a website needs to continue in relevance and competition.

## C. EUCS

Researchers used a Likert scale based on the respondents' response choices and scores to assess the degree of satisfaction of SIOPE users based on characteristics already in place. Then to obtain The mean degree of user contentment, researchers used the Kaplan & Norton formula(Putera & Candiasa, 2021). The following are the results of calculating user satisfaction using EUCS:

Tabel 12. The Content variable's outcomes

Information	Statement				Σ
	C1	C2	C3	C4	
Very Satisfied	42	40	41	47	170
Satisfied	35	27	30	25	117

Information	Statement				Σ
	C1	C2	C3	C4	
Netral	10	20	13	14	57
Unsatisfied	1	1	3	2	7
Very Unsatisfied	0	0	1	0	1

Source: (Research Results, 2024)

$$RK = \frac{(5 \times 170) + (4 \times 117) + (3 \times 57) + (2 \times 7) + (1 \times 1)}{170 + 117 + 57 + 7 + 1}$$

$$RK = \frac{850 + 468 + 171 + 14 + 1}{352}$$

$$RK = \frac{1504}{352} = 4.27$$

In table 12, it is known that the acquisition of respondents' scores on the Content variable, then the calculation of the average user satisfaction with the Kaplan & Norton formula is obtained a score of 4.27. Based on the average satisfaction table by Kaplan & Norton, the level of the satisfied user to SIOPEN is within value range from 4.2 - 5, which is very satisfied.

Tabel 13. The Accuracy variable's outcomes

Information	Statement			Σ
	AC1	AC2	AC3	
Very Satisfied	37	33	40	110
Satisfied	33	30	29	92
Netral	15	21	19	55
Unsatisfied	3	4	0	7
Very Unsatisfied	0	0	0	0

Source: (Research Results, 2024)

$$RK = \frac{(5 \times 110) + (4 \times 92) + (3 \times 55) + (2 \times 7) + (1 \times 0)}{110 + 92 + 55 + 7 + 0}$$

$$RK = \frac{550 + 368 + 165 + 14 + 0}{264}$$

$$RK = \frac{1097}{264} = 4.15$$

In table 13, it is known that the acquisition of respondents scores on the variable above, then the calculation of the average user satisfaction with the Kaplan & Norton formula obtained a score of 4.15. Based on the average satisfaction table according to Kaplan & Norton, the level of the satisfied user to SIOPEN is within value range 3.4 - 4.19, which is satisfied.

Tabel 14. The Formats variable's outcomes

Information	Statement			Σ
	F1	F2	F3	
Very Satisfied	39	38	40	117
Satisfied	23	27	22	72
Netral	24	18	22	64
Unsatisfied	2	5	3	10

Information	Statement			Σ
	F1	F2	F3	
Very Unsatisfied	0	0	1	1

Source: (Research Results, 2024)

$$RK = \frac{(5 \times 117) + (4 \times 72) + (3 \times 64) + (2 \times 10) + (1 \times 1)}{117 + 72 + 64 + 10 + 1}$$

$$RK = \frac{585 + 288 + 192 + 20 + 1}{264}$$

$$RK = \frac{1086}{264} = 4.11$$

In table 14, it is known that the acquisition of respondents' scores on the Format variable, then the calculation of the average user satisfaction with the Kaplan & Norton formula obtained a score of 4.11. Based on the average satisfaction table according to Kaplan & Norton, the level of the satisfied user to SIOPEN is within value range 3.4 - 4.19, which is satisfied.

Tabel 15. The Easy of Use variable's outcomes

Information	Statement			Σ
	EoU1	EoU2	EoU3	
Very Satisfied	43	39	38	120
Satisfied	29	23	36	88
Netral	12	25	12	49
Unsatisfied	4	1	2	7
Very Unsatisfied	0	0	0	0

Source: (Research Results, 2024)

$$RK = \frac{(5 \times 120) + (4 \times 88) + (3 \times 49) + (2 \times 7) + (1 \times 0)}{120 + 88 + 49 + 7 + 0}$$

$$RK = \frac{600 + 352 + 147 + 14 + 0}{264}$$

$$RK = \frac{1504}{264} = 4.21$$

In table 15, it is known that the acquisition of respondents' scores on the Easy of Use variable, then the calculation of the average user satisfaction with the Kaplan & Norton formula obtained a score of 4.21. Based on the average satisfaction table according to Kaplan & Norton, the level of the satisfied user to SIOPEN is within value range of 4.2 - 5, which is very satisfied.

Tabel 16. The Timeliness variable's outcomes

Information	Statement		Σ
	T1	T2	
Very Satisfied	47	45	92
Satisfied	22	27	49
Netral	16	14	30
Unsatisfied	2	1	3
Very Unsatisfied	1	1	2

Source: (Research Results, 2024)

$$RK = \frac{(5 \times 92) + (4 \times 49) + (3 \times 30) + (2 \times 3) + (1 \times 2)}{92 + 49 + 30 + 3 + 2}$$

$$RK = \frac{460 + 196 + 90 + 6 + 2}{176}$$

$$RK = \frac{754}{176} = 4.28$$

In table 16, it is known that the acquisition of respondents scores on the variable above, then the calculation of the average user satisfaction with the Kaplan & Norton formula obtained a score of 4.28. Based on the average satisfaction table according to Kaplan & Norton, the level of the satisfied user to SIOPEN is within value range from 4.2 - 5, which is very satisfied. In a statistics view, here is the importance of difference EUCS variable on overall user satisfaction based on previous table. Similarly, if the "Ease of Use" and "Accuracy" are near 5.0 then this means that system is well-designed as it is dependable otherwise; scores in other sections like Format or Timeliness likely will be lower thereby requiring improvement. A thorough review of the lowest-scoring areas can help layout a road map for further enhancement that will have significant impacts on improving user satisfaction. To make it easier to explain in understanding the data for all variables, researchers made a summary table for the calculation of EUCS which can be seen in table 16 as follows:

Tabel 17. summary of EUCS calculation

Variable	Score Satisfaction	Description
Content	4.27	Very Satisfied
Accuracy	4.15	Satisfied
Format	4.11	Satisfied
Easy of Use	4.21	Very Satisfied
Timeliness	4.28	Very Satisfied

Source: (Research Results, 2024)

Based on table 17 of the SIOPEN user satisfaction analysis, it is known that the variables obtained satisfaction with the level of satisfied and very satisfied. Researchers also hope that SIOPEN developers can improve their website referring to the Format variable which has the lowest score.

#### D. Expert Recommendations

In making recommendations, the researcher involved an expert graphic designer with more than 5 years of experience in various aspects of design, including 3D design, social media, posters, banners, UI/UX, merchandise, booths, visual concepts for concerts, and other designs. This expert's work experience covers a variety of clients, ranging from large companies, students, educational institutions,

CSR companies, to corporations and currently works at Hulu Talent. For more clarity, the following table of recommendations suggested by expert:

Tabel 18. SIOPEN Recommendations

Method	Recommendations
Webqual	1. Improve SIOPEN features such as business owner testimonials so that new users can validate the SIOPEN website.
	2. Improve SIOPEN additional features such as customer service and frequently asked questions.
	3. Improvements to the product photos section, especially on the smartphone display because there are some missing /damaged photos
EUCS	1. Improve the clarity of SIOPEN as an e-procurement website in terms of color and appearance.
	2. Improvements and adjustments to the smartphone display on the carousel home section so that it is not truncated.
	3. Improve the selection of consistent and appropriate colors that will become a characteristic of SIOPEN itself.

Source: (Research Results, 2024)

## CONCLUSION

The analysis conducted on this study yielded the conclusion that SIOPEN using Webqual and EUCS methods resulted in a webqual index score, an average user satisfaction rating & the provision of suggestions to make improvements. Then the first webqual variable obtained an index of 0.8292, the second webqual variable obtained an index of 0.8392, and the third webqual variable obtained an index of 0.8284 so that all three obtained a very good interpretation. Three of the five EUCS variables obtained a very satisfied level, namely content at 4.27, easy of use at 4.21 and timeliness at 4.28. Then the other two obtained a satisfied level, namely accuracy at 4.15 and format at 4.11. Finally, recommendations for improvement based on experts can be a benchmark for future SIOPEN developers.

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