

User Satisfaction Analysis of E-Samsat SUMUT Application Using End User Computing Satisfaction (EUCS) Approach

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Abstract— Technological developments have continued to develop until now and the community has even made it a necessity, one of which is the motorized vehicle tax payment processing service, where payments can be made via e-banking or a predetermined Bank ATM. Because of this, users believe that there is little to no difference between traditional Samsat and E-Samsat, the user returns to the Samsat Office to obtain validation of vehicle registration certificates (STNK). User satisfaction is formulating user satisfaction and comparing expectations and reality as follows: if expectations < reality then very satisfied, if expectations = reality then satisfied and If expectations > reality then not satisfied. The purpose of this study is to find out what factors influence user satisfaction in the North Sumatra E-Samsat application and recommendations to application developers so that user satisfaction does not decrease. This study uses quantitative methodology. Quantitative is a research method in which data collection techniques are carried out through surveys and questionnaire instruments and data analysis is carried out statistically. This study will use the End User Computing Satisfaction method, the EUCS method was chosen because it has 5 variables of content, accuracy, format, ease of use, and timeliness to measure factors that influence user satisfaction from information systems. The results of the discussion from this study using the EUCS method each variable get a score of 4 (satisfied) out of 5 total scores. But it's not perfect yet, so some improvements are needed to further increase user satisfaction.

Keywords— E-Samsat, EUCS, User

I. INTRODUCTION

This Internet technology has provided many conveniences for its users to be able to communicate and find various information in cyberspace[1]. Technological developments continue to grow now, and people have even made it a means of necessity, one of which is the motor vehicle tax payment processing service, where payments can be made. through e-banking or ATM Bank that has been determined. However, it is still often found in the process of paying taxes for conventional services. Comparison of conventional services with E-Samsat services, namely the ease of electronic payments. Electronic payments are not found in conventional payment systems, where motor vehicle taxpayers still process payments from one counter to another until they are complete[2].

E-Samsat Sumut was created as an option and provides convenience for tax payments made in non-cash by utilizing banking channel facilities, reducing taxpayer complaints related to services, and reducing existing problems such as perceptions of complicated procedures, additional costs, namely purchasing stop map and photocopies, reducing brokering practices[3].

The EUCS (End User Computing Satisfaction) approach will be used in this study. The EUCS technique was chosen because it includes 5 variables for measuring elements that affect user satisfaction with information systems: content, accuracy, format, ease of use, and timeliness[4]. Due to the generality of the EUCS method and its applicability to diverse applications and system types, it is appropriate for gauging end user satisfaction with the North Sumatra E-Samsat application. The EUCS approach has also been extensively utilized in numerous studies to gauge how satisfied users are with information technology services[5].

Several previous studies using the End User Computing Satisfaction (EUCS) method had different results for each variable. In Ahmad Fitriansyah and Ibnu Harris's research the content and format variables had dissatisfactory results[1]. Nur Laeli Rachmawati and Dwi Krisbiantoro's research hypothesized that the format and timeliness were rejected or the users were not satisfied[6]. Research by Arif Saputra and Denny Kurniadi has results on all variables of satisfied users[4].

This study aimed to find out how satisfied customers were with the North Sumatra E-Samsat application system program for paying auto taxes. It is envisaged that public services will be more effective and efficient in this digital age. Similar benefits can be obtained for the state and its citizens by raising state revenue from the motor vehicle tax sector (E-SAMSAT). Therefore, it is crucial to look at the North Sumatra provincial tax and retribution administration agency's analysis of user satisfaction levels in the North Sumatra E-Samsat Application for paying motor vehicle taxes.

II. LITERATUR REVIEW

A. User Satisfaction

The definition of satisfaction is a ranking of the circumstances based on how customers feel after comparing the service they received to what they anticipated[7]. The

customer's reaction to the perceived appraisal of the disparity between original expectations prior to purchase (or other performance standards) and the actual performance of the product as perceived after using or consuming the product in issue is known as satisfaction. Therefore, a comparison of the service quality received and the quality expectations of customers can be used to determine user happiness[8].

User satisfaction formulates user satisfaction and compares expectations and reality as follows: if expectations < reality then very satisfied, if expectations = reality then satisfied and If expectations > reality then not satisfied[9].

B. End User Computing Satisfaction

The End User Computing Satisfaction (EUCS) method compares users' expectations with reality to determine how satisfied they are with an information system[10]. The overall assessment of the users of the information system based on their experiences using the system is the definition of end user computing satisfaction with an information system. Doll & Torkzadeh established the EUCS evaluation approach. By evaluating the system's content, correctness, format, timeliness, and usability, evaluation using this approach places an emphasis on how satisfied end users are with the technological components[11].

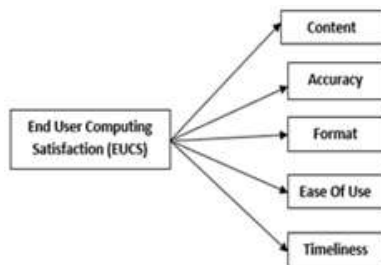


Fig 1. EUCS

1) Content

The content dimension gauges customer satisfaction with a system's contents. The system's content typically takes the form of information generated by the system as well as features and modules that users of the system can use. The content dimension gauges how well the system satisfies user demand for information. Users are more satisfied with a system when its modules and information are more comprehensive[12].

2) Accuracy

When a system gets input and converts it into information, accuracy gauges user satisfaction in terms of data correctness. The system's accuracy is determined by observing how frequently it generates incorrect output after processing user input, in addition to how frequently errors occur during data processing[13].

3) Format

The format measures user satisfaction in terms of the aesthetics and appearance of the system interface, the format of reports or information generated by the system,

whether the system's interface is appealing, and whether the system's appearance makes it easier for the user to use the system, which may have an indirect impact on the user's level of effectiveness[14].

4) Ease Of Use

In terms of user comfort or friendliness when using the system, such as the process of entering data, processing data, and locating the necessary information, ease of use gauges user satisfaction[15].

5) Timeliness

In terms of how quickly the system presents or provides the facts and information the user needs, timeliness gauges user satisfaction. A timely system falls under the category of a real-time system, which means that all user input and requests are handled instantly, and the results are shown without a lot of delay[16].

C. SPSS

Statistical Product and Service Solution (SPSS) is software for processing data that can read various kinds of data. SPSS is commonly used to carry out validity and reliability tests which are carried out by entering data directly into the application so that it can test large amounts of data[17].

III. RESEARCH METHOD

In this study using quantitative methodology. Quantitative is a research method in which data collection techniques are carried out through surveys and questionnaire instruments and data analysis is carried out statistically. The following are the stages of the research:

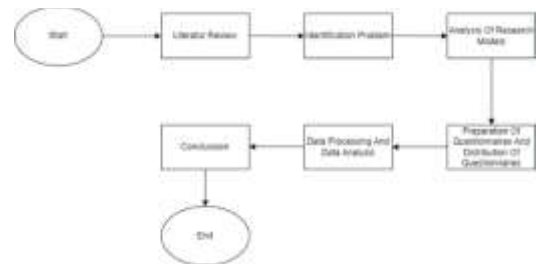


Fig 2. Flowchart of the research methodology

A Population And Sample

The sample is the characteristics and size of a particular population. The people of North Sumatra who have used the E-Samsat application are the research target population by distributing questionnaires online. Sampling was determined using the slovin formula due to the large population. The Slovin formula is as follows[18].

$$n = \frac{N}{1+Ne^2} \tag{1}$$

$$n = \frac{1000}{1+1000(0,05)^2} \tag{2}$$

$$n = 285 \text{ sample} \tag{3}$$

n is the sample, N is the population and e is the margin error.

Based on the results of the calculations used to determine the number of samples above, 285 respondents is the minimum number of samples used. More respondents may answer altogether than the minimum required.

B. End User Computing Satisfaction Questionnaire

End user computing satisfaction is a method used to collect data to observe user satisfaction using 5 variables[19]. The following are the questions used in this study:

TABLE 1. EUCS Questionnaire

Variabel	Question Items
Content	The North Sumatra E-Samsat application provides the right information according to your needs
	Does the content and information generated by the North Sumatra E-Samsat application help you in solving problems
Accuracy	The North Sumatra E-Samsat application rarely has an error when you use it
	The information generated by the North Sumatra E-Samsat application is very accurate
	The output results from the North Sumatra E-Samsat application are by what you ordered/input
	The North Sumatra E-Samsat application produces information that is reliable, trustworthy, precise, and correct
Format	The North Sumatra E-Samsat application has an orderly menu structure
	The color composition in the North Sumatra E-Samat application is very good so it doesn't tire the eyes and isn't boring
	The interface of the E-Samsat application is easy, so it makes you use it faster
	The North Sumatra E-Samsat information system displays very good information.
Ease Of Use	The North Sumatra E-Samsat application is easy to get tax payment information
	Online payments using the North Sumatra E-Samsat application are easy for me
	It is very easy for me to become skilled in using the E-Samsat application in making tax payments.
	The North Sumatra E-Samsat application provides clear instructions for its use
Timeliness	The North Sumatra E-Samsat application provides the information you need in a timely manner
	The North Sumatra E-Samsat application provides up-to-date data

	The North Sumatra E-Samsat application provides timely alerts/reminders to system users as notifications/warnings
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C. User Satisfaction Testing Instrument

Customer responses good and negligible the performance as it stands in comparison to their expectations are referred to as customer satisfaction[20]. In general, service quality and performance will be attained if the service provider's performance and quality fulfill expectations. The following is a survey created by researchers to gauge customer happiness[21].

TABLE 2. User Satisfaction Testing Instrument

Variabel	VD	NS	QS	S	VS
Content	1	2	3	4	5
Accuracy	1	2	3	4	5
Format	1	2	3	4	5
Ease Of Use	1	2	3	4	5
Timeliness	1	2	3	4	5

IV. RESEARCH AND DISSCUSSION

The results of the research are based on a logical sequence of a story. The content shows facts/data. Can use tables and numbers but not repeat the same data in pictures, tables, and text. Subtitles can be used to further clarify the description.

Discussion is the basic explanation, relationship, and generalization demonstrated by the results. The description answers a research question. If there are dubious results, point them out objectively.

A. Validation Test

The validity test conducted on the questionnaire in this study is deemed valid if $r\text{-count} > r\text{-table}$ for $N = 317$ with a significant level of 5% and an $r\text{-table}$ of 0.113 is obtained. The results of the validity test of the study's questions, which were computed using the Statistical Program Of Social Science (SPSS) Software[22], are listed below.

TABLE 3. Validation Test

Variabel	Code	R-count	R-table	Description
Content	1	0,656	0.113	Valid
	2	0,684	0.113	Valid
	1	0,677	0.113	Valid

Accuracy	2	0,744	0.113	Valid
	3	0,755	0.113	Valid
	4	0,737	0.113	Valid
Format	1	0,671	0.113	Valid
	2	0,711	0.113	Valid
	3	0,713	0.113	Valid
EaseOf Use	1	0,738	0.113	Valid
	2	0,706	0.113	Valid
	3	0,716	0.113	Valid
Timelines	1	0,691	0.113	Valid
	2	0,717	0.113	Valid
	3	0,728	0.113	Valid

Based on the results of the validity test conducted in this study, each question on the form was considered valid because the r-count value exceeded the r-table value, so the questionnaire was declared valid.

B. Reability Test

The reliability test for this study used the Cronbach Alpha technique[23]. The questionnaire is regarded as reliable if r-count > r-table for N = 317, the significance level is 5%, and r-table is 0.113. The Software Statistical Program of Social Science was used to produce the questionnaire reliability test results for this study, and the results are listed below.

TABLE 4. Reability Test

Variabel	Cronbach Alpha	R-Tabel	Description
Content	0.938	0.113	Reliabel
Accuracy	0.936	0.113	Reliabel
Format	0.937	0.113	Reliabel
Ease Of Use	0.937	0.113	Reliabel
Timeliness	0.937	0.113	Reliabel

The user satisfaction questionnaire has a Cronbach Alpha coefficient value of 0.936-0.938 which shows higher than the r-table of 0.113 according to the reliability test that has been carried out. It is clear from the reliability test findings that the research questionnaire is reliable and suitable for use in

legitimate research.

C. Variabel Content

Based on the results of processing data sourced from the questionnaire, the results for the content variable can be seen in the table below:

TABLE 5. Varaibel Content

No	Response	Skala	Frekuensi	Persentation
1	very dissatisfied	1	4	0,6%
2	not satisfied	2	15	2,35%
3	quite satisfied	3	132	20,85%
4	Satisfied	4	341	53,8%
5	very satisfied	5	142	22,4%

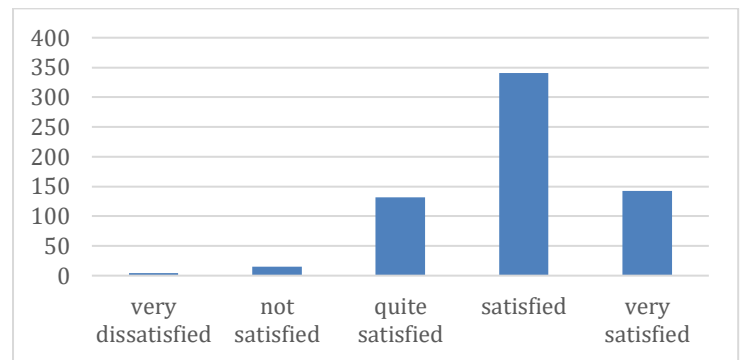


Figure 2. Varaibel Content

D. Variabel Accuracy

Based on the results of processing data sourced from the questionnaire, the results for the accuracy variable can be seen in the table below:

TABLE 6. Variabel Accuracy

No	Response	Skala	Frekuensi	Persentation
1	very dissatisfied	1	6	0,45%
2	not satisfied	2	49	3,85%
3	quite satisfied	3	277	21,82%
4	Satisfied	4	602	47,4%
5	very satisfied	5	334	26,3%

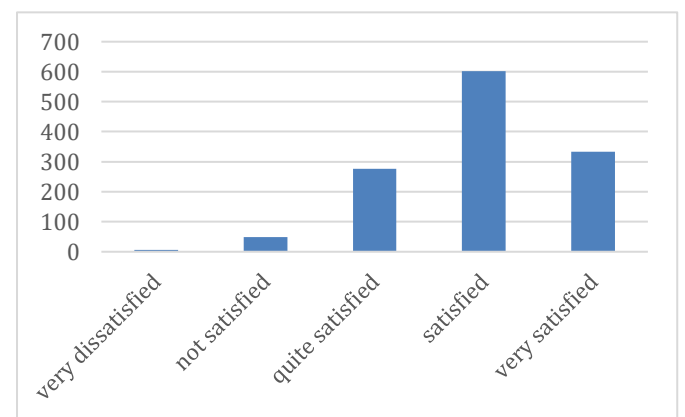


Fig 3. Variabel Accuracy

E. Variabel Format

Based on the results of processing data sourced from the questionnaire, the results for the format variable can be seen in the table below:

TABLE 7. Variabel Format

No	Response	Skala	Frekuensi	Persentase
1	very dissatisfied	1	9	0,7%
2	not satisfied	2	90	7,07%
3	quite satisfied	3	298	23,6%
4	Satisfied	4	551	43,4%
5	very satisfied	5	320	25,2%

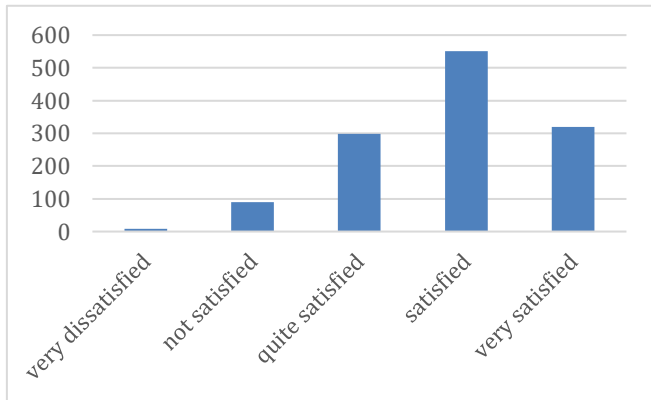


Fig 4. Variabel Format

F. Variabel Ease Of Use

Based on the results of processing data sourced from the questionnaire, the results for the ease of use variable can be seen in the table below:

TABLE 8. Variabel Ease Of Use

No	Response	Skala	Frekuensi	Persentase
1	very dissatisfied	1	7	0,5%
2	not satisfied	2	34	2,6%
3	quite satisfied	3	203	16%
4	Satisfied	4	660	52%
5	very satisfied	5	364	28%

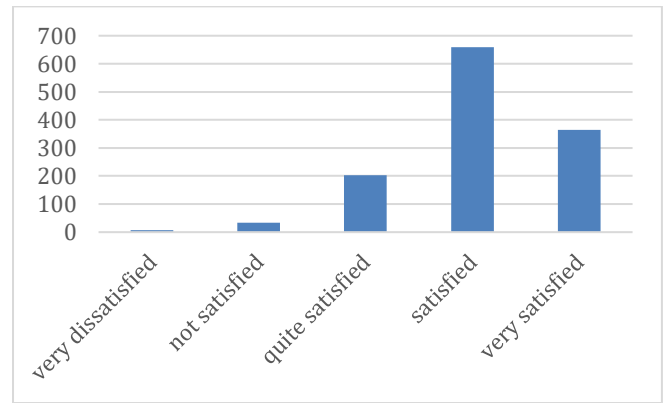


Fig 5. Variabel Ease Of Use

G. Variabel Timeliness

Based on the results of processing data sourced from the questionnaire, the results for the timeliness variable can be seen in the table below:

TABLE 9. Variabel Timeliness

No	Response	Skala	Frekuensi	Persentase
1	very dissatisfied	1	7	0,7%
2	not satisfied	2	29	3,06%
3	quite satisfied	3	151	47,4%
4	Satisfied	4	294	50,9%
5	very satisfied	5	280	29,4%

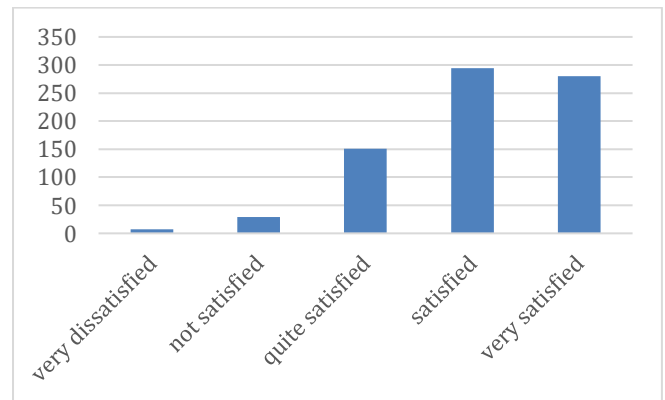


Fig 6. Variabel Timeliness

H. Discussion

As a whole, it can be seen from the calculation results of the questionnaire variable content, accuracy, format, ease of use, timeliness can be seen in the following table:

TABLE 10. Discussion

No	Variabel	Result
1	Content	4 (satisfied)
2	Accuracy	4 (satisfied)
3	Format	4 (satisfied)

4	Ease Of Use	4 (satisfied)
5	Timeliness	4 (satisfied)

The North Sumatra E-Samsat application employs each variable according to the End User Computing Satisfaction approach, as shown in the table above. namely; the average value of the variable content is 4 and it is stated that the respondents were satisfied because the respondents' answers stated that the content and information provided by the North Sumatra E-Samsat application were per the needs and helped in solving problems. The accuracy variable gets a value of 4 and is declared satisfied because based on the respondents' answers that the output results from the application are following what was ordered. In the format variable, an average value of 4 is stated as satisfied because based on the respondents' answers, the color composition and interface display of the North Sumatra E-Samsat application are very good. Getting a result of 4 for the ease of use variable is deemed satisfactory since users believe the application to be very user-friendly. Since respondents believe that the program rapidly provided the requested information or data, the timeliness variable receives a satisfaction score of 4.

TABLE 11. Comparative Analysis

Variabel	Research conducted	Previous Research
Content	As many as 53.8% of users are satisfied with the content displayed on the application	In Ahmad Fitriansyah and Ibnu Haris's research, the content variable obtained dissatisfied results[1]
Accuracy	As many as 47.45 users are satisfied with the accuracy variable.	In the research by Shibghotur Ayu Robbaniyah and Aries Dwi Indriyanti, the accuracy variable obtained very satisfactory results with a total of 83.3%[11]
Format	As many as 43.4% of users are satisfied with the variable format.	In Rahayu Agustina and Leon Andretti Abdillah's research, the format variable hypothesis was rejected and did not affect user satisfaction[24]
Ease Of Use	A total of 52% users were satisfied with the ease of use variable	In Yanuar Nurdiansyah's research, Eka Putri Agustini and Diah Ayu Retnan Wulandari the ease of use variable

		yielded 75.8% of users feeling very satisfied[9]
Timeliness	As many as 50.9 users are satisfied with the timeliness variable.	In Kintan Ayu and Shinta Oktaviani's research, the timeliness variable obtained an average result of 70% of users feeling satisfied[25]

Several previous studies used the end user computing satisfaction (EUCS) method, where users were dissatisfied with some of the variables used, while in this study users were satisfied with all the variables used.

V. CONCLUSION AND RECOMMENDATION

A. Conclusion

Based on the findings of the analysis of user satisfaction in the North Sumatra E-Samsat application with a total of 317 respondents who filled out the End User Computing Satisfaction (EUCS) questionnaire. All variables in the End User Computing Satisfaction method get a calculated value of 4 out of a total value of 5. However, it is not perfect so improvements must be made

B. Recommendation

1) Advice For Application Developers

based on the results of the research, there are suggestions that I can give recommendations for increasing user satisfaction and the quality of the North Sumatra E-Samsat application. The North Sumatra E-Samsat application does not yet have an orderly menu structure, color composition that is still not very good, and changes to the interface.

2) Suggestions For Further Research

For further research application assessment with a different method. Other questions that are used so that more accurate measurement results of user satisfaction are obtained.

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