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MEASURING THE QUALITY OF DISTRICT GOVERNMENT WEBSITES ONLY USING THE MCCALL AND EUCS METHOD (END USER COMPUTING SATISFACTION)

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Abstract: Technological developments are currently increasing rapidly, especially in the innovation of information data management. With so many media providing informationand services online, as well as the services provided by the Government of Sekadau Regency in the form of Webstie sekadaukab.go.id. Based on the survey results, the problems experienced by users are output and performance from sekadaukab.go.id still does not meet user expectations. Study this aims to measure the quality of information systems sekadaukab.go.id and also measure the level of user satisfaction with sekadaukab.go.id. By using the method McCall and EUCS (End User Computing Satisfaction) and using methods IPA (Importance Performance Analysis) to map variables into the level of importance and level of performance, the variables used are the variables in the method EUCS (End User Computing Satisfaction). Questionnaires were distributed to 100 users sekadaukab.go.id. The average quality generated by the method McCall of 43.6%, included in the pretty good category. For the results of measuring user satisfaction methods EUCS (End User Computing Satisfaction), each variable is included in the doubtful category range value 2.60 – 3.39. There are 18 recommendations for improvement based on the method McCall and the IPA method to the Kominfo Sekadau Regency against sekadaukab.go.id.

Keywords: EUCS; IPA; McCall; public service; quality system

Abstrak: Perkembangan teknologi saat ini semakin pesat, khususnya pada inovasi pengelolaan data informasi. Dengan banyaknya media menyediakan informasi dan pelayanan secara online, begitu juga dengan pelayanan yang disediakan oleh Pemerintah Kabupaten Sekadau berupa Webstie sekadaukab.go.id. Berdasarkan hasil survey, permasalahan yang dialami oleh pengguna yaitu output dan kinerja dari sekadaukab.go.id masih belum memenuhi harapan pengguna. Penelitian ini bertujuan untuk mengukur kualitas dari sistem informasi sekadaukab.go.id dan juga mengukur tingkat kepuasan pengguna terhadap sekadaukab.go.id. Dengan menggunakan metode McCall dan EUCS (End User Computing Satisfaction) serta menggunakan metode IPA (Importance Performance Analysis) untuk memetakan variabel kedalam tingkat kepentingan dan tingkat kinerja, variabel yang digunakan yaitu variabel pada metode EUCS (End User Computing Satisfaction). Kuesioner dibagikan kepada 100 orang pengguna sekadaukab.go.id. Rata- rata kualitas yang dihasilkan berdasarkan metode McCall sebesar 43,6%, masuk kedalam kategori cukup baik. Untuk hasil pengukuran kepuasan pengguna metode EUCS (End User Computing Satisfaction), masing-masing variabel masuk kedalam kategori ragu- ragu dengan range nilai 2.60 – 3.39. Terdapat 18 rekomendasi perbaikan berdasarkan pada metode McCall dan metode IPA kepada pihak Kominfo Kabupaten Sekadau terhadap sekadaukab.go.id.

Kata kunci: EUCS; IPA; kualitas sistem; MCCALL; pelayanan publik

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INTRODUCTION

The development of science and technology is currently increasingly rapid, especially in information data management innovations that have been implemented by the central government to regional governments, making it easier to provide services to the community in order to create community welfare. Public services are essentially a fulfillment of basic needs rights from the state to its people [1]. Sekadau Regency is a district that has implemented Electronic Based Government (SPBE) services using data technology, which now provides all forms of services automatically without being done manually so it does not require a lot of time. SPBE makes it easier for people to access and browse public information and services online without being limited by physical and geographical barriers that might prevent them from getting access to the public services they need [2].

The problems that occur based on the survey results are that the appearance of the website does not meet what users expect, the content presented cannot meet what users expect, the information provided also does not meet user expectations in terms of consistency, and some of the features provided also still experience errors. when it will be accessed. Therefore, changes are needed in accordance with user expectations so that the information presented can meet user needs. On this basis, it is necessary to measure the quality of the Website so that it can be used as material for making improvements. To measure the quality of software, you can use certain methods. To measure the quality of Website sekadaukab.go.id, the methods used are the McCall method and the EUCS (End User Computing Satisfaction) method. The McCall model is a method that describes software quality factors [3]. The EUCS (End User Computing Satisfaction) method is a method that measures application system user satisfaction by comparing the expectations and reality of the information system [4]. EUCS has five variables to measure the level of satisfaction for users, namely content, accuracy, format, ease of use, and timeliness [5]. To measure which service attributes need to be improved, a measurement method is needed, one of which is applying the IPA (Importance Performance Analysis) method [6].

Similar research regarding measuring the quality of the Sidokerto Village Information System website using the McCall Model shows that the quality of the website reached an average value of 4.5, which indicates very good criteria [5]. To ensure the feasibility and improve the quality of the Sidokerto Village Information System website, research was carried out using the McCall method using the Euclidean Distance method. [7]. Research [8] used a combination of Webqual 4.0 and EUCS methods with the results of the Usability and Format variables being significant, simultaneous and also partial with the most dominant variable being the Format variable. To determine the level of user satisfaction on the AL-FAJAR Vocational School website [9] conducted research using the Webqual 4.0 and EUCS models with results showing that the quality of service interactions, time and usability did not have a significant influence on user satisfaction. This research aims to measure the level of quality of the Sekadau Regency Government Website, namely sekadaukab.go.id and to measure the level of user satisfaction with the services

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provided by sekadaukab.go.id and to map what factors influence affects the level of user satisfaction.

METHOD

This research uses design science [10] to understand, carry out, evaluate research with a conceptual framework that is short, concise and clear. Design science, also known as the Hevner framework, is a framework that is often used in conducting IS (Information System) research. In this framework there are three important components including Environment, IS Research, and Knowledge Base.

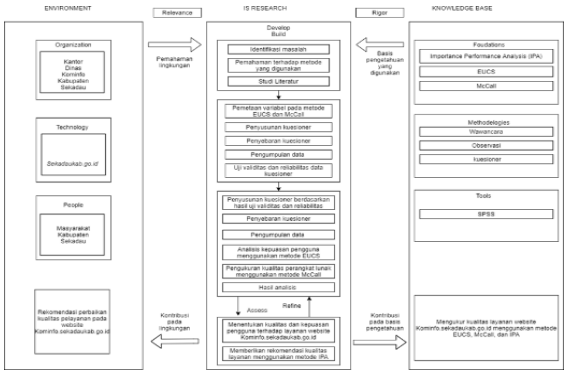

Figure 1. Design Science

The process and flow of this research starts from:

1. Identify problems with the sekadaukab.go.id website
2. Study literature to obtain reference used
3. Mapping variables using the reliability method
4. Preparation of questionnaires resulting from validity and reliability tests and distribution of questionnaires again
5. Collect data after that calculate and recapitulate the average value of quality measurement results sekadaukab.go.id
6. Conclusion and provide recommendations for improvement in the form of suggestions to related parties to carry out improvements and maintain the system.

The method that will be applied in this research is the McCall method which is used to measure the level of quality of information systems. The method is used to measure and assess the quality of an information system by paying attention to correctness, efficiency, reliability, integrity and usability. To measure the quality of information systems using the McCall method, the formula in equation (1) follows:

$$Fa = w1c1 + w2cw2 + wncn \quad (1)$$

Fa = Quality factor
wn = Weight of each n-th quality factor
cn = Criterion value of the nth quality factor To determine the weight w of each criteria using $(0 \leq w \leq 0{,}4)$,
Where:
0,1 = Very Unimportant
0,2 = Not Important
0,3 = Important
0,4 = Very Important

Convert the quality factor value

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from decimal to percentage using equation (2):

$$Percentage = \frac{Nilai\ Value\ obtained}{Maximum\ Value} \times 100\% \quad (2)$$

To get the total quality value, use equation (3):

$$\sum = \frac{(0{,}3 \times f_{a_1}) + (0{,}3 \times f_{a_2}) + (0{,}3 \times f_{a_3}) + (0{,}3 \times f_{a_4})}{Maximum\ Value} \times 100\% \quad (3)$$

EUCS is a method used to measure the quality of satisfaction from the user's perspective of an information system, through a comparison between user expectations and reality [11]. Assessment of information systems using this model will refer to user satisfaction regarding all aspects of technology, by measuring the accuracy, format, content, ease and time of use of the system. To determine the level of user satisfaction using a Likert scale to determine the average of user satisfaction regarding the system used with the equation formula (4):

$$RK = \frac{JSK}{JK} \quad (4)$$

Where:
RK = Average level of satisfaction
JSK = Total questionnaire score
JK = Number of questionnaires

To measure the level of importance and level of performance of an information system based on the user's point of view using the IPA (Importance Performance Analysis) method (Immanuel & Setiawan, 2020). To measure the level of importance and level of performance, use the formulas in equations (5) and (6):

$$x' = \sum \frac{x'}{N} \quad (5)$$

Where:
x' = Average perception value (Performance)
N = Number of Respondents

$$y' = \sum \frac{y'}{N} \quad (6)$$

Where:
y' = Average Expectation Value (Importance)
N = Number of Respondents

RESULTS AND DISCUSSION

Respondent Characteristics

Figure 2. Website display sekadaukab.go.id

Respondents in this research were sekadaukab.go.id users, namely the people of Sekadau Regency, the respondent category consists of civil servants (28.4%), students (27.5%), private employees (16.7%), ordinary people (12.7%), honorary workers (5.9%) , Students (6.9%), Contract Workers (1%), and Entrepreneurs (1%). Based on the results of mapping the characteristics of respondents, those who dominate are civil servants, while the fewest respondents are entrepreneurs and contract workers.

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Data Analysis Results Using the McCall Method

By determining the average value of each criterion, indicator, and also the weight where each value given depends on the level of importance it has. The results of the software quality assessment obtained from 102 respondents can be seen in Table 1. After calculating the value of each criterion and also determining the weight, the total value of each Fa will then be determined based on the quality of the factors in the McCall method. The following are the results of calculating the total values of Fa1, Fa2, Fa3 and Fa4 using equations 1, 2 and 3.

The calculation for the correctness indicator is as follows:

Completeness
= (w1c1 + w2c2)
= (0,4 x 2,99) + (0,3 x 2,99)
= 1.2 + 0,9 = 2,1
Consistency
= (w3c3)
= (0,4 x 3,01)
= 1.2
Traceability
= (w4c4)
= (0,3 x 3,02)
= 0,9

To get the Fa1 value, the solution is to use the method below:

$$fa1 = \frac{completeness + consistency + tracebility}{3}$$
$$= \frac{2.1+1.2+0.9}{3}$$

The Fa1 value will be changed to a percentage using the method below:

$$Percentage = \frac{Nilai\ Value\ obtained}{Maximum\ Value} \times 100\%$$

$$= \frac{1.4}{5} \times 100\% = 28$$

The calculation for the Reliability indicator:

Accuracy
1= (w1c1)
= (0,4 x 3,08) = 1,2
Simplicity
= (w2c2 + w3c3)
= (0,3 x 3,01) + (0,3 x 3,01)
= 0,9 + 0,9 = 1,8
= 1,8
Error Tolerance
= (w4c4) = (0,3 x 2,89) = 0,9

To get the Fa2 value, the solution is to use the method below:

$$fa2 = \frac{accuracy + simplicity + error\ tolerance}{3}$$
$$= \frac{1.2+1.8+0.9}{3} = \frac{3.9}{3} = 1.3$$

The Fa2 value will be changed into percentages using the method below:

$$Percentage = \frac{Nilai\ Value\ obtained}{Maximum\ Value} \times 100\%$$

The calculation for the Efficiency indicator:

= (w1c1)
= (0,4 x 2,83)
= 1,1

To get the Fa3 value, the solution is to use the method below:

$$fa3 = \frac{efficiency}{1}$$
$$= \frac{1.1}{1} = 1.1$$

The Fa3 value will be changed into percentages using the method below:

$$Percentage = \frac{Nilai\ Value\ obtained}{Maximum\ Value} \times 100\%$$
$$= \frac{1.1}{5} \times 100\% = 22\%$$

The calculation for the Usability indicator:

Communicativeness
= (w1c1)
= (0,4 x 3,00) = 1,2
Operablity

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= (w2c2 + w3c3 + w4c4 + w5c5)
= (0,4 x 3,02) + (0,3 x 2,95) + (0,2 x 3,05) + (0,4 x 2,98)
= 1,2 + 0,9 + 0,6 + 1,2 = 3,9
Training
= (w1c1 + w2c2 + w3c3)
= (0,3 x 2,93) + (0,4 x 3,11) + (0,2 x 2,98)
= 0,9 + 1,2 + 0,6 = 2,7

To get the Fa4 value, the solution is to use the method below:

$$fa1 = \frac{communicativeness + operability + training}{3}$$

$$= \frac{1.2+3.9+2.7}{3} = \frac{7.8}{3} = 2.6$$

The Fa4 value will be changed into percentages using the method below:

Table 1. Software Quality

		Indicator Value	
		Weight	Criterion Value
Correctness	Completeness	0.4	2.99
		0.3	2.99
	Consistency	0.4	3.01
	Tracebility	0.3	3.02
Reliability	Accuracy	0.4	3.08
	Simplicity	0.3	3.01
		0.3	3.01
	Error Tolerance	0.3	2.89
Efficiency	Execution Efficiency	0.4	2.83
Usability	Communicativeness	0.4	3
	Operability	0.4	3.02
		0.3	2.95
		0.2	3.05
		0.4	2.98
	Training	0.3	2.93
		0.4	3.11
		0.2	2.98

$$Percentage = \frac{Nilai\ Value\ obtained}{Maximum\ Value} \times 100\%$$

$$= \frac{2.6}{5} \times 100\% = 52\%$$

Sekadaukab.go.id still has to make improvements to several quality factors, including the correctness, relia bility and efficiency quality factors. Meanwhile, the Usability quality factor got a total result of 52%, which means that the quality factor falls into the quite good category if used. To calculate total quality using equation 3, it is obtained as below:

$$\sum = \frac{(0,3 \times f_{a_1}) + (0,3 \times f_{a_2}) + (0,3 \times f_{a_3}) + (0,4 \times f_{a_4})}{Maxiumum\ Value} \times 100\%$$

$$\sum = \frac{(0,3 \times 1,4) + (0,3 \times 1,3) + (0,3 \times 1,1) + (0,4 \times 2,6)}{5} \times 100\%$$

$$\sum = \frac{0,42 + 0,39 + 0,33 + 1,04}{5} \times 100\%$$

$$\sum^{5} = \frac{2,18}{5} \times 100\% = 43,6\ \%$$

Sekadaukab.go.id was included in the quite good category but there were still things that needed to be improved based on the results of the calculation of the quality factors.

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Data Analysis Results Using the EUCS (End User Computing Satisfaction) Method

The results of the RK calculation on the accuracy variable obtained a score of 3.00. In the format variable, a score of 3.06 was obtained. The ease of use variable obtained a score of 3.02, while the timeliness variable obtained a score of 3.05.

Science Diagram Mapping (Importance Performance Analysis)

Mapping the questions related to user satisfaction using the IPA method by making a Cartesian diagram. These question items use the EUCS variable because it is related to user satisfaction. The results of the answers to the distribution of the questionnaire are divided into two, namely the level of performance and the level of importance. The following is an image of a Cartesian diagram which can be seen in Figure 2.

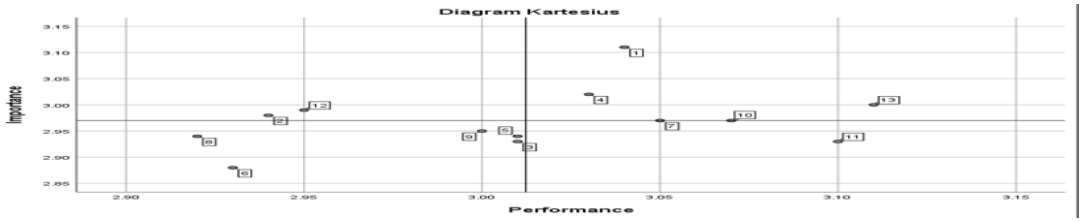

Figure 3. Cartesian diagram

CONCLUSION

This research was conducted to measure the quality of the sekadaukab.go.id software. The McCall method is very good for measuring quality a software in detail. Meanwhile, the EUCS method itself focuses on user satisfaction with an information system. By measuring software quality and measuring the level of user satisfaction at sekadaukab.go.id. The recommendations for improving the Sekadau district government website include: Optimize the available features and the information delivery format should not be dominated by images; Improve the menu function so that it functions properly and add help features; Optimize the input and output functions and UI/UX, and completeness of information related to public services; Added system usage documentation so that new users are not confused by the available menus.

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