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Analysis of The Level of Satisfaction of Researchers and Devotioners with The Performance

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Abstract

The development of information systems and technology has certainly changed people's behavior in carrying out their activities which were initially carried out manually and can now be carried out digitally so that they are more effective and efficient. The Service Research Information System (SIPP) is a transformation carried out to digitize research and service services within the Semarang State University (UNNES). As a service provider, to find out whether the UNNES Service Research Information System (SIPP) is running as it should, an evaluation process is needed on the performance of the information system. In carrying out information system analysis and evaluation activities, the PIECES Framework analysis model is used. PIECES framework is a framework that has six categories for classification and problem solving, namely Performance, Information and Data, Economics, Control and Security, Efficiency, and Service. The use of the PIECES framework method is very suitable for analyzing each system variable studied because it can provide real results on the effectiveness of the system used by UNNES. The aim of this research is to measure the level of satisfaction, find out strengths and weaknesses, analyze what components need to be improved in the quality of service at SIPP.

Keywords: SIPP Unnes, PIECES, User Satisfaction, Information Systems

INTRODUCTION

Development system information and technology very fast in support activity society in the digital era . Technology has help man in various field, for example in field research and service to public. Research and Community Service Institute to the Community (LPPM) Semarang State University (UNNES) in his role realize not quite enough Tri Dharma College answered, yes change the procedures evaluation instruments that were originally manual became more Lots effective and efficient through application called SIPP (System Information Study Devotion) that can accessible to all lecturers, staff education and UNNES students . Stages research and service carried out manually like announcement information opening research and service, proposal registration, proposal evaluation, instruments, reports progress and end research is a must skipped manually with bring printed equipment to evaluators and LPPM, now has changed the procedure become more effective and efficient with use the application website at the address sipp.unnes.ac.id.

In reality, the digitalization of Tri Dharma has not fully facilitated the work of researchers and servants. This can be seen from the percentage of researchers and staff who are still late in collecting research documents and have difficulty using the features in the information system. To find out whether the UNNES Service Research Information System (SIPP) is running as it should, an evaluation process is needed on the performance of the information system. Evaluation is a planned activity to assess a problem that occurs using instruments and the results can be compared with benchmarks to obtain conclusions so that solutions are found to resolve problems that arise. Meanwhile, information system evaluation can be carried out in different ways and at different levels, depending on the purpose of the evaluation. The aim is to measure the level of satisfaction, find out strengths and weaknesses, analyze what components need to be improved in the quality of service in the system.

User satisfaction is a summary of the psychological condition that results when the emotions surrounding expectations are not matched by the feelings formed regarding the usage experience [12]. User satisfaction means meeting the needs and expectations of users during the service period. The

SIPP satisfaction level analysis focuses on how to identify weaknesses found in the service system.

In carrying out information system analysis and evaluation activities, there are several analytical methods or models that can be used, one of which is the PIECES Framework analysis model. For make it easier evaluation, offered method analysis with the PIECES framework that outlines to in 6 focuses analysis weakness that is *performance, information and data, economy, control and security, efficiency, and service* . The results of the PIECES analysis are document weakness system that became recommendation For necessary improvements created on the system to be developed more carry on For repair from system previously [1] [2].

Based on background behind problem that, then formulation problem in study This is as following: What is the level of satisfaction of researchers and staff regarding the SIPP application currently being used?; What are the obstacles that hinder researchers and service providers in accessing the SIPP application to support research and service performance? What is the strategy to improve SIPP services?

METHOD

Types of research

The research method used is quantitative descriptive research which aims to describe, summarize, various conditions, various situations or variables that arise in society which is the object of research, in this case the research object taken is the UNNES Community Service Research Information System.

a. Stages Study

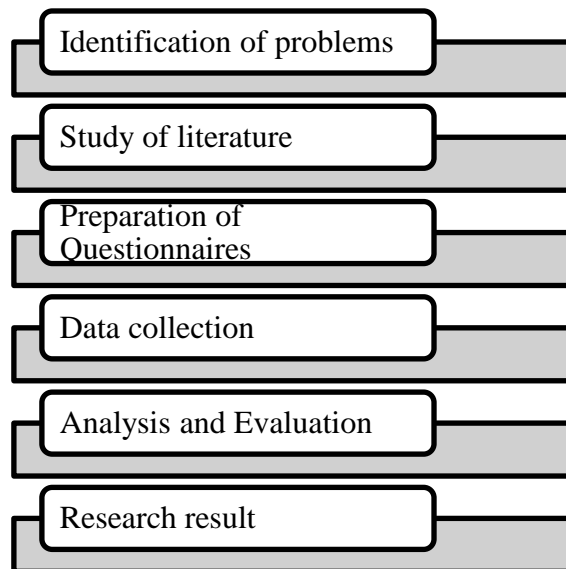


Figure 1. Research Flow

Based on Figure 1, stages or flow carried out in the research This is as following ;

1. *Identification Problem* :

The initial stage of research is identifying problems in order to find out the problems that will be analyzed. This research was appointed because the author felt it was necessary to improve SIPP's performance in providing information regarding research and service considering the large number of researchers and service providers who were late in collecting research equipment. The author also wants to know the extent of user satisfaction while using SIPP.

2. *Study of literature* :

Knowledge that becomes base in study This obtained from various source like journal national nor international , accessing the public web, and research previous .

3. *Drafting Questionnaire* :

Instrument in study This use method nature questionnaire _ closed (close-ended question) so the results achieved from method questionnaire This can complex and accurate . Questionnaire This consists from a number of statement that will be an internal variable study . Variable the namely performance, data information , *economics, control and security, efficiency, and service* . Retrieval technique sample used is *purposive sampling* , namely technique sample determination with consideration certain . Every the subject taken from population chosen with on purpose based on consideration certain . The number of lecturers, staff and students at UNNES in 2022 will be 49,292 people. The number of researchers and service providers managed by LPPM in 2022 will be 510. The sample taken in this research was 100 people selected from lecturers, education staff and students who received research. The measurement scale used in this research is the Likert scale.

4. *Data collection* :

Research data collection done For confirm the data you have is valid and reliable . Primary data comes from from distribution questionnaire to There are 100 UNNES researchers and servants who have attended carry out research in 2022 or _ previously . Secondary data originate from studies literature .

5. *Analysis and Evaluation* :

Analysis of the data obtained from respondents who have the average is calculated . With use the average satisfaction formula is determined level his satisfaction based on six aspects that the PIECES Framework has .

6. *Research result* :

After done data analysis using PIECES method then will withdrawn conclusions and suggestions will be next with evaluation to SIPP, components Which PIECES components are necessary repaired .

b. *PIECES Framework*

In the PIECES framework there are six components that can used in evaluation satisfaction user system information :

1. *Performance (Reliability)*

Reliability something system is role important For see how much reliable something system information in processing or processing data for results information and expected goals . _ Components that are used as references or guidelines in evaluating the performance of a system are:

- a. *Throughput*: Total output range or output produced by the system .
- b. *Response time*: Fast , slow time required _ system at the moment processing order .
- c. *Audibility* : Suitable or not performance system with standard or provisions that have been set .
- d. *Prevalence Communication* : Difficult or not user in understand *interfaces* or interface provided by the system .
- e. *Completeness*: Whether or not the system is complete in carrying out work functions.
- f. *Consistency*: Whether or not the system is aligned in the use of design and document documentation techniques.
- g. *Fault tolerance*: The amount of error a system makes.

2. *Information and Data (Information and Data)*

Information and data presented or required by the provider service is one of factor important For progress . Analysis This used For know how much many and clear information that will generated For One search . Components to pay attention to blessed information and data are :

- a. *Accuracy*: Check whether or not the computing process on the system is accurate.
- b. *Information Relevance*: Whether or not the user needs the information produced.
- c. *Information Presentation*: Whether or not the user needs the information display.
- d. *Flexibility* : Easy how difficult it is accessing the data used .

3. *Economics (Economic Value)*

Analysis This done For know is system implemented in this institution _ _ appropriate from facet finances and costs incurred . _ Things to pay attention to from facet economy that is ;

- a. *Reusability* , a lot few programs can used return to another application .
- b. *Benefits* , namely evaluation is in use system capable give profit for internal institutions going to more direction _ Good .

4. *Control and security* (Security and Control)

In management system need guarded with contor or system monitoring _ walk with Good .
Necessary components _ noticed is ;

- a. Integrity : Limitation of rights access against operators for certain programs .
- b. Security: Security of data residing in the system.

5. *Efficiency* _ _ _

System information must Can in a way efficient answer and help something problem specifically in matter automation . Analysis This done For know is something system That efficient or No with little input capable produce satisfactory output .

Things that must be done noticed is ;

- a. Usability: User effort when learning and operating the system (Ease of operation)
- b. Maintainability: User efforts to overcome errors in the system (system repair)

6. *Service* (Service)

Service to user very important , in research this is what is intended as user is researchers and servants user system information research and service . The progress of the Institution is determined from this variable , whether the users the interested and satisfied with services provided by the Institution. A number of thing being assessed important in service that is :

- a. Accuracy, the correctness of the performance carried out by the system.
- b. Reliability , performance system can trusted or No in accordance with what you want .
7. Simplicity, the user's understanding of the level of ease of the system.

RESULTS AND DISCUSSION

Satisfaction users on the SIPP system are analyzed with PIECES method . Use System Information Study UNNES Community Service (SIPP) in monitoring and evaluation facilities activity research and service to public is one strategy and commitment of LPPM UNNES in continuity strengthening research and service to public . Therefore _ That needed development and adaptation system in a way sustainable so that capable overcome problem problems that occur in use system . In carrying out acceleration as well as efficiency stage research , SIPP UNNES plays a role important in stages evaluation of possible proposals evaluated by direct reviewers through system from the previous one done with method researcher collect instrument proposals two copies _ to LPPM, then LPPM does it plotting evaluator for activity evaluation instrument , after it's a proposal and an instrument distributed to each evaluator. Efficiency the held start 2016 LPPM with use application web- based sipp.unnes.ac.id.

A. Determination Topic

SIPP application indeed become part from digitalization of Tri Dharma. Many conveniences are available This offered , start from the proposal upload process , stages study until upload output and reports study . Use system information need nature of regulation and management special and called as system information management . PIECES Framework is A method used _ For classify problems , their classification shared six category that is *Performance, Information, Economics, Control , Efficiency, and Service* in research This writer limit problem problem which covers services on the application Myindihome to use by customers so that produce measurement satisfaction against service app with PIECES *framework* . As for research This aim For describe the level of satisfaction of researchers and service providers regarding the SIPP application currently being used, the obstacles that hinder researchers and service providers in using the SIPP system, and developing strategies or recommendations to improve SIPP services.

B. General Description of Respondents

The following is a general description of the 120 questionnaires distributed to 120 respondents which were created using *Google Form* to all researchers and service providers at Semarang State University, especially to researchers and service providers whose research or service was funded in 2021 and 2022.

C. Data Analysis Based on the PIECES *Framework*

Based on the results of distributing the questionnaire which was carried out in accordance with the data collection method applied, it was then processed by analyzing the data using the PIECES Framework method by calculating a total of 6 variables. The following are the results of calculating each variable from the PIECES framework.

1. Performance

The following in Table 1 are : results from spread questionnaire to respondents based on indicator *performance*.

No	Question	Respondent				
		SS	S	RR	T.S	STS
1	application is very easy accessed by users	90	30			
2	SIPP application can operate a number order in relatively short time , without experience obstacle .	70	40	10		
3	Appearance facility his physique in accordance with type services provided . _	50	70			
4	When _ SIPP application is used in a way Simultaneously , performance application still walk stable .	30	70	20		
5	Although user has n't been for a long time use SIPP application , will easy For use it Again .	70	50			
Amount		310	260	30		

Table 1

$$RK = \frac{(310 \cdot 5) + (260 \cdot 4) + (30 \cdot 3) + (0 \cdot 2) + (0 \cdot 1)}{310 + 260 + 30 + 0 + 0}$$

$$RK = \frac{2,680}{600}$$

$$= 4.47$$

Based on results calculation of average satisfaction customers in the Performance variable are obtained results end 4.47. If value end customized with characteristics PIECES assessment has a score of 4.47 is categorized as SATISFIED. Can We conclude that quality services on variable performance provide results satisfied , and shows indication positive that SIPP applications play a role good on quality services in the field of performance implemented by the SIPP application .

2. Information and data

Below in Table 2 are : results from spread questionnaire to respondents based on indicator *Information and data*.

No	Question	Respondent				
		SS	S	RR	T.S	STS
1	The data stored by the SIPP application is already stored in accordance with what is entered to in system .	90	30			
2	SIPP application used produce proper report _ as required . _	70	50			
3	SIPP application used capable produce information available _ understood in a way clear .	50	70			
4	information format produced by the SIPP application is useful and accessible used as should be by the user .	70	50			
5	Containing data error or data that is not Correct No can saved by the SIPP Application .	40	40	30	10	
6	The SIPP application does not can store data that is not should .	50	30	40		
Amount		370	270	70	10	

Table 2

$$RK = \frac{(370 \cdot 5) + (270 \cdot 4) + (70 \cdot 3) + (10 \cdot 2) + (0 \cdot 1)}{370 + 270 + 70 + 10 + 0}$$

$$RK = \frac{3,160}{720}$$

$$= 4.39$$

Based on results calculation of average satisfaction customers in the Information variable are obtained results end 4.39. If value final average satisfaction customized with characteristics PIECES assessment then a value of 4.39 is categorized as SATISFIED. Can concluded that quality services on variable information provide results satisfied .

3. Economics

Below in Table 3 are : results from spread questionnaire to respondents based on indicator *Economics*.

No	Question	Respondent				
		SS	S	RR	T.S	STS
1	Cost incurred _ become more light with exists SIPP applications compared SIPP compared with use method conventional .	55	65			
2	Care and development SIPP application requires sufficient cost _ tall .	35	70	15		
Amount		90	135	15		

Table 3

$$RK = (90 * 5) + (135 * 4) + (15 * 3) + (10 * 2) + (0 * 1)$$

$$90 + 135 + 15 + 10 + 0$$

$$RK = 1.035$$

$$240$$

$$= 4.31$$

Based on results calculation of average satisfaction the use of SIPP on the Economics variable was obtained results end 4.31. If value final average satisfaction researchers and servants customized with characteristics PIECES assessment then a value of 4.31 is categorized as SATISFIED.

4. *Control and Security*

The following in Table 4 is results from spread questionnaire to respondents based on indicator *Control and Security*

No	Question	Respondent				
		SS	S	RR	T.S	STS
1	System security for the SIPP application is in place Good	40	80			
2	The error (error) that occurred easy corrected and identified in application the .	50	70			
3	Management in give authorization to use and operation system Already clear	70	40	10		
4	System used _ more lighten up user Good from facet cost and time	90	20	10		
Amount		250	210	20		

Table 4

$$RK = (250 * 5) + (210 * 4) + (20 * 3) + (0 * 2) + (0 * 1)$$

$$250 + 210 + 20 + 0 + 0$$

$$RK = 2.150$$

$$480$$

$$= 4.48$$

Based on results calculation of average satisfaction researchers and servants on the Control and Security variables were obtained results end 4.48. If value final average satisfaction customer customized with characteristics PIECES assessment then a value of 4.48 is categorized as SATISFIED. From the results This can We conclude that use or usage SIPP application is spelled out easy .

5. *efficiency*

Below in Table 5 are : results from spread questionnaire to respondents based on indicator *efficiency*.

No	Question	Respondent				
		SS	S	RR	T.S	STS
1	SIPP application can give required information _ appropriate time .	80	40			
2	Applications used _ more lighten up from facet cost and time .	70	50			
3	SIPP application used _ capable produce nature information _ latest / up to date.	80	40			
Amount		230	130			

Table 5

$$RK = (230 * 5) + (130 * 4) + (40 * 3) + (0 * 2) + (0 * 1)$$

$$230 + 130 + 0 + 0 + 0$$

$$RK = 1.670$$

$$360$$

= 4.69

Based on results calculation of average satisfaction Researchers and Servants on the Efficiency variable were obtained results final 4.69 If value final average satisfaction customer customized with characteristics PIECES assessment then a value of 4.69 is categorized as SATISFIED. From the results This can We conclude that quality services on variable Efficiency provide results satisfied to researchers and servants . In the Efficiency variable the SIPP UNNES application plays a role Enough Good to quality service LPPM UNNES research and service .

6. Service

Below in Table 6 are : results from spread questionnaire to respondents based on indicator Services .

No	Question	Respondent				
		SS	S	RR	T.S	STS
1	Available facility For correcting data (help function) in the SIPP application .	10	80	20	10	
2	Easy SIPP application learned by beginners .	60	50	10		
3	SIPP application used produce proper report _ in accordance need .	50	70			
4	SIPP application can give satisfaction as users who need it information	50	70			
Amount		170	270	30	10	

Table 6

$$\begin{aligned}
 RK &= \frac{(170 \cdot 5) + (270 \cdot 4) + (30 \cdot 3) + (10 \cdot 2) + (0 \cdot 1)}{170 + 270 + 30 + 10 + 0} \\
 RK &= \frac{2040}{480} \\
 &= 4.25
 \end{aligned}$$

Based on results calculation of average satisfaction researchers and devotees on the Service variable were obtained results end 4.25. If value final average satisfaction customer customized with characteristics PIECES assessment then a score of 4.25 is categorized as SATISFIED. This result shows the service variable on quality service assessed satisfied by researchers and servants .

D. Analysis Results PIECES Framework Method Satisfaction

Based on results all over recapitulation PIECES variables above , all the variables it consists of from Performance, Information, Economics, Control and Security, Efficiency and Service all are in the category Satisfied , that is SIPP applications play a role Good in increase quality service so that provide a sense of satisfaction and response positive to researchers and servants .

Table 6 Recapitulation Whole PIECES Variables

Variable	Average satisfaction	Category
Performance	4.47	Satisfied
Information and data	4.39	Satisfied
Enomics	4.31	Satisfied
Control and Security	4.48	Satisfied
efficiency	4.69	Satisfied
Service	4.25	Satisfied

Based on Table 9, it is obtained average value ie scale 4.43 then can said that user service The SIPP UNNES application is categorized as being carried out using the PIECES Framework Method. Study has produce evaluation researchers and servants to system SIPP information . In research This measurement done with use framework PIECES Framework work produces an average score of 4.43 with scale likert . Then user service categorized as Satisfied to service UNNES SIPP system .

CONCLUSION

Based on results calculations and data analysis can be done concluded that calculations and data analysis using PIECES Framework method considered very effective Because analyze system

pervariable so that system can evaluated more in . Result of data analysis shows that all PIECES variables get category satisfied so that Can said that The SIPP UNNES application plays a role with Good in increase quality service and deliver satisfactory result _ to researchers and servants.

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