Evaluation of Electronic Based Government System using Statistical Product and Service Solutions (SPSS)

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***Abstract*— SPBE is an information technology used by the government which is expected to improve government performance and meet people's expectations of government. This study uses primary data types by collecting data through online questionnaires using google form facilities. The results of this study found that the average quality of trust in SPBE services was 88.33 with a standard deviation of 12.25, so this indicates that the quality of trust in SPBE services, especially the Magetan Regency Government, is in good classification.**

Keywords*— *SPBE, electronics, primary data, standard deviation

I. INTRODUCTION

In general, the use of ICT in supporting public services in local governments has been supported by the central government through national policies and strategies for the development of e-Government [1]. Likewise, through the Minister of State Apparatus Empowerment and Bureaucratic Reform Regulation No. 5 2018 concerning Guidelines for Evaluation of Electronic-Based Government Systems (SPBE), in order to improve the quality of government administration that utilizes information and communication technology effectively, efficiently, and sustainably, it is necessary to evaluate the implementation of the Electronic-Based Government System [2]. The issuance of Presidential Decree No. 05/2018 also marks the realization of bureaucratic reform in the era of the Joko Widodo-Jusuf Kalla administration. Because SPBE or commonly called e-Government is an effort to cut costs and time, as well as minimize the possibility of corrupt practices in services provided by the Government [3].

The application of SPBE is not only about the government using computers and then automating old governance practices. With the SPBE, it is hoped that it will create reforms in the administration of government. The reform of government administration is through the use of information and communication technology so as to minimize the budget spent and make public services more high-performing, effective, and efficient by integrating existing systems in ministries/agencies, central government, and local governments [4]. The government bureaucracy cannot be said to innovate if there is no use of technology. Improvement of public services can be done through SPBE. SPBE is an information technology used by the government which is expected to improve government performance and meet public expectations of the government [5].

Building relationships and trust in the community is very important for public agencies/government institutions. With a good relationship between the community and the agency, of course, the community will have more trust so carrying out the service process at the agency is indeed the right choice. This is why public trust is a critical study that is important to study so that the public can increase their trust in the agency and how the agency can increase public trust in its organization. Public trust is an important variable for the realization of good governance [6]. In addition, the main background in this research is that public trust has a negative tendency. What causes people to have such a tendency, the most important factor is the service provided by the government. Poor service is the reason why people have bad trust in the government.

A previous study "Satisfaction of Online E-Government Services at the Ministry of Religion of Indonesia" concluded that the level of user satisfaction on system performance factors and service impact factors perceived by users are two important factors that have a positive and significant impact on satisfaction with online e-government services as a whole. Overall [7] The satisfaction with their experience while interacting with the online e-government service system application has little and no significant effect on their level of satisfaction with the e-government online service as a whole.

Furthermore, research conducted by Aritonang [8]. with the book "The Impact of E-Government System on Public Service Quality in Indonesia" that E-government in Indonesia cannot be implemented without the support of the overall bureaucratic reform program. Many elements must support the improvement of governance management from conventional to modern (with a technological approach). Improving the quality of public service delivery is not only by implementing an e-government system but also by applying the concept of ex-public service so that provision is better. Another research conducted by Agung Purwanto the results of the study contributed the model to the 8 dimensions of trust in e-Government and its relation to intention to use e-Government through mediation trust in e-Government [9].

In addition, the research carried out by Istyanto is about the Evaluation of Public Service Strategies Preferred by the Surabaya Community: Traditional Vs E-Government (Case Study: E-Lampid, E-Health & Ssw)" with the conclusion that many people, especially Surabaya, still intend to switch using e-government-based public services [10]. However, there are also people in Surabaya who intend to continue to

choose to use traditional public services, and also the motivation of public service users who switch to an e-government system is significantly influenced by factors of efficiency, service response, facilitating conditions, and trust. Meanwhile, the motivation of public service users who continue to choose the traditional system is significantly influenced by factors of suitability, convenience, quality of information, and trust.

Based on the description above as well as the research background and literature review, the researchers tried to conduct this research to present the results of the evaluation data on public trust as the impact of SPBE services by using research shells. It is hoped that with this research we will know the public's trust in using SPBE services.

II. METHODS

In this section, the research steps are described as shown in Figure 1.

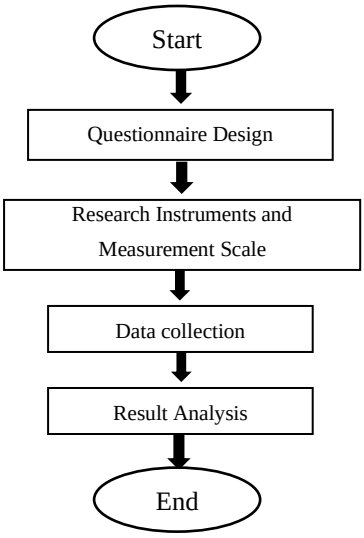

Fig.1. Research process diagram

A. Questionnaire Design

The preparation of the questionnaire aims to translate the researcher's information needs into a set of specific questions that respondents are willing and able to answer, then the written questionnaire is able to motivate respondents to get involved and work together, and finally, the questionnaire that is made must be able to minimize incorrect answers [11].

The number of respondents obtained as many as 81 people consisting of people aged less than 20 years, ages 20-30 years, 30-40 years, 40-50 years, and ages 50 years and over. This limited number of respondents is due to the impact of the Covid-19 outbreak which was so devastating that it almost stopped all activities, both work and the provision of public services, thus affecting the number of respondents, only a few people were willing to fill out this questionnaire [12]. The questionnaire link is shared on WhatsApp whose number has been obtained from several sources.

TABLE I. QUESTIONS

Variable	Question
Procedures and Fees	Believe that the current online government service procedures are clearer and easier to understand than conventional/before online services
	Believe that the fees/tariffs in online government services are in accordance with the provisions or even free
	Believe that there is clarity Among procedure and cost in management service
Time	Believe that the implementation of government services online provides more flexible time (can list when just) than service conventional
	Believe that online government services can save time (can register anywhere) compared toconventional.
Service	Believe that l service government by on line no cause queue
	Believe that l service government by on line always transparent in implementation
	Believe that l service government by on line comfortable and easy used
	Believe that Service government by on line giveservicethat makes it easier Public
	Believe that online government services will not act detrimental to the community
	Believe that lservice government by on line provide plot information which easy to follow because the information which provided sequentially and systematic
	Believing that online government services provide additional sources of information related to needsuser
	Believe that l service government by on line already in accordance with which expected
	I trust and easily use government services online for my service needs other
Resource	Trust that the officer/operator guard/picket in the place service does a good job of helping the community which difficulty access/registration inuseservice
	Believe that the officer Act honestly when do transaction with Public
	Believing that officers /operators provide service politely andfriendly
Resource	Believe that Handling Complaint Use Service government by online is faster to respond and follow up than conventional
Facilities and infrastructure	Believe that the quality of online government service infrastructure applications and networks is smooth and easy to use
	Believe that Infrastructure service government by on line could work with good
	Believe that link or address website service government easy accessed

B. Research Instruments and Measurement Scale

To obtain data from observations on each variable, this study used a research instrument in the form of a questionnaire. Questionnaires are prepared based on indicators of predetermined variables. The indicator variables in this study were measured using a Likert scale. The Likert scale according to is used to measure a person's attitudes, opinions, and perceptions about social phenomena that have been specifically defined by researchers as research variables [13]. The variables that have been translated into indicators are then made up of question/statement items that provide five alternative answers, namely strongly agree (SS), agree (S), uncertain (R), disagree (TS), strongly disagree (STS). These five answer choices will produce scores with an ordinal scale.

C. Data collection

Data collection techniques are the methods used to collect data and other information in the research conducted [14]. In collecting research data, researchers collect various data as well as from various sources related to research. Researchers collected data by distributing questionnaires using a differential semantic scale. The Semantic Differential (SD) technique is a method formulated by Osgood, they are very interested in semantic space and have the idea to study words as a scale [15]. Differential semantic is used to measure attitudes, only in the form of not multiple-choice or checklist, but arranged in a continuum line where the "very positive" answer is located on the right side of the line, and the "very negative" answer is located on the left side of the line, or vice versa [16]. The data obtained is interval data, and usually, this scale is used to measure certain attitudes/characteristics possessed by a person.

D. Result Analysis

To obtain data from observations on each variable, this study used a research instrument in the form of a questionnaire. Questionnaires are prepared based on indicators of predetermined variables. The indicator variables in this study were measured using a Likert scale. The Likert scale is used to measure a person's attitudes, opinions, and perceptions about social phenomena that have been specifically defined by researchers as research variables [17]. The variables that have been translated into indicators are then made up of question/statement items that provide five alternative answers, namely strongly agree (SS), agree (S), uncertain (R), disagree (TS), strongly disagree (STS). These five answer choices will produce scores with an ordinal scale. Data analysis using software (Statistical Product and Service Solutions (SPSS). SPSS is a Windows based program that can be used to perform data entry and analysis and to create tables and graphs [18].

III. Results and Discussion

A. Survey Result

The number of respondents obtained as many as 81 people consisting of people aged less than 20 years, ages 20-30 years, 30-40 years, 40-50 years, and ages 50 years and over. This limited number of respondents is due to the impact of the Covid-19 outbreak which was so devastating that it almost stopped all activities, both work and the provision of public services, thus affecting the number of respondents, only a few people were willing to fill out this questionnaire. The questionnaire link is shared on WhatsApp whose number has been obtained from several sources.

From the questionnaires distributed and also from the experience of using government services online (e-government). From the information obtained, it is explained that respondents use government services online to find information, the information sought by respondents is information such as population information, auction information, information on government vision and mission, educational information. Some of the SPBE services accessed by respondents are as follows: dishub.magetan.go.id, mpp.magetan.go.id, dispenduk.magetan.go.id, magetan.go.id, health services.magetan.go.id, kominfo.magetan.go.id

B. Research Instrument Test

a. Instrument Validity Test

The instrument was validated by correlating each item score with the total score using the Pearson Correlation (Product Moment) technique [19]. The Product Moment Test is one type of correlation test used to determine the degree of closeness of the relationship between 2 variables on an interval or ratio scale; this test will return the correlation coefficient value ranging between -1, 0, and 1. A value of -1 means a perfect negative correlation, 0 no correlation, and 1 a perfect positive correlation. Therefore, the value closer to 1 or -1 means a closer relationship while the value closer to 0 means a weaker relationship. The criterion of the Pearson Correlation test is, if r (correlation coefficient) $\geqslant$ rtable (correlation table), the questionnaire item is valid or can measure the variable, so it can be used as a data collection tool. The summary of the validation results is as follows.

TABLE II. INSTRUMENT VALIDITY TEST

Variable	Dimension	Items	Correlation coefficient	Description
SPBE quality	Procedures and Fees	**X1.1**	0.872	Valid
		X1.2	0855	Valid
		X1.3	0.872	Valid
	Time	**X2.1**	0.952	Valid
		X2.2	0.963	Valid
	Service	**X3.1**	0.816	Valid
		X3.2	0.775	Valid
		X3.3	0.871	Valid
		X3.4	0.855	Valid
		X3.5	0.729	Valid
		X3.6	0.820	Valid
		X3.7	0.755	Valid
		X3.8	0.538	Valid
		X3.9	0.827	Valid
	Sumber Daya	**X4.1**	0.926	Valid
		X4.2	0.888	Valid
		X4.3	0.908	Valid
		X4.4	0.820	Valid
	Facilities and infrastructure	**X5.1**	0.834	Valid
		X5.2	0.887	Valid
		X5.3	0.886	Valid
		X5.4	0.886	Valid

Based on the summary of the results of the validity test, the dimensions of cost and procedure, time, service, human resource, and facilities and infrastructure that measure SPBE quality variables are valid or can measure the dimensions that exist in these variables.

b. Instrument Reliability Test

The reliability test of the SPBE quality is to determine the reliability and consistency of the research instrument as a tool to measure the measured variable. This test was performed using Cronbach's Alpha technique [20]. The test criterion is, if Cronbach's Alpha coefficient is 0.6, the questionnaire item is reliable or consistent in measuring the variable. The summary of the reliability test results is as follows.

TABLE III. INSTRUMENT RELIABILITY TEST

Variable	Dimensions	Cronbach's Alpha	Remark
SPBE Quality	Cost and Procedure	0,831	Reliable
	Time	0,907	Reliable
	Service	0,918	Reliable
	Human Resource	0,901	Reliable
	Facilities and Infrastructure	0,896	Reliable

The results of the reliability test showed that items measuring all the dimensions obtained Cronbach's Alpha values of > 0.6. Thus, the questionnaire items are reliable or consistent.

c. Evaluation of SPBE Quality Variable

The evaluation of the SPBE quality variable is described in the following frequency distribution and explanation.

1) Evaluation of Cost and Procedure Dimension

The evaluation of the cost and procedure dimension is shown in the following table.

TABLE IV. EVALUATION OF COST AND PROCEDURE DIMENSION

No.	Score Range	Frequency	Percentage	Category
1	$3 < X \leq 5.4$	1	1.2%	Very Poor
2	$5.4 < X \leq 7.8$	0	0.0%	Poor
3	$7.8 < X \leq 10.2$	12	14.8%	Quite Good
4	$10.2 < X \leq 12.6$	35	43.2%	Normal
5	$12.6 < X \leq 15.0$	33	40.7%	Very Good
Total		**81**	**100.0%**	
Standard Deviation				2.09
Mean				12.20
Category				Normal

The table shows that the mean score of the cost and procedure dimension according to the respondents is 12.20 with a standard deviation of 2.09. This shows that this dimension is in good classification. The cost and procedure dimension of SPBE services is classified as quite good at the interval $7.8 < X \leqslant 10.2$ as many as 12 (14.8%) respondents, very poor at $3.0 < X \leqslant 5.4$ as many as 1 (1.2%) respondent, poor at $5.4 < X \leqslant 7.8$ as many as 0 (0.0%) respondents, good at $10.2 < X \leqslant 12.6$ as many as 35 (43.2%) respondents, and very good at $12.6 < X \leqslant 15.0$ as many as 33 (40.7%) respondents.

2) Evaluation of Time Dimension

The evaluation of the time dimension can be seen in the following table.

TABLE V. EVALUATION OF TIME DIMENSION

No.	Score Range	Frequency	Percentage	Category
1	$2.0 < X \leq 3.6$	0	0.0%	Very Poor
2	$3.6 < X \leq 5.2$	3	3.7%	Poor
3	$5.2 < X \leq 6.8$	4	4.9%	Quite Good
4	$6.8 < X \leq 8.4$	29	35.8%	Normal
5	$8.4 < X \leq 10.0$	45	55.6%	Very Good
Total		**81**	**100.0%**	
Standard Deviation				1.43
Mean				8.70
Category				Very Good

The table shows that the mean score of the time dimension according to the respondents is 8.70 with a standard deviation of 1.43. This shows that the time dimension is in very good classification. The time dimension of SPBE services is classified as quite good at the interval $5.2 < X \leqslant 6.8$ as many as 4 (4.9%) respondents, very poor at $2.0 < X \leqslant 3.6$ as many as 0 (0.0%) respondent, poor at $3.6 < X \leqslant 5.2$ as many as 3 (3.7%) respondents, good at $6.8 < X \leqslant 8.4$ as many as 29 (35.8%) respondents, and very good at $8.4 < X \leqslant 10.0$ as many as 45 (55.6%) respondents.

3) *Evaluation* of Service Dimension

The evaluation of the service dimension can be seen in the following table.

TABLE VI. EVALUATION OF SERVICE DIMENSION

No.	Score Range	Frequency	Percentage	Category
1	$9.0 < X \leq 16.2$	0	0.0%	Very Poor
2	$16.2 < X \leq 23.4$	2	2.5%	Poor
3	$23.4 < X \leq 30.6$	6	7.4%	Quite Good
4	$30.6 < X \leq 37.8$	41	50.6%	Normal
5	$37.8 < X \leq 45.0$	32	39.5%	Very Good
Total		**81**	**100.0%**	
Standard Deviation				5.05
Mean				36.48
Category				Normal

The table shows that the mean score of the service dimension according to the respondents is 36.48 with a standard deviation of 5.05. This shows that the service dimension is in good classification. The service dimension of SPBE services is classified as quite good at the interval 23.4 < X ⩽ 30.6 as many as 6 (7.4%) respondents, very poor at 9.0 < X ⩽ 16.2 as many as 0 (0.0%) respondents, poor at 16.2 < X ⩽ 23.4 as many as 2 (2.5%) respondents, good at 30.6 < X ⩽ 37.8 as many as 41 (50.6%) respondents, and very good at 37.8 < X ⩽ 45.0 as many as 32 (39.5%) respondents.

4) Evaluation of Human Resource Dimension

The evaluation of the human resource dimension can be seen in the following table.

TABLE VII. EVALUATION OF RESOURCE DIMENSION

No.	Score Range	Frequency	Percentage	Category
1	4.0 < X ≤ 7.2	1	1.2%	Very Poor
2	7.2 < X ≤ 10.4	1	1.2%	Poor
3	10.4 < X ≤ 13.6	15	18.5%	Quite Good
4	13.6 < X ≤ 16.8	46	56.8%	Normal
5	16.8 < X ≤ 20.0	18	22.2%	Very Good
Total		**81**	**100.0%**	
Standard Deviation				2.45
Mean				15.31
Category				Normal

The table shows that the mean score of the human resource dimension according to the respondents is 15.31 with a standard deviation of 2.45. This shows that the human resource dimension is in good classification. The human resource dimension of SPBE services is classified as quite good at the interval 10.4 < X ⩽ 13.6 as many as 15 (18.5%) respondents, very poor at 4.0 < X ⩽ 7.2 as many as 1 (1.2%) respondent, poor at 7.2 < X ⩽ 10.4 as many as 1 (1.2%) respondent, good at 13.6 < X ⩽ 16.8 as many as 46 (56.8%) respondents, and very good at 16.8 < X ⩽ 20.0 as many as 18 (22.2%) respondents.

5) Evaluation of Facilities and Infrastructure Dimension

The evaluation of the facilities and infrastructure dimension is shown in the following table.

The table shows that the mean score of the facilities and infrastructure dimension according to the respondents is 15.64 with a standard deviation of 2.59. This shows that this dimension is in good classification. The facilities and infrastructure dimension of SPBE services is classified as quite good at the interval 10.4 < X ⩽ 13.6 as many as 8 (9.9%) respondents, very poor at 4.0 < X ⩽ 7.2 as many as 1 (1.2%) respondent, poor at 7.2 < X ⩽ 10.4 as many as 2 (2.5%) respondents, good at 13.6 < X ⩽ 16.8 as many as 48 (59.3%) respondents, and very good at 16.8 < X ⩽ 20.0 as many as 22 (27.2%) respondents.

TABLE VIII. EVALUATION OF FACILITIES AND INFRASTRUCTURE DIMENSION

No.	Score Range	Frequency	Percentage	Category
1	4.0 < X ≤ 7.2	1	1.2%	Very Poor
2	7.2 < X ≤ 10.4	2	2.5%	Poor
3	10.4 < X ≤ 13.6	8	9.9%	Quite Good
4	13.6 < X ≤ 16.8	48	59.3%	Normal
5	16.8 < X ≤ 20.0	22	27.2%	Very Good
Total		**81**	**100.0%**	
Standard Deviation				2.59
Mean				15.64
Category				Normal

6) *Evaluation* of SPBE Service Trust Quality Variables

Evaluation of SPBE service trust quality variables can be seen in the following table:

TABLE IX. EVALUATION OF SPBE SERVICE TRUST QUALITY VARIABLES

No	Score Range	Frequency	Percentage	Category
1	22.0 < X 39.6	0	0.0%	Very bad
2	39.6 < X 57.2	3	3.7%	Bad
3	57.2 < X 74.8	5	6.2%	Pretty good
4	74.8 < X 92.4	43	53.1%	Good
5	92.4 < X 110.0	30	37.0%	Very good
Amount		**81**	**100.0%**	
Standard Deviation				12.25
Average				88.33
Category				Good

The table above shows that the mean score of the SPBE service trust quality according to the respondents is 88.33 with a standard deviation of 12.25. This implies that the quality of SPBE services trust is good. The SPBE service trust quality variable is classified as quite good at the interval 57.2 < X ⩽ 74.8 as many as 5 (6.2%) respondents, very poor at 22.0 < X ⩽ 39.6 as many as 0 (0.0%) respondents, poor at 39.6 < X ⩽ 57.2 as many as 3 (3.7%) respondents, good at 74.8 < X ⩽ 92.4 as many as 43 (53.1%) respondents, and very good at 92.4 < X ⩽ 110.0 as many as 30 (37.0%) respondents

IV. CONCLUSION

Based on the results of the description of the results of the analysis and discussion in the previous chapter, the following conclusions are obtained:

1. From the research conducted, several dimensions have been obtained which include the dimensions of trust in SPBE services, those dimensions are the dimensions of procedures and costs, the dimensions of time, the dimensions

of service, the dimensions of resources, and the dimensions of facilities and infrastructure.

2. Public trust in SPBE services has an effect on using services in the future which is due to the belief from the community that SPBE services will take an action according to their needs and desires.

3. From the analysis above, it is found that the average quality of SPBE services trust according to the respondents is 88.33 and the standard deviation is 12.25. So, this shows that the quality of SPBE services trust, especially the Magetan Regency Government, is in good classification.

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