Quality Analysis the E-PASTI System to Determine the Condition of the System and Information Quality

Bayu Nugraha¹*, Finki Dona Marleny¹, Sfenrianto Sfenrianto², Cinthya Edwina²

¹Information System Program, Faculty of Science and Technology, Sari Mulia University, Banjarmasin, South Kalimantan, Indonesia
²Information Systems Management Department, BINUS Graduate Program – Master of Information Systems Management, Bina Nusantara University, Jakarta, Indonesia 11480

Corresponding author e-mail: *naigaxeon@yahoo.com

Abstract. The purpose of this study is to evaluate the quality of secretarial, financial and staffing information systems at the Directorate General of AHU, known as the E-PASTI system. There are two variables analyzed, namely system quality and information quality. Data collection using questionnaires that distributed to 123 employees who used the E-PASTI system but returned 93 questionnaires. Data quality analyst uses descriptive quantitative method. The results of the study are several conditions related to the system and information quality of E-PASTI. The quality can be a reference for the AHU Directorate General to improve the quality of E-PASTI that suits the needs of employees.

1. Introduction
The Directorate General of General Law Administration or Administrasi Hukum Umum (AHU) is under the auspices of the Indonesian Ministry of Law and Human Rights. In preventing budget irregularities, increasing the accuracy of administrative work in 2014 an electronic information system was built namely the Transparent & Innovative Secretariat Administration Program or Program Administrasi Sekretariat Transparan & Inovatif (E-PASTI). The implementation of the E-PASTI system has caused quality problems in system acceptance.

There are a number of problems found including inaccurate information, and less enthusiastic users using the system. This problem is caused by the gaps that occur in the quality of the system and the information expected to meet the proper accounting or budget reporting, uniformity in the process of filing a letter of assignment, and so on.

To achieve a good standard the E-PASTI system should have a good quality system and information. The same thing was explained in previous study, that aspects of user satisfaction are determined by the quality of the system and information [1]. Thus, this study aims to propose a quality analysis of the E-PASTI system to determine the conditions of the system and information quality. The result of evaluation is expected to know the current conditions so that improvements can be made to the quality needed or improved and maintain the quality of existing systems and information.

2. System and Information Quality
An information system must have a good system quality and information quality, which is represented by the system output obtained. System quality is used to measure the quality of the information system itself [2]. Meanwhile Information quality is used to measure the output quality of information systems [2].

Previous research stated that the quality of the system can be measured using several indicators. The quality of the system is determined by the reliability of the system being operated and is easy to understand [3]. Up-to-date content needed by quality systems [4]. In addition, the quality of the system requires clear user targets according to system quality requirements, core design which is able to adapt to certain conditions, and no errors were found on the quality system [5].
Meanwhile, the quality of information must be Accuracy & Accessibility [6]. Accurate means information must clearly reflect its purpose. Accessibility systems have the ease of accessing information. The quality of information must also be relevancy, the amount of information because it has benefits for the users. [7]. Indicators to measure how much the quality of information systems are manifested in the security dimension [8]. Value-added, Timeliness and Completeness of information is related to the quality of information [9]. The dimension of information quality is influenced by Concise & Consistent Representation, and Ease of Understanding & Interpretability [10].

3. Research Method
The object of research is users of E-PASTI system at the Directorate General of AHU. The system is one of the innovations for organizing administrations. In addition, it also provides convenience for implementation and transparency. The E-PASTI system consists of three main Modules, namely the Secretariat Module, the Attendance Module and the Financial Module. This study will focus on the Secretariat and Financial Modules.

The Secretariat Module discusses the official travel process for all employees. Official travel is a crucial activity within the Directorate General of General Law Administration, with a series of activities that are related to one another. The E-PASTI system is needed for efficiency and ease in arranging official travel.

This system is divided into 2 applications, namely: (1) Web-based applications for managers developed with PHP, and MySQL. Applications for this manager include the creation, deletion, assignment of users, and monitoring of all modules in the official travel application; (2) Web-based applications for users that include submission, verification and numbering of assignments and official travel. Meanwhile, the financial module is the spearhead of the cycle to carry out household and organizational needs. Figure 1 shows the application module pages that have been implemented on the E-PASTI system.

![Figure 1. The application module of E-PASTI System](image)

Analysis of the data in this study uses descriptive quantitative methods. It can describe the data of system quality and information quality the E-PASTI system. Descriptive statistical analysis also aims to provide an overview of the data so that it is easily understood and informative.
The way to get data is by giving questionnaire to the users of the system. Questions are arranged based on indicators of system quality variables and information quality. Figure 1 explains the variables, indicators and questions used.

### Table 1 Variables and Indicators

| Variables                        | Indicators                                      | Questions                                                                 |
|----------------------------------|-------------------------------------------------|---------------------------------------------------------------------------|
| Information Quality (IQ)         | Accuracy & Accessibility (IQ1)                   | Information generated from the E-PASTI system is in accordance with your wishes. |
|                                  | Relevancy, Amount of Information (IQ2)           | Information generated from the descriptive E-PASTI system.               |
|                                  | Security (IQ3)                                   | Information generated from the E-PASTI system is related to access rights according to authorized employees. |
|                                  | Value-added, Timeliness & Completeness (IQ4)     | The information generated is important for performance improvement.       |
|                                  | Concise & Consistent Representation (IQ5)        | Information generated from the E-PASTI system is consistent.             |
|                                  | Ease of Understanding & Interpretability (IQ6)   | Information generated from the E-PASTI system is easy to understand.      |
| System Quality (SQ)              | Easy to understand (SQ1)                         | The information generated by the E-PASTI system is easy to understand.    |
|                                  | Reliable (SQ2)                                   | The E-PASTI system's response is reliable.                               |
|                                  | Content up-to-date (SQ3)                         | The E-PASTI system displays up to date output according to current needs.|
|                                  | Clear target user (SQ4)                          | The information generated by the E-PASTI system is able to be precise and the E-PASTI System consistently represents the needs of each employee's business process or job desk. |
|                                  | Intuitive design (SQ5)                           | E-PASTI system can be trusted and able to adapt to certain conditions (flexible). |
|                                  | Free of errors (SQ6)                             | No errors were found on the E-PASTI system.                              |

The questionnaire uses a Likert Scale, in order to measure the attitudes, opinions, and perceptions of users as respondents. Likert scale is also used to make structured questionnaires with multiple choice forms. For the purposes of the analysis the answers are given a score: Strongly Agree (SS = 5), Agree (S = 4), Undecided (U = 3), Disagree (D = 2), Strongly Disagree (STS = 1) (see table 2).

### Table 2. Likert Scale

| Statement         | Alias | Score |
|-------------------|-------|-------|
| Strongly Agree    | SS    | 5     |
| Agree             | S     | 4     |
| Undecided         | B     | 3     |
| Disagree          | TS    | 2     |
| Strongly Disagree | STS   | 1     |

### 4. Result

The results of the questionnaire distribution of this study are described in the following sections: the respondents only come from active students of e-Learning. Figure 1 shows the respondents’ results by
gender. Respondents of this study (154 men and 212 women). After the questionnaire results were processed in the SPSS application, we found the following matrix component results (see Table 4).

### Table 3 The data of Respondents Characteristics

| Characteristics | Data |
|-----------------|------|
| Gender          | Male = 47 (51%)  
                 | Female = 46 (49%) |
| Working Period  | <1 year = 13 (14%)  
                 | 1-5 years = 28 (30%)  
                 | > 5-10 years = 14 (15%)  
                 | 10-15 years = 20 (21%)  
                 | > 15 years = 19 (20%) |
| Directorate     | Secretariat = 19  
                 | Secretariat = 18 (19%)  
                 | Civil Directorate = 11 (12%)  
                 | Criminal Directorate = 15 (16%)  
                 | Directorate of International Law and Central Authority = 15 (16%)  
                 | Directorate of Information Technology = 15 (16%)  
                 | Directorate of Constitutional Law = 19 (21%) |
| Education       | Diploma = 11 (12%)  
                 | Bachelor's degree = 40 (43%)  
                 | Masters = 20 (30%)  
                 | Doctorate = 14 (15%) |

Descriptive Analysis is a method relating to the collection, summarization, and presentation of data so that it provides useful information and also organizes it into a form that is ready to be analyzed (Jacobs, 2010). Thus, this descriptive statistics is the phase that explains the elaboration and presentation of data. Table 4, shows the results of descriptive analysis on the evaluation of the E-PASTI system.

### Table 4. the results of questionnaire for each variable

| Variable | Indicators | STS | TS | B | S | SS | Total |
|----------|------------|-----|----|---|---|----|-------|
| IQ       | IQ1        | 8   | 15 | 13| 38| 19 | 93    |
|          | IQ2        | 10  | 12 | 10| 36| 25 | 93    |
|          | IQ3        | 4   | 16 | 14| 34| 25 | 93    |
|          | IQ4        | 1   | 14 | 15| 39| 24 | 93    |
|          | IQ5        | 6   | 13 | 19| 38| 17 | 93    |
|          | IQ6        | 7   | 9  | 21| 39| 17 | 93    |
| SQ       | SQ1        | 6   | 14 | 7 | 37| 29 | 93    |
|          | SQ2        | 5   | 5  | 25| 40| 18 | 93    |
|          | SQ3        | 5   | 8  | 27| 31| 22 | 93    |
|          | SQ4        | 2   | 10 | 24| 34| 23 | 93    |
|          | SQ5        | 4   | 5  | 21| 35| 28 | 93    |
|          | SQ6        | 2   | 13 | 23| 30| 25 | 93    |

Based on table 4, the highest number of scores for SS is 1 x 93 = 93, while the STS is 5 x 93 = 465. Weights are calculated based on each respondent's value multiplied by the likert scale. Thus, the formula percentage (%) = weight / STS x 100. The results of evaluation of the E-PASTI system is determined based on the percentage index table 5.

### Table 5. The percentage index

| The results of Evaluation | Percentage Index |
|---------------------------|-------------------|


Table 6 shows the responses of respondents to questions related to the information quality variable. Information Quality Conditions generated from the E-PASTI system at the AHU Directorate General is included in the good category. This was proven by 71.7% of employees answering in agreement, meaning that most DG AHU employees felt the information quality generated by the E-PASTI application was quite consistent. While 28.3% answered disagreed or mediocre about the information quality.

### Table 6 The Responses of Respondents to Questions Related to the Information Quality

| Symbol | T.STS | T.TS | T.B | T.S | T.SS | Weights | %   |
|--------|-------|------|-----|-----|------|---------|-----|
| IQ1    | 8     | 30   | 39  | 152 | 95   | 324     | 69.7|
| IQ2    | 10    | 24   | 30  | 144 | 125  | 333     | 71.6|
| IQ3    | 4     | 32   | 42  | 136 | 125  | 339     | 72.9|
| IQ4    | 1     | 28   | 45  | 156 | 120  | 350     | 75.3|
| IQ5    | 6     | 26   | 57  | 152 | 85   | 326     | 70.1|
| IQ6    | 7     | 18   | 63  | 156 | 85   | 329     | 70.8|
|        |       |      |     |     |      |         |     |
| **Average** |       |      |     |     |      |         | **71.7** |

Table 7 shows the responses of respondents to questions related to the system quality variable. System Quality Conditions generated from the E-PASTI system at the AHU Directorate General is included in the good category. This was proven by 74.1% of employees answering in agreement, meaning that most DG AHU employees felt the system quality generated by the E-PASTI application was quite consistent. While 25.9% answered disagreed or mediocre about the system quality.

### Table 7 The Responses of Respondents to Questions Related to the System Quality

| Symbol | T.STS | T.TS | T.B | T.S | T.SS | Bobot | (%) |
|--------|-------|------|-----|-----|------|-------|-----|
| SQ1    | 6     | 28   | 21  | 148 | 145  | 348   | 74.8|
| SQ2    | 5     | 10   | 75  | 160 | 90   | 340   | 73.1|
| SQ3    | 5     | 16   | 81  | 124 | 110  | 336   | 72.3|
| SQ4    | 2     | 20   | 72  | 136 | 115  | 345   | 74.2|
| SQ5    | 4     | 10   | 63  | 140 | 140  | 357   | 76.8|
| SQ6    | 2     | 26   | 69  | 120 | 125  | 342   | 73.5|
|        |       |      |     |     |      |       |     |
| **Average** |       |      |     |     |      |       | **74.1** |
5. Conclusion
The condition of the quality of the system and the quality of information on the E-PASTI system is in good condition. To improve the quality of information, it must be ensured that the information generated from the system is in accordance with the user's wishes, increases the accuracy of the information, produces clear information, keeps information easily understood, guarantees information is up to date, and maintains the completeness of information in accordance with the agreement with the user. Meanwhile, to improve the quality of the system requires a clear and open agreement with employees at the Directorate General of AHU regarding the needs of the information system to be developed, it is necessary to make an information system that is easy to learn, increases response time, makes it easy to use the system, maintain system stability, increase user confidence in the system, make the system flexible, and improve system security. It is also necessary to support technology that is reliable and in accordance with needs.

Reference
[1] Noorman bin Masrek, M. (2007). Measuring campus portal effectiveness and the contributing factors. Campus-Wide Information Systems, 24(5), 342-354.
[2] Delone, Mclean. (1992). Information System Success. The Quest for the Dependent Variable. Information System Research.
[3] Yoo, C. W., Kim, Y. J., & Sanders, G. L. (2015). The impact of interactivity of electronic word of mouth systems and E-Quality on decision support in the context of the e-marketplace. Information & Management, 52(4), 496-505.
[4] Hasan, L., & Abuelrub, E. (2011). Assessing the quality of web sites. Applied Computing and Informatics, 9(1), 11-29.
[5] Alexander and Tate. (1999). Web Wisdom : How to evaluate and create information quality on the web. Mahwah. NJ. Erlbaum.
[6] Alenezi, H., Tarhini, A., & Sharma, S. K. (2015). Development of quantitative model to investigate the strategic relationship between information quality and e-government benefits. Transforming Government: People, Process and Policy, 9(3), 324-351.
[7] Castillo-Ortiz, J. D., de Jesus Valdivia-Nuno, J., Ramirez-Gomez, A., Garagarza-Mariscal, H., Gallegos-Rios, C., Flores-Hernandez, G., & Suarez-Rico, A. (2017). Readability, relevance and quality of the information in Spanish on the web for patients with rheumatoid arthritis. Reumatologia Clinica (English Edition), 13(3), 139-144.
[8] Alenezi, H., Tarhini, A., & Sharma, S. K. (2015). Development of quantitative model to investigate the strategic relationship between information quality and e-government benefits. Transforming Government: People, Process and Policy, 9(3), 324-351.
[9] Setiyawati, H. (2013). The effect of Internal Accountants’ Competence, Managers’ Commitment to Organizations and the Implementation of the Internal Control System on the Quality of Financial Reporting. International Journal of Business and Management Invention, 2(11), 19-27.
[10] Inderapermana, Y. (2013, November). Effect of information quality on decision performance at regency development priorities. In 2013 Joint International Conference on Rural Information & Communication Technology and Electric-Vehicle Technology (rICT & ICeV-T) (pp. 1-6). IEEE.