E-Government Implementation in Indonesia: Financial Transparency on the Web

Budi Hermana [1], Avinanta Tarigan [2] Henny Medyawati[3] Widya Silfianti[4]

[1][3]Faculty of Economics, Gunadarma University, Depok, Indonesia

[2][4]Computer Science Department, Gunadarma University, Depok, Indonesia

Abstract. This paper describes a feature of the website of local government in Indonesia and analyzing the digital divide of financial transparency on the Internet. The research objects are the website of 33 province, 349 districts, and 91 cities in Indonesia. The techniques used in this calculation are correlation analysis, cluster analysis, and discriminant analysis. Interesting findings is the indication of the digital divide between levels of local government and between the regions in Java islands with the regions outside of Java. Provincial governments, districts, and cities located outside the island of Java relatively have less information as well as services on their websites. Digital gap, in the respect of website features and the disclosure of financial information, require further study, particularly to identify the actual causal factors.

Keywords: e-government, digital divide, financial disclosure index, feature index

1. Introduction

Based on Global E-Readiness Ranking published by the United Nation in 2010, Indonesia's rank of E-Readiness is below the world average or even South-Eastern Asia. The value of Indonesia E-Government development index is 0.4026, or lower than the value of the previous year which was 0.4107. This value is still below the South-Eastern average (0.4290) and below the world average (0.4514). Having this situation, Indonesia's rank is 109 in the global level. The assessment components considered relatively low are online services and telecommunication infrastructure compared to the value of human capital component. The objective of e-government is to provide governmental information management that is more efficient, to provide better services, and empowerment of people through access to information and participation in public decision making (Curtin, 2006).

One of the important issues in financial management in Indonesia is transparency and public accountability. Therefore, the quality of financial information disclosures on the Internet is becoming an important issue. Unreliable financial information published on the Internet is considered less relevant or irrelevant for rational users, and may have a detrimental impact on other users. The aim of the study is to describe an overview of features of the website of local government in Indonesia and a metric of financial transparency disclosure based on Internet. The discussion focuses on the analysis of the digital divide of financial transparency on the Internet, between Java and outside-Java, as well as between provincial government and municipal government.

2. Theoretical Framework

E-government, as is presented in UNO report on UN Global e-Readiness Reports is utilization of ICT and implementation by the government to provide information and service to the public. The objective of e-government is to provide governmental information management that is more efficient, to provide better

services, and empowerment of people through access to information and participation in public decision making (Curtin, 2006). Kumar (2003) states that e-government allows greater public participation in politics and decision makings; something that is not possible to conduct in the past. Participation has increased the mutual trust between government and society and also among the public.

Hanafi, Kasim, Ibrahim, and Hancock (2009) mentions that some of the research on corporate reports that is published on the Internet using various indices to measure the degree of disclosure. But the various indices used today still have the weakness in terms of its coverage, which is limited to disclosure of financial information. One of the important issues in financial management in Indonesia is transparency and public accountability. Therefore, the quality of financial information disclosures on the Internet is becoming an important issue. Generally, the evidence regarding determinants of voluntary disclosure in the public sector is less conclusive in comparison with such evidence in the private sector. the nature of public sector organization, financial reporting practices and their agency relationships varies more considerably within and across countries in comparison with private sector organizations. (Laswad, Fisher, and Oyelere, 2001). For Indonesia case, There is a remarkable lack of transparency, and checks and balances in public financial affairs are largely absent in all districts (Kristiansen, Dwiyanto, Pramusinto and Putranto, 2008).

According to Rocheleau and Wu (2005), the biggest challenge of e-government applications is to allow the public or other users to perform financial transactions with the government related to the 24 hours per day, 7 days per week. The research indicates that online financial transactions continue to be offered as a promise in the future, although its success is not easy and still takes time. Stage of e-government development, according to Baum and Maio (2000) in the As-Saber et al (2006), consists of four phases: emergence, interaction, transaction, and transformation. These phases are chronological phases in developing e-government. One interesting concept in the implementation of e-government is how to integrate these various systems or applications between central and local government, between one department with another department, or between institutions that are related in function and authority. The concept of integration of various departments and various application systems in each of these institutions has been presented by Mak (2001).

Hermana, Budi and Widya Silfianti (2011) in the previous study doing research in the form of an exploratory study to identify the digital divide in Internet-based public service delivery by local governments in Indonesia. Numbers of local government websites are as many as 181 websites with consist of 32 provinces, 42 cities, and 107 districts. Data was collected on March 26, 2010. Website of local government has not provided good service for the four types of services: the FAQ, e-procurement, site, and location maps. All four types of those services are indeed very important for public service in the information age. Hermana, B., A. Tarigan, H. Medyawati and W. Silfianti (2011) found that local government has not utilized public services through the website optimally. The top-ten national rank on website features is dominated by 6 district government websites. Website feature that is the most widely deployed by local government is "news", while the feature which seldom available is "FAQ". Financial information disclosure index is relatively lower than website features index. This fact shows that policy of financial transparency and public accountability should be more promoted and implemented.

3. Methodology

The research objects are the website of 33 province, 349 districts, and 91 cities in Indonesia. Instrument used in this research is adopted from Hanafi, Karim, and Ibrahim (2009). Measurement service feature completeness and disclosure of financial information on the website was done by direct observation of the website from their respective governments. These observations were conducted by the research team along with a survey team has the ability in the field of website evaluation. Such measurements using the worksheet in the form questionnaire stuffing which generally consists of two main parts are used as ranking parameters are:

- Completeness of service features provided on the website which consists of 18 local government service features that may be applied to local government websites, ranging from standard features such as news and information get to the facility more advanced services such as e-procurement

- Disclosure of financial information consists of 15 questions, among them the budget document, the realization of the budget, asset inventory of the area, local regulatory documents, and information and levy taxes.

Measurements using a dichotomous measurement scale that if the information exist then the value is 1 and if not exist then the value is 0. Based on the accumulated scores then each local government websites can be calculated for these parameters premises index values ranging from 0 (minimum) to 1 (maximum). Index value is calculated by dividing the score results of observations with the highest score. Retrieval of data for each variable on the entire web province performed on the same day.

The techniques used in this calculation are correlation analysis, cluster analysis, and discriminant analysis. Cluster analysis is used to explain the map of classification of local government's web performance index as well as financial transparency. Discriminant analysis is used to predict the map of digital divide between levels of local government, namely between the provincial government and municipal government, as well as the map of digital divide between local government located in Java Island and those that are located outside Java. General description of financial information disclosure index and website services for provincial government are presented in a map using color indicators, which are (a) Blue if I is greater than or equal to 0.75, (b) Green if $0.5 \leq I < 0.75$, (c) Yellow if $0.25 \leq I < 0.5$, and (d) Red if I is less than 0.25.

4. Result and Discussion

Data collection and evaluation are carried out on all 443 local governments in Indonesia that already have official websites. The number of websites that are accessible at the time of data collection period is only 374 websites. It means that there are 69 websites which are not accessible during this period. The value of the index ranges from 0 to 1. The average of national index is 0.629. Website feature that is the most widely deployed by local government is the "News", while the feature seldom available is the "FAQ". The top-ten national rank on website features is dominated by 6 district government websites. Nevertheless, the first position is taken by the City of Pekanbaru. Two municipalities that enter the top ten is Prabumulih and Banjarbaru. The only provincial government ranked in the top ten is West Java. The complete index value for the 18 indicators is presented on Fig.1.

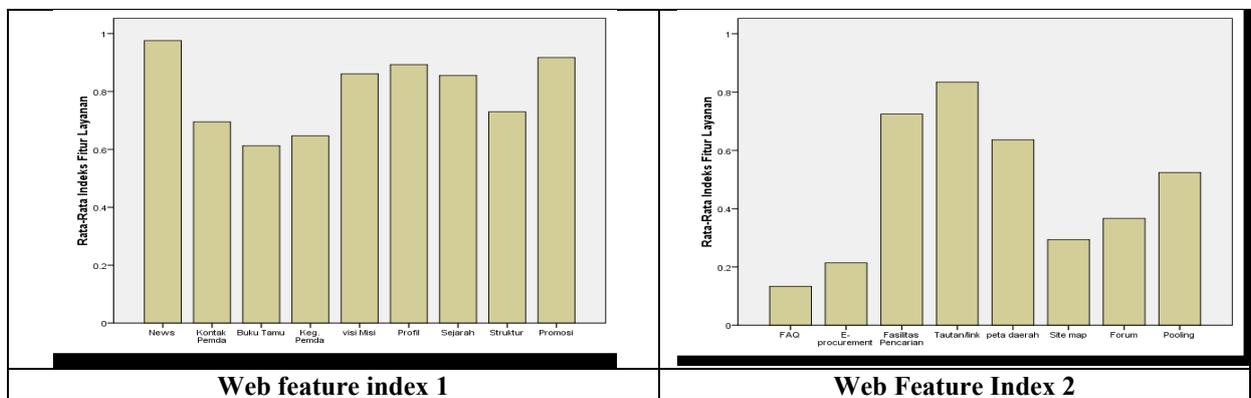| Web feature index 1 | Web Feature Index 2 |

Fig.1. Website Feature or Non-Financial Index

The values of non-financial index which are relatively high are not matched with the results of financial index that are relatively low for the entire local government websites. Financial index value is ranging from 0 to 0.8 with average index value of 0.191. The evaluation results for the provincial government showed that only one local government whose value is between 0.5-0.75, while other 32 provinces have index value below 0.5. The average index value of the 15 indicators is presented in Fig. 2. Policy related documents are the most available documents with index of 0.536. Whereas financial fraud related documents are the rarest documents available with index of 0.011.
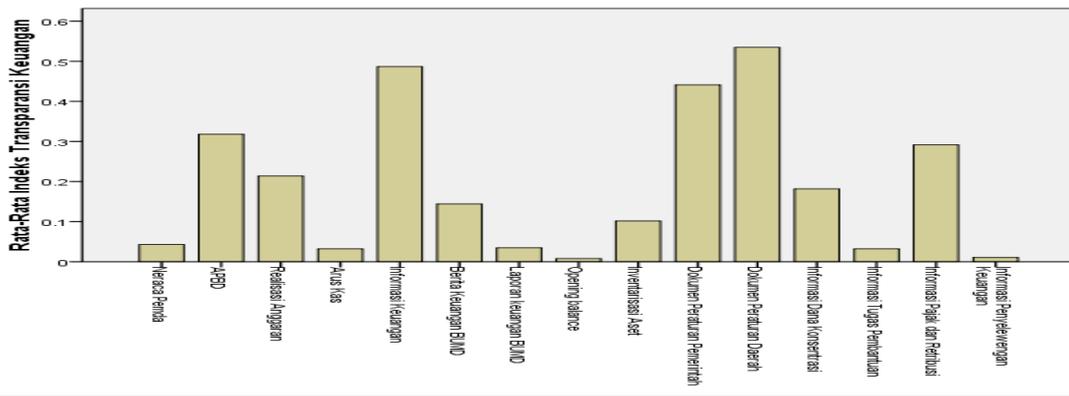
Fig.2. Financial Information Disclosure Index

The result of cluster analysis showed that the percentage of the province in the cluster 1 (high) is relatively higher compared with the percentage of both district and the city. The values are 50% for the province, 40.31% for the district and 45.23% for the city. Using location as a basis of grouping shows that local government located in Java Island are relatively more in cluster 1 compared to local governments outside of Java, which is 61.06% versus 33.85%. Distribution table of local government based on cluster analysis results is presented in Table 1.

Table 1. Local Government Cluster

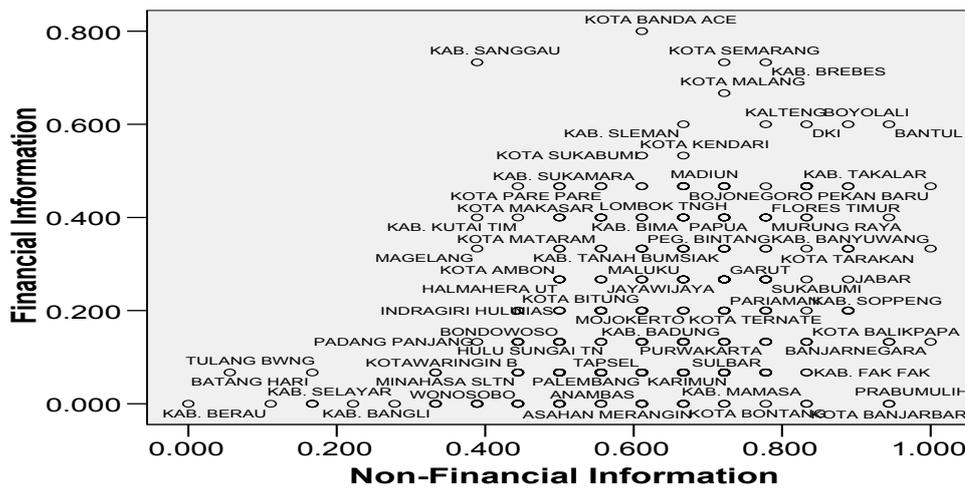|	Cluster 1 (High)	Cluster 2 (Low)
Government Level		
Province	15	15
District	106	155
City	38	45
Region/Location		
Java	70	44
Outside java	89	171

Fig.3. Scatter Diagram of Information Index

The mapping of the two variables, financial and non-financial index, is presented in Fig. 3 using scatter diagram. There is no strong correlation between financial and non-financial index. The combination of a high index value is dominated by the local government at municipal level (district or city), and low combination is dominated by local governments for the region outside the island of Java.

The type of Indonesian local government websites is more informational rather than transactional. Feature of the website that is transactional is limited only on e-procurement or interactive public information

197

service. Complex and advanced transactional interactions such as online payment system is not yet available as website features. In general, financial information disclosure index is relatively lower than website features index. This fact shows that policy of financial transparency and public accountability should be more promoted and implemented in Indonesian local government. One of the classical problem of the utilization of local government website is the content update that is usually relative late and not up to date. The other problem is accessibility and the richness of features in the web based public services. Website of local government in Indonesia has not provided good service for the four types of services: the FAQ, electronic procurement, site map, and location. According to a road map of e-government development, as was quoted by Harijadi and Satriya (2000), this findings could also mean that e-government development has only reached the medium-term or third stage. There is few of local government that has reached the stage of public participation or phase 4 in which one of its services are business transactions and interactions with the community. The results of Yunis and Sun (2009) show that infrastructure, human capital, and the level of online presence and interactive services initiated by the government are significant determinants of e-government readiness.

The other obstacle is the low degree of website utilization by the users. This can be measured using widely available traffic analysis tools, for example alexa.com. Furthermore, Silfianti, Suryadi, and Suhendra (2010) confirmed that popularity of a local government website has positive correlation with its richness of contents and features as well.

The interesting finding in this research is the indication of the digital divide between levels of local government and between the regions in Java islands with the regions outside of Java. The city government average index is higher than both of the provincial and district, in the respect of financial information and non-financial information. City governments have higher authority of administration and socio-economy rather than district government or local government in urban areas. Furthermore, telecommunications infrastructure and the people are relatively more advanced. The provincial government is relatively left behind on this respect. This is due to its role in coordinating lower level local governments rather than serving the people directly.

5. Acknowledgements

6. References

[1]   As-Saber, Sharif N, A. Srivastava, and K. Hossain. 2006. Information Technology Law and *E-government*: A Developing Country Perspective. *Conference on the practice of e-government and e-governance* organized by Monash University.

[2]   Curtin, Gregory G. 2006. Issues and Challenges Global E-government/E-Participation Models, measurement and Methodology A Framework for Moving Forward. Prepared for the United Nations Department of Administration and Development Management, *Workshop on E-Participation and E-government: Understanding the Present and Creating the Future*, Budapest, Hungary.

[3]   Hanafi, S.R., M.A Kasim, and M.K. Ibrahim. 2009. Business Reporting on the Internet: Development of the Disclosure Quality Index. *International Journal of Business and Economics*, Vol. 8 No. 1 pp. 55-79.

[4]   Harijadi, D.A. and E. Satriya 2000. *E-government*'s Road Map To *E-government*: Opportunities And Challenges. Paper presented at *APEC High-Level Symposium on e-government*, Seoul, Korea.

[5]   Hermana, B., A. Tarigan, H. Medyawati, W. Silfianti. 2010. Financial Information Disclosure Measurement on The Website of Indonesian Local Government. *Proceeding of KOMMIT*, Denpasar, Bali, Indonesia.

[6]   Hermana, Budi and W. Silfianti. Evaluating E-government Implementation by Local Government: Digital Divide in Internet Based Public Services in Indonesia**.** *International Journal of Business and Social Science Vol. 2 No. 3 [Special Issue - January 2011].*

[7]   Kristiansen, Stein, Dwiyanto, Agus, Pramusinto, Agus and, Putranto, Erwan Agus, 2008. Public Sector Reforms

and Financial Transparency: Experiences from Indonesian Districts. *Contemporary Southeast Asia* Vol. 31 no. 1, 2008

[8] Kumar, A. 2003. E-Government and Efficiency, Acountability and Transparency. *The Electronic Journal on Information System in Developing Countries* Vol.12, No. 2, pp. 1-5.

[9] Laswad, Fawzi, Fisher, Richard, and, Oyelere, Peter. 2001. Public Sector Financial Disclosure on The Internet: A Study of New Zealand Local Authorities. *Commerce Division discussion paper*: no. 92, Lincoln University, CANTERBURY, ISSN 1174-5045, ISBN 1-877176-69-9

[10] Mak, Stephen. 2001. An Enabling IT Architecture and Infrastructure to Support e-government. *Government Through the Portal Conference*.

[11] Rocheleau B., and L. Wu. 2005. E-Government and Financial Transactions: Potential Versus Reality. *The Electronic Journal of E-Government,* Volume 3 issue 4, pp 219-230

[12] Silfianti, W., Suryadi H.S., A., Suhendra, 2010. Performance Evaluation of Indonesian Local Government Website: Analysis of web Content, Traffic and Webmetric. *Proceeding of the Second Annual GMConference Globalization, Sustainability and Development.*

[13] Yunis, M. M. and J. Sun. 2009. Determinants of E-government Readiness: An Application of Canonical Correlation and SEM Analysis Techniques. *Conference of Decision Sciences* Institute Southwest Region