

Critical Factors of Transparency and Trust for Evaluating E-government Services for the Poor

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Abstract--In today's globalization, the advancements of Information technology (IT) have been greatly improved. It is shown by many people utilize IT to obtain information through the availability of an adequate information systems. This leads local governments develop electronic government (e-government) to tend in providing information to entire levels of society in Indonesia. Several researches have emphasized the development of e-government models only focus on typology. The purpose of this study is to investigate the factors of e-government based on transparency and trust in provide better and delivery of information to the poor people. In addition, this study develop the concept of a transparent and trust e-government model in Palembang. The quantitative research is used for collecting data in four sub-districts in Palembang, which have the greatest ratio in pre-prosperous society. The result of this research is a transparent and trust e-government concept that could be utilized by the government of Palembang to reach a public service especially for the poor people.

Keywords-- e-government; transparency; trust; public services.

I. INTRODUCTION

In this globalization era, the advancement of Information Technology (IT) is growing rapidly as marked by the high interest of society in gathering information through the availability of adequate information systems. This is because IT can be used to assist organizations in processing, storing and converting data into information needed by them. The example of IT implementation in providing information for public is electronic government or e-government. Gil-Garcia and Martinez-Moyano [1] define e-government as a government way in utilizing IT to enhance transparency and trust innovatively by applying the use of web-based portal systems. In general, its function is as a tool to provide accessibility of information and public services and to observe the performance of transparent government. In Addition, e-government is used to interact and communicate with people through three functions of e-government. They are informational, interactional and transformational. Informational is how government provides information through download facilities and brochures from its websites. Interactional, where people can interact through asking

questions, complaining, or seeking information from e-government and facilitates people to participate to create the new regulations and policies and implemented in society. Transformational is how e-government can play an important role or be active in modifying the internal government as the process in improving services, especially the poor people. Based on its advantages, the government can be transformed in providing public services from conventional systems to online systems.

In Indonesia, the prior researches have emphasized the development of e-government models including Government-to-Government, Government-to-Citizen, Government-to-Business, Government-to-Civil society and Citizen-to-Citizen, used as media to communicate, coordinate, and improve the public service standardization. In addition, they also focused on e-government typology that meant its development is oriented to administration, provision of information and users. For example, Rahardjo, et al. [2], analyse the content, design and services of city, provincial and central government websites in Indonesia. Hence, it can be concluded that many research on e-government focused on its development only but not on identifying factors that might influence the role of people as "user" in accessing it.

Despite, the rapid development of Information Technology (IT) that might be utilized to access e-government, such as the Internet, World Wide Web (WWW), Website, Email, 3G and 4G mobile phones, networking via YouTube, twitter, Facebook and others, many Indonesians, especially the poor people in particular are facing difficulty in accessing public information provided by both the local and the central government. Therefore, there is a need to help government in identifying to encourage the poor people to communicate and interact in e-government.

Palembang is one of the largest cities in Indonesia with a population of 1,568,491 people and a total of 385,000 poor people in 2014. In public service, the current government of Palembang has an official website at www.palembang.go.id as a form of the existing e-government application. This site is used to provide information about government, education, health, tourism, transportation, trade, business and professionalism to public. Unfortunately, how extent the website accessed by the poor people and what critical factors can be utilized to increase

their participation had not yet been identified. Therefore, in order to answer these questions, this research would attempt to develop an e-government concept to understand how extent its service could reach and increase the poor people to access website of Palembang. This would also observe the extent of Palembang website as a form of e-government service to the poor people by using quantitative survey method through samples in five districts in Palembang.

II. LITERATURE REVIEW

A. *Electronic Government Services*

The implementation of e-government is to increase the number of participation, provide quality services and attract the attention of the poor. In addition, its implementation can be increased by trust and transparency in interacting with them. To provide quality services to stakeholders including the community, industry and social, the government needs to see how much they understand the stakeholder needs that are suitable with their capabilities. The municipalities and districts in Indonesia have already used e-government to serve the people. However, many e-governments are not entirely or totally beneficial in providing benefits and services to them.

Web Portal is one of type of e-government. It typically utilized by municipalities or districts to improve their design, public services and processes to engage with stakeholders, as well as to enhance trust and transparency in encouraging greater interaction with people.

Description below is an explanation of how to build a transparent and trust e-government for the poor people.

B. *Transparency of E-government*

E-government is implemented and tailored with the socio-politics, geographic and individual needs of a government. In addition, it is also used as one of the embodiment of transparency in every aspect of government audit in order to reduce corruption opportunities so that it will contribute greatly to public perception on clean government. Therefore, information and communication technology, especially e-government is as one of the supporters of the realization of a transparent government.

The concept of transparency in e-government is a principle that guarantees or gives freedom to every person who requires to obtain information about the implementation of government in terms of policy, the process of making and its application and the results achieved or the open policy of supervision. While the meaning of transparent information is about every aspect of government policy that can be reached by people, this disclosure information is expected to build tolerance and policies based on the public reference. This principle has two aspects of public communication by the government and the right of people to access information. Both will be very difficult if government does not handle its performance properly through transparency. Public will demand this alternative effort of government to disclosure and disseminate relevant and transparent information, and also all their activities have to be balanced between the requirements and confidentiality of the institution as well as information that affects the personal information privacy rights. Due to the large number of data in e-government, there is a

requirement professional information officers, not to make a decision on government policies and regulations, but to disseminate regulations and policies which made by government to the people. Azwardi [3] reveals that transparency is about how a local government to disclosure in creating local financial policies and can be supervised and monitored by Regional House of People's Representatives (DPRD) and public. Mendel [4] mentions that based on the international transparency and constitution on freedom of information, government is not only regulate the public's right to access information but also obligate to facilitate the people to access the information. In addition, transparency in e-government can also be seen from the provision of information on government administration processes such as the making of identity and family cards. Zambrano [5] in his research entitled "E-governance and development: Service Delivery to empower the poor and improve services", reveal that transparency can be done by society through supervision and contribution to public services by making reports that occur in government, for example damaged irrigation, absent teachers at school and other government issues. Criado, et al. [6] build an innovation of an e-government concept used to communicate and interact with society. This study reveals that a transparent e-government is one approach that can involve people in every government event through providing menus or feedback in e-government.

Thus, based on several previous studies above, it can be concluded that transparency in e-government can be established through providing information of government policy, government monetary policy, responsive e-government, monitoring facilities and process disclosure to ensure freedom and the rights of people to access information at any time, providing public report in e-government, interactive and communicative e-government, tracking decision made and available of feedback menu in e-government.

C. *Trust of E-government*

The relationship between government and society is demonstrated to public trust in the ability to reflect transparent e-government. In a study conducted by Zambrano [5] an illustration of an e-justice project designed to increase legal awareness and understanding by simplifying existing laws, providing access to information and services as human rights and issues reversed with people's lives to enhance the image of clean government. The goal of this project is to provide an IT-based service so that people can consult online with legal experts. It also provides online forms that can be used to ask for assistance if they are exposed to legal issues. Therefore, with the use of IT can help the government increase trust in the community.

Many previous studies have investigated the factors of trust in e-government. For example, Cullen and Reilly [7] reveal that trust in e-government is associated with community expectations and knowledge of government. Zambrano [5] mentions that the quality of information generated by e-government is one of the important factors to build public trust. Raul also states that the belief in the use of e-government determined by the background or characteristic of the community as the users. Colesca [8] claims that trust is the ability of government to provide online-based services. Cuillier and Piotrowski [9] and Bertot, et al. [10]

reveal that public trust could be improved through the provision of accurate and certain information. Bertot, et al. [10] state that information disclosure in culture and operational government are two important factors in the implementation of e-government in increasing public trust. Without these two factors it is highly unlikely that trust between government and people governed will develop and actually create an open and transparent environment. The responsiveness of e-government can build people's confidence in using it. Based on research conducted by Lee, et al. [11] reveal that public might face uncertainty in the use of Internet-based technologies. The reliability and security of e-government are the important concern of the community especially if they have never used it.

Based on the discussion above, this study concludes that to develop e-government requires transparency and trust to improve the poor people's participation.

TABLE 1. SUMMARY OF FACTORY IN TRANSPARENCY AND TRUST IN E-GOVERNMENT

Variables	Indicators	References
Transparency	Government policy	Azwardi [23] Mendel [24] Zambrano [25] Criado, et al. [26]
	Government monetary policy	
	Responsive	
	Monitoring and observing process on government events	
	Public report	
	Interaction with society	
	Communication	
	Tracking decision and action in Palembang	
Feedback		
Trust	Government knowledge	Cullen and Reilly [28] Zambrano [25] Colesca [29] Cuillier and Piotrowski [30] Bertot, et al. [27] Andersen, et al. [33]
	Information quality	
	Accurate information	
	Security	
	Characteristic of society	
	Online service	
	Information certainty	
	Information disclosure	

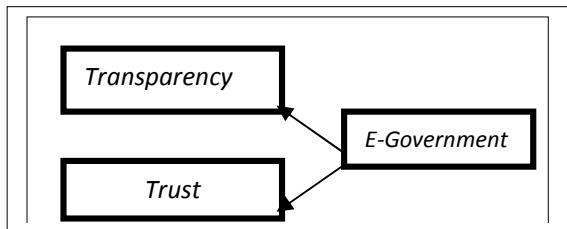


Fig. 1. E-Government Concept

III. RESEARCH METHODOLOGY

This research uses a quantitative research [12, 13]. The purpose is to observe the current e-government through questionnaire. The research methods is purposed to obtain all facts related to the development of transparency and trust model in e-government of Palembang in improving the quality of public services for the poor people. Data collection is conducted for three months starting from October to December 2016 in areas of the largest population of the poor people. The first step is review the previous research related to e-government and public services for the poor people. Government report

regulations and other related documentation are also examined to analyse the transparency capabilities of e-government. To enhance transparency and trust in e-government, some data such as legislation in central government and district city regulation, decree on working organizational structure of agencies in Palembang government are reviewed as well.

On the second stage, the questionnaire is given to the poor people. It is developed based on the literature review in developing transparent and trusted e-government model. At the beginning, the instrumental test with a few numbers of people is done. The purpose of this is to ensure that the questionnaire has been well developed. Then, it is presented by using the Likert scale method to test the role of transparency and trust in e-government services. The poor People's perception on using it is also measured. This then determines the critical factor in improving the services of government. The respondent is located in Seberang Ulu I Laut, Kemuning, Maskrebet, Seberang Ulu II, and Kertapati.

It is revealed that heterogeneous based on population present in this study. Heterogeneity has a significant meaning in achieving these research objectives. Thus, in selecting the sample, the research uses stratified proportional random sampling. First, taking the subject of each poor people is determined by the balance number and work unit (proportional sampling). Second, separating the population elements in non-overlapping groups called strata and selecting a random sample of each stratum are done to obtain the correct sample.

The questionnaires are distributed to the respondents based on the RT documents that received "Beras Miskin" (rice distributed for poor people by government) from their district and neighbourhood offices, and supported by statistical data from Statistical department of Palembang. There are 200 questionnaires out of 320 returned. This is because the 23 respondents do not want to fill out the questionnaires, 45 respondents are not present in the place or the house with some reasons for examples, working or having another activity, 35 respondents decline for not understand the contents of the questionnaires, 17 others has no time to fill and answer the questionnaire.

IV. FINDINGS AND DISCUSSION

A. General Overview of Respondents

This research spends three months in distributing the questionnaires. It starts in October till December 2016 by directing visit to the target respondent. The respondent's area is chosen based on the population of the poor people in Silaberanti, 1 Ulu Laut, Kemuning, and Maskarebet.

TABLE 2. RESPONDENT DISTRIBUTION

Area (districts)	Sent	Returned	%
Silaberanti	65	40	61.5%
1 Ulu Laut	35	17	48.6%
15 Ulu	170	115	67.6%
Kemuning	25	13	52%
Maskarebet	25	15	60%
1. Total	320	200	62.5%

TABLE 3. RESPONDENT PROFILE

No	Description	Total	Percentage
1	Male	156	78%

2	Female	44	22%
Total		200	100%
3	Elementary School	124	62%
4	Junior High School	44	22%
5	Senior High School	32	16%
6	Diploma	-	-
7	Bachelor	-	-
Total		200	100%
8	Labour	151	75%
9	Retired Civil Servant	1	0,5%
10	Entrepreneur	6	3%
11	Trader	42	21%
12	Others	-	-
Total		200	100%
13	<25 years	14	7%
14	26 – 35 years	42	21%
15	36 – 45 years	60	30%
16	46 – 55 years	53	26,5%
17	>55 years	31	15,5%
Total		200	100%

B. Data Analysis

Figure 2 shows the initial model developed for transparent and trust e-government in providing services to the poor people. It consists of two factors: transparency and trust. Transparency factors consist of an online public policy draft (TP1), online budget disclosure (TP2), automatic response (TP3), monitoring and supervision of government activities (TP4), community reports (TP5), community interaction (TP6), communication (TP7) tracking government activities (TP8), and feedback (TP9). The trust factor consists of government knowledge (TR1), qualified information (TR2) and accurate (TR3), information security (TR4), security (TR5), community characteristics (TR6), online service (TR7), and information disclosure (TR8). None of the indicators in the model are cross-loaded in each construct. As shown in Figure 2, the e-government model uses reflective constructs and indicators that led to the use of SEM reflective methods as well. For example in that figure, the e-government service is influenced by public perceptions of the transparency and trust roles in e-government. To analyse and evaluate its model, construct and related indicators, convergent, discriminant and factorial validity are conducted in this research. Convergent validity is done by considering; (a) loading factor (SFL) in each indicator, (b) construct reliability and (c) average variance extracted [14]. Loading (SFL) in each indicator must be more or equal to 0.5 for use in further analysis. Construct reliability for each is calculated as the squared of the loading factors sum divided by the squares sum of summing factor loading and the sum of error [15]. Acceptable CR values must be between 0.6 and 0.7. Average variance extracted (AVE) is calculated by dividing the total of all SFL squares by the number of indicators or items [15]. AVE value received must be more than 0.5. All indicators in each construct that met the above requirements are re-examined with discriminant validity. It measured the extent of the differences in each construct in the e-government model. To obtain the satisfactory value of discriminant validity, the AVE quadratic roots for each construct must be greater than the correlation between them [15]. Furthermore, the validity factor test is performed for each

construct and indicator that meet the value in the convergent and discriminant to represent the same value level.

The concept of e-government service model (Figure 2.) has been tested and evaluated for validity test by performing CFA (Confirmatory Factor Analysis) with GFI value (0.869), RMSEA (0.073), TLI (0.876), CFI (0.856), and p-value 0,000). These initial results indicated that the model is inadequate. Therefore it is necessary to conduct the congeneric factor test model for each individual construct. Its results show that there are several items in each removed. The six items deleted on transparency, are TP1, TP2, TP4, TP5, TP8, and TP9. Meanwhile, the four deleted items in trust are TR1, TR5, TR7, and TR8. The results of this congeneric factor analysis test can be seen in Table 4. This model is redefined by standardized factor loading, standardized residual covariance matrix, and modification Indies. Table 5 shows the GOF results from e-government services model testing. The GOF results showed that the test results are received with RMSEA (0.000), GFI (0.987), TLI (1.0), and p-value (0,595). To complete the convergent validity test, CR value is calculated in every construct. As shown in table 5, all constructs have values within the accepted range. This can be seen by the AVE value of each greater than 0.5. The SFL value for each indicator of the final model test showed above a critical value of 0.5.

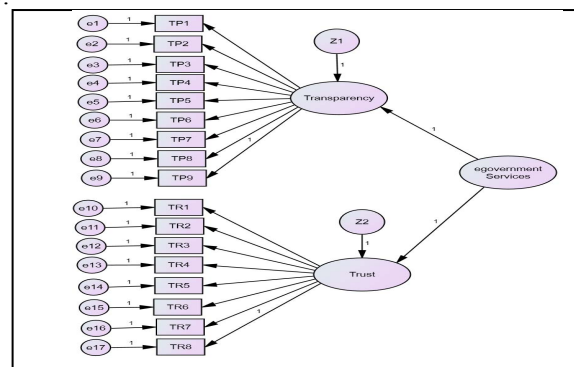


Fig. 2. Initial Measurement Model

All constructs that has passed the convergent validity test are validated for discriminant validity test. Discriminant validity among other factors of this model is examined by using model. The results show the discriminant validity in each pair of constructs with AVE square root is greater than the estimated correlation between them.

Factorial validity test is conducted to assess whether the factors passing the convergent and the discriminant ones showed the same level of construct, and to detect and remove items that having cross-loading [16]. The results prove that this factorial model has sufficient validity. The GOF of the final measurement model is also within an acceptable range. CMIN (X2) of 134.359 with df 14, and CMIN / df 9,597 indicated that it is quite in accordance with the value suggested by Hair, et al. [38]. In addition, the p value for the model is 0.05 very closed to an acceptable p value (Pb0.05). Furthermore, the fact that GFI (0.94) reached 0.95 indicated that this model is an adequate match. Similarly, both TLI (0.983) and CFI (0.985) are greater than 0.95, indicating that it is near perfect. Moreover, RMSEA (0.027) is less than 0.05 with PCLOSE value 0.998 (PCLOSEN0.05) and lower end of 90% confidence interval (LO 90) very close to zero (0.004).

TABLE 4. REDEFINING MODEL RESULTS

No	Factors	X ²	P	GFI	TLI	CFI	RMSEA
Recommended Value (Byrne, 2010 & Hair et al, 2010)		Na	>0.05	>.95	>.95	>.95	<.05
1.	Transparency	3.250	0.253	0.993	0.990	0.997	0.062
2.	Trust	2.022	0.254	0.994	0.998	0.992	0.048

TABLE 5. CONVERGENT VALIDITY TEST RESULTS

Construct	CR	AVE	Indicators		SFL
Transparency	0.60	0.51	Responsive	TP3	0.94
			Social Interaction	TP6	0.97
			Communication	TP7	1.00
Trust	0.66	.055	Information Quality	TR2	0.94
			Information Accuracy	TR3	0.96
			Security	TR4	0.92
			Society Characteristics	TR6	0.92

This is strong evidence as an appropriate final model and could be maintained. Figure 3 shows the final measurement model. The structural model of Fig. 3 indicates that strong support is essential for the e-government → transparency and e-government → trust paths with coefficient values of 0.98 and 1.00 lines in each. Models account for 96% of variance in transparency and 100% in trust. This shows that transparency and trust are critical factors in evaluating services in e-government.

All constructs that had assessed the convergent validity test are validated for discriminant validity test. Discriminant validity among other factors of this model is examined by using [17] model. The results show the discriminant validity in each pair of constructs with AVE square root is greater than the estimated correlation between them.

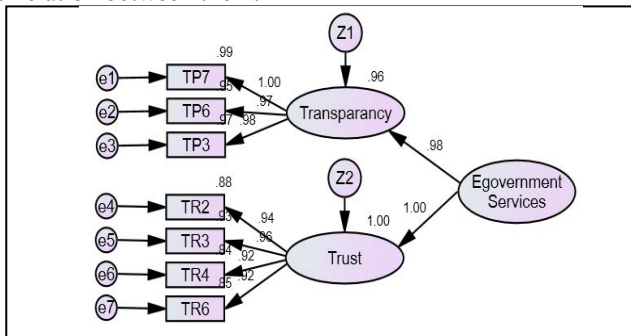


Fig. 3. Final Measurement Model

C. Research Findings and Discussion

Based on the analyses described above, the results of the two constructs are obtained. In terms of transparency, the nine indicators in the initial phase are found. However, there are only three which had the highest indicator or fixed toward its quality in e-government because they has matched the criteria of loading factor ≥ 0.5 . The values are TP3 0.98, TP6 0.97, and TP7 1.00. The responsiveness indicate that e-government services have to be designed to comply and meet public needs and concerns. For example, the Palembang website should be response to each comments posted by the poor people and other stakeholders. In addition, the people could get an automated message or feedback about the brief overview of the service, then they know whether or not their text or transaction is going well and correctly. This research finding is consistent with the previous research conducted by Gauld, et al. [18], which describe that by being responsive, e-government could increase the number of public

participation in accessing it. Moreover, they also show that the e-government quality should be able to interact with the people as disclosed by Reddick [19].

Communication indicator is one of the significant factors in improving e-government services for the poor people in Palembang. This result reveals that the concept of e-government should provide two way communication for reducing the gap between the poor people and government. This research finding is in line with Rokhman [20] who states that in improving the service of e-government, government is obliged to provide communication facilities on some units so that they could be more transparent. Interactive factor is also one of the critical factors of e-government services. Interaction means that government could utilize other channel such as social media to interact with various internal and external stakeholders for promoting the poor people participation in decision-making and improving communication and collaboration between government and citizens as well as among government agencies internally. However, there are several factors in this study that has no contribution in improving e-government services such as government policy and financial information, monitoring process or government events, provision of reporting and government decision-making facilities.

In term of trust, the initial phase has eight indicators and only four with acceptable range in e-government services for the poor people. This is because loading factors are greater than 0.5, the quality of information (TR2) is 0.94, TR3 is 0.96, and security (TR4) is 0.92, and the public characteristic (TR6) is 0.92. There are four indicators of trust removed from further analysis. This is because their factor loading are not within the acceptable range. They are TR1 (0.48), TR5 (0.40), TR7 (0.38), and TR8 (0.32). Those all items has no significant impact on e-government service for the poor people.

These findings are supported by previous related studies. Security is a significant factor to build trust of e-government. This is in line With Al-Omari and Al-Omari [21] and Theo Lonando, et al. [22], which reveal that public data and information should be not disseminated and publicized to people who are not responsible and interest with the information.

In term of information accuracy, it means that the official website of Palembang has no freeness of error of the information accessed by the poor people. This finding is relevant with Karunasena and Deng [23] that reveal that accurate information can promote the trust in e-government services.

The security of e-government is one of issues in developing an e-government. This is because the development of e-government is based on the Internet that cause the several issues in e-government services such as information intercepting, tampering, services denying and system resources stealing. This finding is relevant with Zhou and Hu [24], which reveal that there is a need to identify the security issues in developing an e-government in order to detect internal and external environment of e-government systems, check the vulnerabilities and weakness of the systems.

The final significant factor is the public characteristics. The public characteristic is about how the poor people to understand and use the e-government especially website through information and communication technology such as computer, laptop and mobile phone. This factor is consistent with the research done by Warkentin, et al. [25] that describe about trust. It is influenced by the characteristics of society in accessing e-government such as experience, education and background.

V. CONCLUSION

This paper presents an improvement of e-government services for the poor through transparency and trust in Palembang, Indonesia from perspective of transparency and trust. A model is developed by reviewing the prior researches on government public services. The model is validated using SEM based on the survey data collected in Palembang, Indonesia. This study concludes that the e-government services for the poor can be improved through transparency and trust. Transparency is determined by responsive, communication, social interaction, and feedback. Trust is determined by information quality and accuracy, security and social characteristics.

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