

# Analysis the Effect of E-Government Implementation on Quality of Information Towards Government to Government (*G2G*)

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**Abstract:** The purpose of this study is to analyze the effect of e-Government application on the quality of information at a local government. This study also analyzed factors that influence e-Government implementation such as user resistance, organizational culture, management support, human resource competence, and information technology. The population in this study were all employees of the local government in Kabupaten Agam. The sampling technique was purposive sampling. The total sample were 119 respondents out of 6874 employees. Data were collected by using questionnaire and analyzed with Structural Equation Model (SEM) and Second Order Confirmatory Factor Analysis (CFA) with AMOS 22. The results found out that there is a positive and significant influence of human resource competence on the implementation of e-Government. However, there is no positive and significant influence of user resistance, organizational culture, management support, and information technology on e-Government implementation. The results also show that there is a positive and significant influence of e-Government applications on information quality. Human resource competence is an important factor affecting the implementation of e-Government to produce good information quality at local government of Kabupaten Agam. The results of this study will contribute for the improvement of information systems in the district government of Kabupaten Agam as well as other districts in Indonesia. It will also enrich knowledge in information systems field.

**Keyword:** user resistance, organizational culture, management support, human resource competence, and information technology, e-Government, information quality

## 1. Introduction

The United Nations has published the EGDI (E-Government Development Index) ranking based on a 2016 survey where Indonesia was ranked as 116 EGDI, decrease 10 ratings, compared to 106 rank in 2014. This condition is still far below the countries in Southeast Asia such as Malaysia (ranked 60th), Philippines (ranked 71), and Brunei Darussalam (ranked 83rd). This has certainly created a challenge for Indonesia to be able to improve the EGDI rankings in the years to come, in which the figures obtained are a reflection of the conditions of e-Government implementation to ensure that public institutions are more inclusive, effective, accountable and transparent (BPPTIK, 2016)].

Presidential Instruction no. 3 of 2003 on National Policy and Strategy of e-Government Development was used in Indonesia. The President has instructed every Governor and Regent / Mayor to take the necessary steps in accordance with their respective duties, functions and authorities for the implementation of national e-Government development.

The Government through the Ministry of Communications and Information Technology to implement e-Government Ranking Indonesia (PEGI) were asked to look at the general condition of the implementation of e-Government in Indonesia. PEGI has been implemented since 2007 with the implementation phase of assessment, namely access to ministries / agencies, and provincial and district / city. The average value of national PEGI 2015 is at 2.7. For the ministerial level average value of 2.7 PEGI its first rating achieved by the Ministry of Finance, followed by the Ministry of Culture, Primary and Secondary Education ranked second and third in the Ministry of Foreign Affairs. While the average value of the national PEGI, LPNK level is achieved first by 2.7 by Statistics Agency for the Assessment and Application of Technology won the Geospatial Information Agency (Aptika, 2015).

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In the meantime, the island of Sumatra is getting a bad factor in the implementation of e-Government in 2015 where there are provinces of South Sumatra, West Sumatera and Lampung. The development of e-Government implementation in the province is still incomplete. The things that will be applied in the implementation of providing better information to the community (Aptika, 2015). The development of e-Government implementation in the province is still getting the Less appraisal so that this will result in the implementation of bad governance which then has implication to the public service in giving better information to the society.

At the district government level is Kabupaten Agam, some information systems / applications were created by the Regional Office. Each regional office has different information systems in the service environment and information exchange between agencies will affect the quality of information. As the search for Baltzan that Integrity Information system is a measure of the quality of information (Baltzan, 2012).

Agarwal (Agarwal, 2000) divides the application of e-Government into five levels. The higher the level, the more complex the problems will be faced. The information system in Kabupaten Agam for each regional office has its own separate and inter-agency system. In addition, the regional office also has its own website to provide services. Based on the above, the application of information system in Agam Regency entered into the second level. But to go to the third level of information systems integration or known as Government to Government (G2G), the implementation of e- Government on the first and second level should be implemented or implemented properly.

Integration of the system will rapidly reduce the cost, time, and resources needed to create results and simultaneously improve the quality, reliability, and affordability (Brosey, W.D, 2001). Integration of Information Systems aims to combine the previously separate information systems with the aim of an information resource that is more complete and thorough for an organization (Kent Sandoe, Gail Corbitt, 2001).

User resistance is one of the problems in an integrated information system. There might be internal individuals who are used to the old system and are reluctant to follow the changes (Kim and Kankanhalli, 2009).

Culture plays an important role in the views of individuals, many people resist change and adopt new technologies slowly and with great consideration (Feng, 2003)]. (Alshehri, Mohammed, Drew, 2010) identified that improving working relationships between internal

departments and external agencies, and adopting a corporate approach as the key to e-Government success.

Top management support refers to the commitment of top management to provide a positive environment that encourages participation in e-Government applications. Therefore, it plays an important role in the adoption and application of e-Government (Akbulut, 2003)].

Analysis of awareness, training and capacity building, which are the two dominant themes under the Human aspect, revealed that the lack of ICT skills in the public sector is a major challenge for e-government initiatives [11]. The challenge of e-Government is the lack of ICT skills. This is a particular problem in developing countries, where lack of qualified staff and inadequate human resource training has been a problem for many years (UNPA & ASPA, no date).

Many developing countries, even if they have the will, do not have the necessary infrastructure to immediately deploy e-Government services throughout their region (Yousef *et al.*, 2015). IT standards that mean specifications for hardware and software, to help people manage and use technology, a single integrated gateway model for e-Government adoption is expected to provide access to information and services that require public sector governments to share information, knowledge, participate positively, and collaborate to provide e-Government services (Naser, 2014).

Based on the explanation above we can conclude that the implementation of e-Government towards G2G has several challenges that must be considered by every local government that implement an integrated system between each OPD (Organization of the Region) who exchange information to provide quality information and good service. Allegedly there is a resistance, factor system users, organizational culture, management support, human resources and information technology and infrastructure that must be prepared before implementation of e-Government.

## **2. Methodology**

The research was conducted at the local government in Agam District. Data collection was conducted on May 29 - June 8, 2018. The population of this study is all employees at the local government OPD Agam District. The study was conducted by distributing questionnaires at 25 cantons in Agam District. Each one district office is given as many as 6 questionnaires related to the purpose of this research, where the questionnaire is addressed to the Chief of Staff, Head of Services, Head of Finance, Head of Information & Technology, and two service staff at the regional office with total questionnaires spread by 150 copies.

Sampling technique in this research is purposive sampling technique that is selected data based on certain criterion that appropriate with research purpose. The number of samples and questionnaires that can be collected in this study is 119 people from 25 regional offices consisting of 17 official offices, 5 bodies, and 3 districts that can be collected by researchers based on the permit given research.

This research applies Structural Equation Modeling (SEM) approach. This technique can be applied in several forms, first is the path analysis or causal modeling hypothesizing the causal relationship between variables. The second is confirmatory factor analysis that tests the hypotheses about the structure of factor loadings and their interrelations.

### 3. Results And Discussion

#### 3.1 Respondent's characteristic

Results of research on the characteristics of respondents in view of the gender of male respondents as many as 56 people and women as many as 63 people, meaning that in terms of female sex dominant in this research sample. Respondents based on employment status of civil servants amounted to 100 people and honorer amounted to 19 people, meaning the study sample is dominated by employees / employees who berstatus PNS. Respondents based on the highest education level in S1 and S2 graduate education qualifications amounted to 91 and 18 people, only 1 person who qualified education S3. The working period of most respondents in more than 10 years.

#### 3.2 Descriptive Analysis

The results of the questionnaire response frequency of respondents showed an average score of 1.9 the variable resistance with TCR of 37.32%. This shows the user resistance is not good which means there is no rejection of a system change.

The results of the questionnaire response frequency of respondents showed an average score of organizational culture variables is 4.1 with TCR of 83.38%. This shows the organizational culture is already quite good.

The results of the questionnaire response frequency of respondents showed an average score of 4.2 management support variable with 83.80% TCR. This shows that management support is good.

The result of answer frequency questionnaire from respondent showed average score of competence variable of human resources that is 3,9 with TCR equal to 78,99%. This shows the competence of human resources quite adequate.

The result of frequency questionnaire answers from respondent show average score of information technology variable that is 4,2 with TCR equal to 83,52%. This shows information technology is quite good.

Result of frequency answer questionnaire from respondent showed average score of e-Government variable that is 4,2 with TCR equal to 83,87%. This shows information technology is quite good.

The result of frequency questionnaire answer from respondent showed average score of e- Government variable that is 4.0 with TCR equal to 79,81%. This shows information technology is quite good

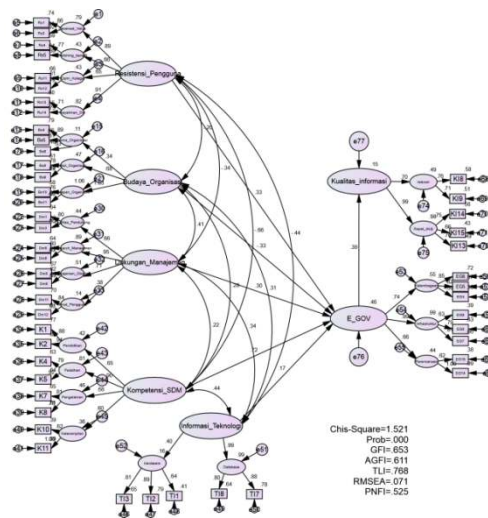
#### 3.3 Inductive Analysis

Referring to the literature review and conceptual framework, the empirical models developed by theory and in the estimation are two equations as follows:

$$Y_1 \text{ e-governemnt: } \beta_1 RP + \beta_2 BO + \beta_3 DM + \beta_4 SDM + \beta_5 TI + e_1 \quad (1)$$

$$Y_2 \text{ Information Quality: } \beta_1 \text{ e-Government} + e_2 \quad (2)$$

The following is an estimate of the complete model of the SEM equation:



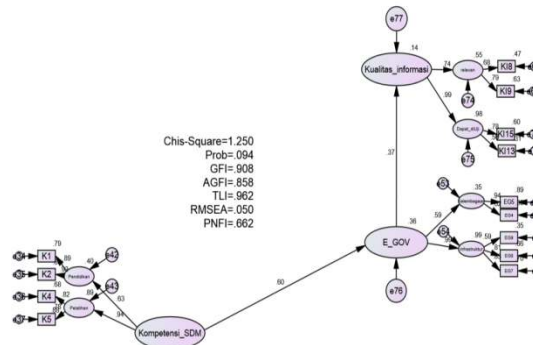
**Fig. 1. Full Model SEM**

**Table 1. Estimasi SEM**

Variabel	Estimate	C.R	Probability
User Resistance > e-Government	0.331	1.684	0.092
Organizational culture > e-Government	-0.332	1.724	0.085
Management Support > e-Government	0.301	1.879	0.060
Human Resources Competencies > e-Government	0.717	2.924	0.003
Information Technology > e-Government	0.174	1.149	0.251
e-Government > Information Quality	0.387	2.514	0.012
<b>God-of-fit</b>	<b>Result</b>	<b>Index</b>	
<b>Chi-Square</b>	<b>1.521</b>		
<b>Prob</b>	<b>0.000</b>	<b>&gt;0.05</b>	
<b>GFI</b>	<b>0.653</b>	<b>&gt;0.90</b>	

<b>AGFI</b>	<b>0.611</b>	<b>&gt;0.90</b>
<b>TLI</b>	<b>0.768</b>	<b>&gt;0.90</b>
<b>RMSEA</b>	<b>0.071</b>	<b>&lt;0.08</b>
<b>PNFI</b>	<b>0.521</b>	<b>0 -1.0</b>

This estimation result based on hypothetical equation model can not make final result because God-Of-Fit value has not been realized yet. So the model that has been determined to be modified model to get a model structure that achieve the normal distribution of data, no data outlier and fulfillment God-Of-Fit so that the results of this study can be explained well and unbiased. The estimation results can be seen in Figure 2



**Fig. 2.**Estimate Modifiacion Model

**Table 2.** Estimasi SEM

<b>Variabel</b>	<b>Estimate</b>	<b>C.R</b>	<b>Probability</b>
HR > e- Government	0.600	2.765	0.006
e- Government > Informasion Quality	0.371	2.302	0.042
<b>God-of-fit</b>	<b>Result</b>	<b>Index</b>	
<b>Chi-Square</b>	<b>1.250</b>		
<b>Prob</b>	<b>0.094</b>	<b>&gt;</b>	
<b>GFI</b>	<b>0.858</b>	<b>&gt;</b>	
<b>AGFI</b>	<b>0.962</b>	<b>0.90</b>	
<b>TLI</b>	<b>0.050</b>	<b>&gt;</b>	
<b>RMSEA</b>	<b>0.662</b>	<b>0.90</b>	
<b>PNFI</b>		<b>&gt;</b>	
		<b>0.90</b>	
		<b>&lt;</b>	
		<b>0.08</b>	
		<b>0</b>	<b>-</b>
		<b>1.0</b>	

The result of God-Of-Fit value estimation based on hypothetical equation model shows much better result with the achievement of predetermined God-Of-Fit index where; Value of Chi-Square = 1.250, prob> 0.094 with index> 0.05, GFI result = 0.908 with index> 0.90, and result of RMSEA 0,050 with index> 0.05 <0.08. so that with the absorption of six index criteria God-Of-Fit is the value (1) Chi-Square, (2) probability, (3) GFI, (4) TLI, (5) RMSEA, (6) PNFI. This means that the hypothesized equation model is appropriate and produces an unbiased research model. The new research model equations are:

$$Y_1 \text{ e-government: } \beta_4 \text{SDM} + e_1 \dots\dots\dots(3)$$

$$Y_2 \text{ Quality Information: } \beta_1 \text{ e-Government} + e_2(4)$$

### **3.4 The Influence of User Resistance Against Implementation of e-Government**

The results of this study are not in line with Hierchheim and Newman, (Hierchheim and Newman, 1988) who explain resistance is a reaction that contradicts the proposed change. Contradiction can be overtly expressed in the form of sabotage, or as quietly as running but grumbling or criticizing the new system. According to Markus (Markus, 1983) resistance is a reaction opposite to the changes perceived by the user on the implementation of new information systems. The results of this study also does not support (Siregar, 2005) study which says that the indicators that become the measure of user resistance can affect the application of new information systems.

### **3.5 The Influence of Organizational Culture to Implementation of e-Government**

The results of this study do not support (Naser, 2014)] which says Organizational Culture in companies or institutions widely believed to affect the performance of the organization and the successful implementation of information systems (IS). There is a statistically significant positive correlation between elements of organizational culture as (organizational values, organizational beliefs, organizational norms, and organizational expectations) and e-Management adoption. (L. Feng, 2003) also explained that culture plays an important role in the views of individuals, many people resist change and adopt new technologies slowly and with great consideration.

### **3.6 The Influence of Management Support to Implementation of e-Government**

The results of this study do not support the opinion of (Alshehri and Drew, 2010) which says leadership engagement, as well as the unified vision of IT, is essential for vertical e-Government planning, the acquisition of necessary resources, the motivation of officials, the support of agreements with partners and external stakeholders, to inter-agency and ministerial coordination.

### **3.7 The Influence of Human Resource Competence to Implementation of e-Government**

This research supports OECD (OECD, 2003) which says technical skills for the implementation, maintenance, design and installation of ICT infrastructure, as well as skills to use and manage online processes, functions and customers are mandatory. To address the issue of human resource development, knowledge management initiatives are needed focusing on staff training to create and develop basic skills for e-Government use.

### **3.8 The Influence of Information Technology to e- Implementation of Government**

The results of this study do not support (Ndou, 2004) which explains aspects of infrastructure that become the main challenge for e-Government e-Government. Unreliable IT infrastructure will further influence to degrade e-government performance from their respective governments (Ebrahim and Irani, 2005).

### **3.9 The Influence Implementation of e-Government to Information Quality**

The results of this study support the explanation (DeLLone and McLean, 2003) said the success of information systems to measure the output generated by the system. Furthermore, DeLone and McLean (DeLLone and McLean, 2003) said that the success of the model includes six components of the success of information systems namely, System Quality, Quality Information, Usability, User Satisfaction, Individuals, Organization. (Baltzan, 2012) revealed Information Integrity is a measure of the quality of information. Integrity constraints are rules that help Ensure information quality. Factors affecting the adoption of e-government websites are quality of information, system quality and service quality. Quality of information relates to the size of the information the system generates (Safeena and Kammani, 2013).

## **4. Conclusion**

Based on the results of research and discussion can be concluded that:

- There is no effect of user resistance to implementation of e-Government. User resistance in the district government is not good, which means there is no rejection of a system change. Respondents said that with changes to the information system will make the work to be effective, do not consider the complexity of change and the support of the organization in the change of information systems. User resistance is not a factor in the success of e-Government implementation in Agam District. This means that every employee in the district office Agam receive changes to the old information system to e-Government information system.
- There is no influence of organizational culture on the implementation of e-Government. Organizational culture in the district of religion is considered good to show the creation of a work culture such as the participation of employees in decision-making, employees exchange information and employees have responsibility for their work. Organizational culture is not a problem in the implementation of information systems because the organizational culture that has been built in OPD district religion is quite good.
- There is no effect of management support on implementation of e-Government. Management support such as management involvement is actively organized in the development of information systems. Management provides training for the use of new information systems and employees / employees show interest in system changes. It can be concluded that management support in every district office in Kabupaten Agam is good so it does not become a problem in the application of information system.
- In the second equation model that there is influence of human resource competence on the implementation of e-Government. Training in improving human resource competency is still sufficient including the training in accordance with the information system. Experience in the field of information systems is also still quite enough, as well as skills in providing public services based on IT is still quite enough. It can be concluded that human resource competence is one of the factors influencing e-Government application in agam district.
- There is no effect of information technology on the implementation of e-Government. Each regional office already has Hardware and softwere to implement information



systems and output devices in doing the work. Networks are already available in connecting multiple computers like good internet. It can be concluded that information technology is not one of the factors affecting the implementation of e-Government in the district of religion.

- In the second model the equation proves that there is influence of e-Government application to the quality of information. Each regional office has a form of decision, regulation or disgust about the implementation of information systems. Each regional office also has a good organizational structure to perform the functions and technical information systems. Each regional office has a supporting infrastructure and has an information system or application in serving the community. The better implementation of e-Government through good institutional and infrastructure will produce relevant and testable quality of information.

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