THE SUCCESS FACTORS OF E-GOVERNMENT IMPLEMENTATION IN INDONESIA

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ABSTRACT

E-Government offers the potential to dramatically increase access to information and services. It was from this that the Indonesian government began to seriously work on the implementation of e-government. This study aims to examine critical success factors in the implementation of e-government in the government to business sector which has not received much attention, especially in West Java, Indonesia. The results of Confirmatory Factors Analysis in this study indicate that 8 variables influence the success of e-government implementation in Indonesia.

Keywords: E-Government, Vision, Leadership, Top Management Support, Training, Organizational Culture, Awareness, Security, IT Infrastucture.

INTRODUCTION

In the era of revolution 4.0 as it is today, the implementation of e-government is a must that must be carried out by both central and regional governments in building sustainable relationships with the community. With the implementation of e-government, it is hoped that the government will be able to be closer to the community and easier to reach without the need for a lot of bureaucracy and also more transparent because all things can be accessed by the public. E-Government is a global phenomenon that occurs in developed and developing countries (Napitupulu, 2014). E-Government has enormous potential in terms of improving services and efficiency, better responsiveness to business and citizen needs, and provision of affordable government services (Ghayur, 2006). There are many definitions of e-government, including according to Heeks (2006) e-Government is the use of Information and Communication Technology (ICT) by public sector organizations. According to Heeks (2006), e-Government is an information system but it is different from ordinary information systems that target the private sector whose financial income is the orientation. The United Nations (UN) defines e-Government as the use of Information and Communication Technology (ICT) and its application by governments for the provision of information and public services to the community (Hafeez & Sher, 2006). E-Government is a permanent commitment made by the government to improve relations between the private and public sectors through the delivery of enhanced, cost-effective and efficient services, information, and knowledge (Chen et al., 2006).

The development and implementation of e-government bring impacts and changes to the structure and function of public administration (Snellen, 2000). In contrast to the traditional bureaucratic model in which information flows only vertically and rarely between departments, e-government links new technologies to legacy systems internally and, in turn, links government information infrastructure externally to everything digital (Tapscott, 1996).

E-Government offers the potential to dramatically increase access to information and services. E-Government makes it easier for citizens to participate and contribute to governance issues (Chen et al., 2006). It was from this that the Indonesian government began to seriously work.

The implementation of e-government. The government itself already has a strategy in implementing an e-government system, namely; Develop a service system that is reliable and can be reached by the wider community utilizing an even distribution of communication networks throughout Indonesia, Organizing systems and work processes of the government and autonomous government holistically by preparing human resources who are familiar with technology, Utilizing information and communication technology optimally with how to provide complete information, increase the participation of the business world and develop the telecommunications and information technology industry, and carry out systematic development through realistic and measurable stages, namely through the stages of preparation, maturation, stabilization, and utilization (Narriswari, 2018). The e-government system can support government performance in the fields of government to business, government to citizen, government to government, and government to employees. The forms of using e-government are e-budgeting, e-procurement, e-audit, e-catalog, e-payment, e-controlling.

Several regions in Indonesia themselves have utilized the implementation of e-government quite well, one of which is the province of West Java. West Java Province cooperates with Regional Banks and also e-commerce to facilitate entrepreneurs and the public in accessing local tax payments. The implementation of e-government is expected to be able to attract public interest in participating in the development of the West Java region so that it can become a partner of the government in improving regional development.

In recent years, this nascent e-government phenomenon has attracted the interest of researchers from various disciplines. Some researchers found several failures in the implementation of e-government. According to Heeks (2006) in developing countries, 35% of e-government projects fail miserably, 50% fail partially, and only 15% are successful. These different initiatives have shown different critical factors for e-government implementation (Altameem et al., 2006). Many factors affect the implementation of e-government, some researchers recommend critical success factors in the implementation of e-government including (Al-Azri et al., 2010; Al-Abri et al., 2019; Altameem, 2007; Badpa & Bakhshayesh, 2015; Keramati et al., 2011; Napitupulu, 2014). This study aims to examine the critical success factor dal am implementation of e-government in the field of government to business that has not received much attention, especially in West Java, Indonesia

LITERATURE REVIEW

Critical Success Factor (CSF)

Achievement of organizational goals related to the CSF. It is important to identify the CSF so that the organization can achieve its goals and achieve the expected results (Al-Abri et al., 2019). CSFs are some of the key areas where things have to go right for the business to thrive and to achieve management goals. Critical success factors (CSF) is a factor that, when focused and satisfied, will allow organizations to compete (Bullen & Rockart, 1981). CSF (Critical Success Factors) defines some areas where satisfactory results will ensure successful competitive performance for an individual, department, or organization. Thus, any activity or initiative undertaken by the organization must ensure consistently high performance in these key areas; otherwise, the organization may not be able to achieve its objectives and consequently may fail to achieve its mission. In other words, CSF can make the difference between success and failure for an organization (Napitupulu, 2014). Rockart (1980) & Napitupulu (2014) say that although CSFs differ from company to company, they coalesce into four distinct CSFs as (generic) models across the industry: 1. Service (Actual and Perceived), 2. Communication (Top management and key users), 3. Human Resources (Quality, Incentives, and Retention) and 4. SI repositioning (End-user computing, Involvement in key area product lines, Telecommunications inclusion, single information function, and Staff Organizational Structure). Based on the explanation above, the concept and approach of CSF are still strong today and applies to many challenges in Information Systems (IS) including e-Government, because e-Government is an Information System (Gil-Garcia & Martinez-Moyano, 2007).

E-Government

E-Government refers to the use of information technology by government agencies (such as Wide Area Networks, the Internet, and mobile computing) that have can transform relationships with citizens, businesses, and with other government partners (Al-Rashidi, 2010). Norris et al. (2001) describe e-government as "the delivery of services and information, electronically, to businesses and citizens, twenty-four hours a day, seven days a week. The definition of e-government according to Curtin et al. (2003) is the use of any forms of information and communication technology (ICT) by governments and their agencies to improve operations, delivery of public information and services, citizen engagement, public participation, and governance processes According to Beynon-Davies (2007) e-government is seen as leveraging process change among government administration with significant potential for performance improvement in the public sector. The definition also includes consideration of interactions with external agencies particularly through the use of ICTs to enable and enhance democratic participation. Government to Business concerns the electronic empowerment of the relationship between government agencies and the private sector. One major form of relationship is supply chain management. Therefore, many of these supply chain problems are considered similar to e-business problems in this area. However, many features of the public sector procurement context shape the relevance of technology solutions in this area (**NAO), 2004.**

RESEARCH METHODOLOGY

This type of research is quantitative explanative. A quantitative approach is a research approach that uses data in the form of numbers from survey answers that are distributed to the

research sample and analyzed using statistical analysis techniques. Explanatory research is research that intends to explain the position of the variables studied and the relationship between one variable and another.

The population in this study is the head of the department and the head of the field within the scope of the West Java Regional Government. Data was collected through a survey that was sent via email to respondents. Data collection was carried out from January to October 2020 and 119 survey results were obtained, but not all of them were complete. The survey results are complete and can be processed as much as 98 data.

Confirmatory Factor Analysis (CFA) or factor analysis is used to test the dimensions of a theoretical construct and is often called testing the validity of a theoretical construct (**Ghozali**, 2014). In general, before conducting structural model analysis, researchers must first measure the model to test the validity of the constructor indicators or latent variables using CFA. In this study, the first-order CFA model is used, wherein the first-order CFA model the indicators are implemented in items that directly measure the construct. Testing using CFA, the indicator is said to be valid if the loading factor is 0.70. In research that has not been established, the loading factor 0.50 - 0.60 can still be tolerated.

Measurement

The results of research conducted by Al-Abri et al. (2019) obtained 8 critical success factors that has most significant influence to the implementation of e-government, namely: vision, leadership, top management support, and commitment, training, organizational culture, awareness, security and IT infrastructure. Therefore, in this study the author will use the 8 CSFs above to check whether the implementation of e-government in West Java is successful or not (Table 1).

Table 1
OPERATIONALIZATION OF VARIABLES

| Variable	Concept	Indicator
Vision	Roadmap for implementing E-government initiatives (A. Altameem, 2007; T. Altameem et al., 2006)	1. Our organization has a comprehensive and clear vision in the implementation of e-government 2. Our organizational vision effectively supports employee commitment in e-government implementation Our organizational vision is well understood by employees in terms of e-government
Leadership	A strong leadership style provides security and transparency for the implementation team (Al-Azri et al., 2010; A. Altameem, 2007; T. Altameem et al., 2006)	1. Committed leadership in e-government implementation 2. E-government is a priority for leadership Active leadership to mobilize human resources for e-government
Top management support	Support and commitment from senior management very important for provide and allocate sufficient resources and to speed up the process (T. Altameem et al.,	1. Top management encourages and participates in e-government implementation 2. There is direct interaction between top management and others

	2006)	Top management is committed and shares long-term policies with others
Training	Learning is a focal element of current and future e-government initiatives (T. Altameem et al., 2006)	1. Our organization provides regular training sessions 2. Resources for Education and training are in place Education and training are encouraged and supported
Organizational Culture	Organizational culture is a shared understanding of how an organization works, and has a major impact and influence on successful change initiatives (T. Altameem et al., 2006)	1. Our organization has a culture of sharing that enables high productivity and performance 2. Our organization recognizes corporate culture as an important measure to determine e-government implementation capabilities Our organizational culture is a culture of innovation
Awareness	Awareness in e-government refers to the communication of e-government initiatives to appropriate stakeholders and providing the means for individuals to realize the projected benefits of e-government (T. Altameem et al., 2006)	1. There are regular seminars and conferences on e-government 2. Resources available for conferences and workshops Awareness of e-government policies used sustainably
Security	One of the important factors in implementing e-government is securing government information from unauthorized access (T. Altameem et al., 2006)	1. Our organization treats information and transaction security as an important requirement 2. There are a number of protocols such as Public Key Infrastructure (PKI) and electronic signatures Online transactions and security are monitored regularly
IT Infrastucture	An IT infrastructure that is able to support and enable the implementation of e-government is a prerequisite for the successful implementation of e-government (T. Altameem et al., 2006)	1. IT infrastructure ready for e-government initiatives 2. IT infrastructure accommodates integration with e-government requirements IT infrastructure is regularly upgraded

RESULT AND DISCUSSION

Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) is used to test the validity and reliability of unidimensional construct measurement models that can not be measured directly. CFA has 2 main objectives, namely measuring indicators that are conceptualized in a unidimensional, precise, and consistent manner as well as the dominant indicators forming the construct studied.

For this reason, the researcher conducted a test by checking whether the t-value and standardized loading factors (λ) of each observed variable had met the criteria for good validity, namely the t-value 1.96 and the standardized loading factors (SLF) value 0.50 (Wijanto, 2008). As for the reliability analysis, the researchers used composite reliability (CR) 0.70 and variance extracted (VE) 0.50 (Figure 1).
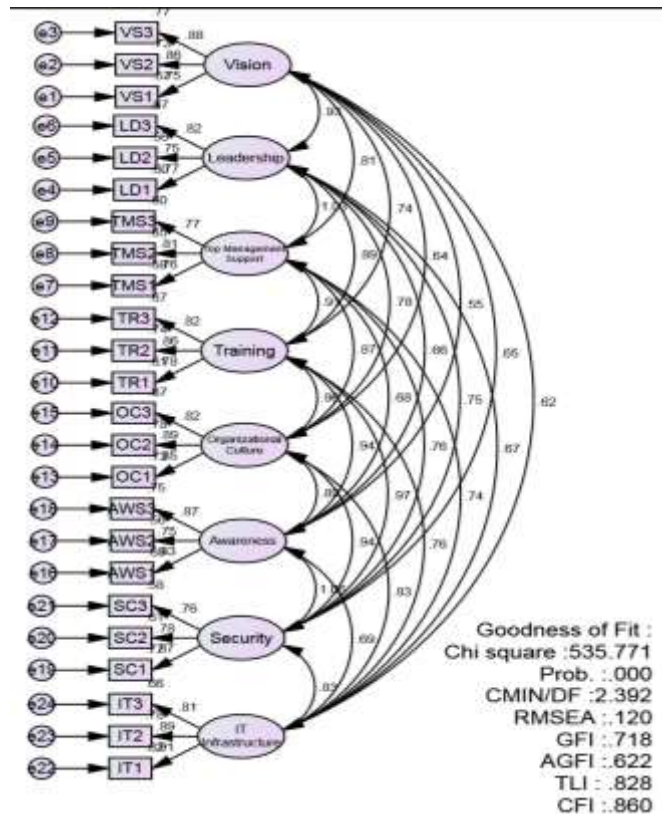
FIGURE 1
INITIAL CFA MODEL

Testing the measurement model is done to see how the indicators can represent the latent variables in the research model that has been made previously which is assessed using validity and good performance. Validity was tested using convergent validity and discriminant validity, while reliability was measured using composite reliability and Cronbach's alpha. A convergent validity test is used to determine whether the construct (indicator) has a high proportion of variance or not. A discriminant validity test is used to find out how far an indicator (construct) is different from other indicators (construct). In this study, the test is done by loading factor and AVE using AMOS 22. To indicate an item has convergent validity, then the value of the loading factor is at least 0, 5. The results of data processing show that the outer loading of all indicators in the questionnaire is more than 0.5, so it can be said to be valid. Meanwhile, based on Average Variance Extracted (AVE) it can be seen that all latent variables have a value > 0.5 so it is said to be valid.

Test Reliability (reliability) is to show the extent to which a measuring instrument that can provide relatively the same results when measured again on the same subject. Good performance test in SEM can be obtained through the following formula (Hair et al., 1998).

$$\text{Construct–Reability} = (\textstyle\sum \text{std loading })^2$$

$$(\textstyle\sum\text{std loading })^{2+}\sum \epsilon j$$

Information

1. Standard loading is obtained from standardized loading for each indicator obtained from the results of computer calculations.
2. $\Sigma\ \epsilon j$ is the measurement error of each indicator, measurement error can be obtained from 1 the good performance indicators, a good level of performance that is acceptable is $\geq 0{,}60$.

The reliability testing result of the eight variables are listed in Table 2 below.

Table 2
RELIABILITY TESTING RESULT

Variables	Construct Reliability	Threshold	Reliability Result
Vision	0.717	0.60	Reliable
Leadership	0.770	0.60	Reliable
Top Management Support	0.779	0.60	Reliable
Training	0.763	0.60	Reliable
Organizational Culture	0.748	0.60	Reliable
Awareness	0.759	0.60	Reliable
Security	0.763	0.60	Reliable
IT Infrastructure	0.736	0.60	Reliable

From Table 2 it can be seen that all variables have construct reliability value greater than 0.60 so it can be concluded that all indicators of each variables are reliable to measure the corresponding variables.

Model Fit Test

Results of testing the suitability of the model in the confirmatory factor analysis are presented in Table 3 below:

Table 3
CRITERIA FOR GOODNESS OF FIT FINAL MODEL CFA RESULTS

No.	Goodness of Fit Index	Cut off Value	Analysis Result	Model Evaluation
1	$X2 - Chi\ Square$	As small as possible	535.771	Marginal Fit
2	Probability	≥ 0.05	0.000	Not Fit
3	CMIN/DF	≤ 2.0	2.392	Not Fit
4	RMSEA	≤ 0.08	0.120	Not Fit
5	GFI	Approaching 1	0.718	Not Fit
6	AGFI	Approaching 1	0.622	Not Fit
8	TLI	Approaching 1	0.828	Marginal Fit

9	CFI	Approaching 1	0.860	Marginal Fit

Source: Primary data processed, 2021

Based on the table above shows that from the initial analysis the resulting model is not fit. This can be seen from the RMSEA, CFI, GFI, IFI, TLI, and P-Value values that are not yet under the expected criteria or size. Therefore, the next step is to conduct a confirmatory factor analysis (CFA) analysis to find the best model. The results of the analysis of model adjustments can be seen in the Figure 2 below.
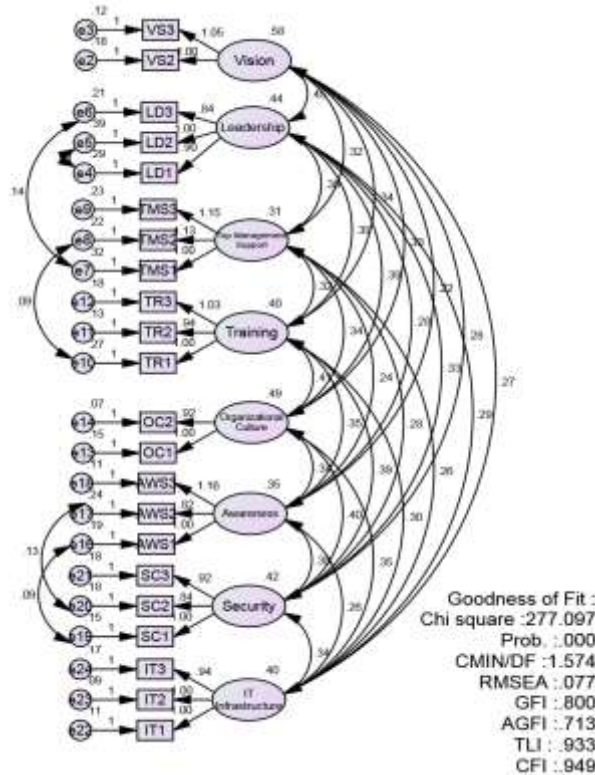
FIGURE 2
CFA TEST RESULTS AFTER MODIFICATION

The results of measuring the Goodness of fit criteria for the final model of the CFA results are as presented in the following Table 4:

Table 4
CRITERIA FOR GOODNESS OF FIT MODIFIED FINAL MODEL CFA RESULTS

No.	Goodness of Fit Index	Cut off Value	Analysis Result	Model Evaluation
1	X2 – Chi Square	As small as possible	277.097	Good Fit
3	CMIN/DF	≤2.0	1.574	Good Fit

4	RMSEA	≤0.08	0.077	Good Fit
5	GFI	Approaching 1	0.800	Marginal Fit
6	AGFI	Approaching 1	0.713	Marginal Fit
8	TLI	Approaching 1	0.933	Good Fit
9	CFI	Approaching 1	0.949	Good Fit

Source: primary data analysis (2021)

The Table 4 above shows that the planned model fits well because after testing the compatibility of the CMIN / DF, GFI, AGFI, RMSEA, TLI, and CFI values is good. So it can be concluded that the modification test results are better than the initial model.

The results of the above data processing show that all the values of the variables are good so they can be used as critical success factors in determining the success of e-government implementation.

Covariances Test

Based on the results of the Covariances Test on Confirmatory Factor Analysis (CFA) it can be seen that all the factors have a significant relationship between factors that one other factor because it has a probability value which is under alpha of 5% (0,05).

Table 5
COVARIANCES TEST

			Estimate	S.E.	C.R.	P
Vision	<-->	Leadership	0.454	0.088	5.135	***
Vision	<-->	Top Management Support	0.317	0.069	4.568	***
Vision	<-->	Training	0.335	0.072	4.645	***
Vision	<-->	Organizational Culture	0.295	0.071	4.158	***
Vision	<-->	Awareness	0.221	0.059	3.722	***
Vision	<-->	Security	0.278	0.066	4.194	***
Vision	<-->	IT Infrastructure	0.271	0.064	4.230	***
Leadership	<-->	Top Management Support	0.382	0.078	4.919	***
Leadership	<-->	Training	0.392	0.078	5.020	***
Leadership	<-->	Organizational Culture	0.389	0.078	4.997	***
Leadership	<-->	Awareness	0.284	0.063	4.480	***
Leadership	<-->	Security	0.334	0.070	4.789	***
Leadership	<-->	IT Infrastructure	0.294	0.065	4.539	***
Top Management Support	<-->	Training	0.318	0.066	4.810	***
Top Management Support	<-->	Organizational Culture	0.336	0.068	4.940	***
Top Management Support	<-->	Awareness	0.235	0.054	4.378	***
Top Management Support	<-->	Security	0.277	0.059	4.657	***
Top Management Support	<-->	IT Infrastructure	0.260	0.056	4.607	***
Training	<-->	Organizational Culture	0.406	0.075	5.412	***
Training	<-->	Awareness	0.353	0.067	5.292	***
Training	<-->	Security	0.391	0.071	5.502	***
Training	<-->	IT Infrastructure	0.302	0.061	4.935	***
Organizational Culture	<-->	Awareness	0.340	0.065	5.215	***

Organizational Culture	<-->	Security	0.401	0.071	5.612	***
Organizational Culture	<-->	IT Infrastructure	0.353	0.066	5.352	***
Awareness	<-->	Security	0.377	0.072	5.230	***
Awareness	<-->	IT Infrastructure	0.264	0.055	4.815	***
Security	<-->	IT Infrastructure	0.339	0.062	5.455	***

CONCLUSION

This study found that Vision, Leadership, Top Management Support, Training, Organizational Culture, Awareness, Security, and IT Infrastructure are critical success factors of e-government implementation. This study proposes an integrated e-government implementation model consisting of eight variables: Vision, Leadership, Top Management Support, Training, Organizational Culture, Awareness, Security, and IT Infrastructure as well as 24 indicators to measure the variables. This study provides implications in measuring CSF e-government implementation with a comprehensive framework, especially in terms of the urgency of technology that is closely related to governance. Future research can add other test variables that have not been explored by this study. Future research is expected to increase the sample size for generalization to be able to map CSF e-government implementation as a whole.

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