



E-Government Global Trends and Future Perspective in Indonesia

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ARTICLE INFO

Article history:

Received 2 October 2020

Received in revised form 7

November 2020

Accepted 27 November 2020

ABSTRACT

E-government has been a global trend in the world. Many countries around the world have implemented E-government since it is believed could give substantial benefits to citizens, businesses, and governments. The aim of E-government is to support the modernization of the public sectors, enabling its transparency and effectiveness. With regard to these significant outcomes, E-government could streamline the economic and social development of a nation, including developing countries like Indonesia. This paper aimed to review the literature on E-government implementation and its future perspective in Indonesia. The inclusion criteria were E-government trends around the world, application of E-government in Indonesia, and the factors and impact of E-government. This study revealed the critical factors that could affect the implementation of E-government in Indonesia. In addition, E-government has the potential to increase transparency, citizen engagement, and gross domestic product (GDP) growth in Indonesia.

Keyword:

Indonesia, Corruption,

Citizen Engagement, E-

Government, GDP Growth

INTRODUCTION

The modernization of public services offered through the internet has been promoted by the development of information and communication technologies (ICTs). In the bureaucratic system, it is important to make use of the internet as a sign of innovation and flexibility. The important position of public services leads the government to implement technology and information system to serve the citizens or businesses

effectively and efficiently (Meftah et al., 2015). The adoption of ICTs in public services later known as electronic government or E-government. The main rationale behind the implementation of E-government is to change and innovate the relationship between bureaucracies and citizens (Pina et al., 2010). E-government is basically the usage of technology devices such as computers and the internet in public services to serve citizens in a

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<https://doi.org/10.21831/jnp.v8i2.34855>

country. It is becoming popular due to its ability in offering direct and more convenient access for citizens. Further, digital interactions will make the bureaucratic processes to be more transparent and faster than the conventional way. It is believed that E-government could reduce the cost of public services while increasing the public service quality itself. Although it has many advantages, it is important to evaluate the past studies on E-government implementation in order to get a better understanding before implementing it in a country. This is because a successful implementation method in a country might not yield the same results and it might even lead to failure.

Prior to 2005, the traditional way public services were still being used by most regions in Indonesia (Aritonang, 2018). As of June 2014, there were 542 local governments, comprising 34 provinces, 415 regencies, and 93 cities that were already using E-government as the platform of public services (Directorate General for Regional Autonomy, 2015). However, most local governments in Indonesia are still at the lowest stages of E-government development (Suhardi et al., 2015; Sofia & Hussein, 2013). The failures of E-government in developing countries like Indonesia could be affected by several factors, such as the standard and the treatment of maturity level (Choi et al., 2016). Moreover, approximately 60%-80% of the implementation of E-government in developing countries was unsuccessful, represented by partial or total failures (Mates et al., 2013).

The poor outcomes of E-government implementation might be caused by various reasons such as the poor infrastructure of the country or the citizens are not even ready for the implementation of the E-government. However, if it is done in a proper way, E-government could be implemented successfully and could also

give substantial advantages for both government and citizens. Motivated by the success and failure of the E-government implementation in other developing countries, this study aimed to give a better understanding of why and how Indonesia should implement E-government in public administration appropriately by a brief review of the literature on the implementation of E-government in other developing countries. From the literature review, it can be constructed the future perspectives of E-government in Indonesia, especially the critical factors and impact of E-government. This study is important as a thorough perspective of E-government implementation to increase the possibility of successful implementation in Indonesia.

METHODS

A thorough literature review approach was initially developed by figuring out all potentially relevant keywords related to E-government, then organizing them into specific phrases, and subsequently combined the important specific phrases. Widely used bibliographic databases in Public Administration such as the Public Administration Abstracts, ABI/INFORM Collection, Academic Search Complete, Business Source Complete, EconLit, Emerald, JSTORE, and Springer Link were used to search and select the related literature in this study. For the review, the inclusion criteria of the selected literature were: E-government trends around the world; application of E-government in Indonesia; E-government in developing countries and/or developed countries the factors affecting the implementation of E-government; the impact of E-government on the growth of a country. The articles collected in this study were limited to peer-reviewed articles in reputable journals and conferences without restrictions regarding language. However, only articles that were published from 2010 until 2020 were taken for further screening. After careful

screening, a total of 115 articles were obtained and reviewed. Eventually, there were 31 articles that met the inclusion criteria that have been determined previously.

RESULT AND DISCUSSIONS

The results and analysis of this paper led to a summary of factors that influencing the implementation of E-government in developing countries, especially Indonesia. After a careful analysis done by reviewing more than a hundred papers about E-government, the authors come up with a suggestion that the E-government in public administration should be implemented with regard to the substantial benefits offered. The impact offered by E-government will change the major activities done between government and citizens. Then, these major changes are expected to lead to a more effective and efficient government.

The factors that influence E-government are debatable, whether both the developed and developing countries could have similar methods and strategies in terms of implementation. There were some countries implementing E-government using the method that is preferred for a developed country, some were successful but mostly ended up with partial or total failures. This might happens due to the maturity stages of each country when implementing E-government. Each country has differences in situation, infrastructure, and technology, which can be named as a maturity level. This different maturity level drives a country to have its own strategies and methods in implementing E-government. It can be said that to be able to succeed, a country must search for another country with a similar maturity level that has been implementing the E-government to conduct a study and establish a benchmark.

The main reason for E-government has been implemented in many countries is because of the advantageous value offered.

E-government could establish effectiveness and efficiency in terms of reducing corruption, enhance citizens' engagement, and improve GDP growth. Most studies and researches reviewed were simultaneously in agreement that E-government is believed to give substantial benefits to both citizens and the government. Transparency of online platforms in public administration will reduce corruption and malpractice in doing the work. The citizens can be more attracted and adhere to a more advanced world. At last, the government can create a more productive and competitive atmosphere in the country by spreading policies and information rapidly using an online platform.

Factors Affecting E-Government in Developing Countries, Indonesia

The implementation of E-government in developing countries, especially Indonesia, needs to consider the proper standards. Mates et al. (2013) revealed that 60% up to 80% of the implementation of E-government in developing countries failed, either partially or totally. The triumph of E-government implementation must be equipped with the right planning and process. Most of the literature provided rich information on how to start implementing E-government appropriately. Developed countries could start implementing E-government easily by using proper research data. Unfortunately, it is not the case for the developing countries since they could not imitate a similar strategy because the situations in developing countries might be totally different compared to the situations in developed countries. The developing countries might not have similar maturity levels such as the required infrastructure that the developed countries used to implement E-government. In addition, there is very limited information about how to start implementing E-government in developing countries.

Generally, developing countries deal with many challenges in the implementation because they have a poorer context than developed countries (Choi et al., 2016). Moreover, there is a significant difference between these two groups of countries, and different strategies should be practiced based on their maturity level. There are three important factors in implementing the E-government system in developing countries, namely: (a) different stages of maturity; (b) citizens' awareness; and (c) proper assessment.

Different Stages of Maturity

Different stages of E-government maturity influence the success factors of E-government implementation. The identification of success factors across all maturity levels can be categorized into six categories including external environment, technology, employees, citizens, organization, and management (Lee, 2010). The synthesis made by Lee regarding the E-government development model (2010) discovered that organization and technology were identified as low-level success factors. A past study in Pakistan evaluated the relationship between digitization success factors and stages of E-government maturity by using Lee's synthesized development model found that the success factors in all maturity stages are the organization, technology, employees, external environment, and citizen management. In fact, organization and technology were found in low-stages of maturity, whereas management was found in high-stage of maturity (Muller & Skau, 2015).

Meanwhile, high-level success factors can be identified by the management category. Thus, as a developing country, Indonesia should focus on low maturity first before focusing on higher maturity levels. Indonesian practitioners should focus and give careful attention to implementing basic technology prior to the services process at a higher maturity level

(Muller & Skau, 2015). This is to make sure that Indonesia has a proper foundation to progress further to the next maturity level.

The maturity level of a country has a big impact on the success of E-government implementation. Therefore, the expert and practitioners should conduct thorough researches about at which stage of the maturity level Indonesia is before moving forward to implementing the E-government. The implementation of E-government in Indonesia can be implemented directly by applying low-level success factors for the first time. Then, the higher-level success factors could be applied as time goes by. By gradually implementing E-government could increase the possibility of successful implementation since the country could evaluate and review the performance before moving to the next stage. However, this process will be costly and requires a long period of time because the implementation is done gradually from the low maturity level until the higher maturity level is achieved.

Citizens' Awareness

Citizens' awareness is an important aspect to ensure the citizens utilize E-government services to perform a transaction or getting accurate and actual information. In addition, information quality, service quality, perceived ease of use, and transaction are significant variables influencing citizen's intention to perform a transaction with E-government (Rehman et al., 2011). Thus, up-to-date information in a reliable platform that is user-friendly to the users would be very beneficial in increasing citizens' engagement of e-government.

Al-Shboul et al. (2014) identified lack of awareness and low participation of citizens have become one of the most significant challenges and factors. Indeed, the awareness of participating in E-government services is a potential factor for a country to be successful in E-government

implementation. If the citizens are not aware of the E-government service platforms, the conventional transaction process such as citizens need to come to the government office for all businesses they do will continue to happen. The conventional transaction process will reduce productivity and fewer citizens can be served by the government officials. In the end, the E-government services will remain untouched by the citizens.

Citizens' awareness has a strong relationship with culture, trust, and adoption of E-government in the country (Meftah et al., 2015). In a developing country like Indonesia, the critical mass of users could be obtained by raising awareness campaigns of E-government services that focus on citizens aged 18-39 years (Lallmahomed et al., 2016). This is because young adults are more open to digital technology improvement. Moreover, young adults are busy with either school or work so that they do not have enough time to go through the whole conventional transaction process in government offices. Logically, the young adults will accept the introduction of an online platform for the transaction process since it will save their time and effort.

In addition, the existence of intermediaries can improve the adoption and diffusion of E-government in a country (Weerakkody et al., 2013). A past study used the comprehensive unified theory of acceptance and use of technology (UTAUT) model to measure the trust in the intermediaries and internet. The study found that performance expectancy, effort expectancy, and trust of intermediaries showed a significantly positive relationship with each other. In addition, the facilitating conditions affected the usage behavior which proving that the intermediaries can influence the adoption of E-government services (Weerakkody et al., 2013). This is because the intermediaries can help the citizens who were initially not aware of or

not used to the usage of the E-government platform, especially for the early adoption of the E-government platform.

Based on the results of the implementation of E-government in other developing countries, we can say that the implementation of technology in Indonesia must be first done before implementing the electronic government. The success of E-government completely depends on the infrastructure level of a country, especially the infrastructure of the ICTs. It is a good start for Indonesia to implement the E-government in some areas that have a good condition of infrastructure like in the big metropolitan cities first since not all of the regions in Indonesia have an advanced infrastructure due to the geographical conditions and other various reasons.

Proper Assessment

A proper assessment could really help Indonesia to identify the level of success of E-government implementation. The method of assessing also helps developing countries including Indonesia to have a better identification of problems and control the appropriate responses to achieve the goals of implementing E-government (Choi, 2016). This method must be able to analyze what steps and what standards should be taken regarding the implementation. As a developing country, Indonesia should have its own strategies and techniques in attempting E-government services due to the different situations among countries. A successful implementation method in other developing countries might not work in Indonesia.

The proper assessment could be created by researching various information such as information technology, human resources, and the maturity level of a country before implementing E-government. In this assessment research, the aspects that influence the success of E-government should be analyzed and be implemented first. Therefore, the success

of online public administration or E-government can be implemented easily. As for the validation for the assessment of the implementation, the critical success factors (CSFs) items using a survey in accordance with an expert judgment can be used. The validated items of CSFs constructed by Napitupulu et al. (2018) include the participation of user & stakeholder, project plan, system accessibility, and regular training to use the electronic platforms. These items should be adopted by government institutions of Indonesia to support the implementation of E-government since more than 80% of items in the constructed CSFs had very good content validity and internal validity (Napitupulu et al., 2018). In line with these findings, a related past study in Jordan reported that organizational impact use, individual impact, information system use, system quality, information quality, and user satisfaction are the six variables for the success of the E-service that the government offered to users (Kanaan et al., 2016). Whereas, the economic, sociocultural, organizational, and technological aspects are considered as the important CSFs in Eastern European countries like Poland (Ziemba et al., 2016). The reflection of CSFs includes the ICT access, technical demonstration, and economic accessibilities of ICT, ICT competencies, and awareness. Therefore, the implementation of the E-government will most likely to fail if the infrastructure of the ICT in the country is not properly established.

A holistic framework determination can also be used to ensure the success of the E-government project implementation in a country. This framework could synthesize factors that include awareness, trust, political desire, collaboration, resistance to change, fund and cost, privacy and security, technical skills, management skills, vision and strategies, and

willingness and ability to use (Al-Rashidi, 2010). The holistic framework is important for the assessment because the success of the E-government project depends on government officials, technology, and organization as a whole system that influences one another.

Accordingly, organizational power, politics, and educations can also be the failure factors in the implementation of E-government (Anthopoulos et al., 2015). If the private organizations do not comply with the government institutions, it will create an obstacle for the implementation since it is required the support of all related parties to ensure success. Cost of implementation and perceived political views will also affect the adoption of E-government projects in a country. Lastly, the educational levels of the citizens will really give a significant impact on the success of the implementation due to the required knowledge in using technology to access the E-government services. Basically, the resistance to change from within the organization, technical barriers, and lack of ICT training for employees can lead to failures of the E-government projects (Al-Rashidi, 2010). Resistance to change is strongly associated with the trust that comes from the performance expectancy and perceived value by the citizens (Lallmahomed et al., 2017). Furthermore, the lack of computer self-efficacy and negative behavioral intention will increase the resistance to change.

Similarly, a past study by Alenezi et al. (2017) showed that strategic benefits, institutional values, and information quality could increase the performance of the E-government, whereas customer satisfaction and cost-saving could improve the performance of the organization. The empowerment of customers can be categorized as a key factor in determining the success of E-government (Alshibly & Chiong, 2015). It is evident that the inadequate ICT infrastructure, poor

internet connectivity, low participation of citizens, low government funding, and lack of awareness level greatly increase the challenges of using E-government platforms (Otieno & Omwenga, 2015).

Impact of E-Government

The implementation of E-government could give substantial benefits to citizens, businesses, and governments. Transparency and effectiveness are two main purposes supported by the modernization of public services, E-government. As a developing country, Indonesia needs to transform the way public service operates by making more and better use of information and communication technology in order to increase the efficiency and effectiveness of government services (Gustova, 2017).

E-government helps its users to have a better transaction activity between citizens and the government. Moreover, Citizens are able to see the actual and up-to-date performance of the government, so this activity could increase the transparency of work done by the government. Table 1 summarizes past literature on the impact of the implementation of E-government. From the table, we can conclude that the E-government has positive impacts on reducing corruption consistently, enhancing the effectiveness of internal and managerial control (Shim & Eom, 2008), and trigger high gross domestic products (GDP) per capita in a country (Majeed & Malik, 2017). The current paper reveals some impacts that could be considered for the implementation of E-government in Indonesia, such as reducing corruption, citizen engagement, and GDP growth.

Reducing Corruption

A past study by Shim & Eom (2008) revealed that E-government reduces corruption consistently by analyzing national-level data, Corruption Perception Index (CPI), and e-participation indicator of the United Nations (UN). By enhancing the managerial control and internal

effectiveness, E-government significantly controls corrupt behaviors. E-participation and citizens' engagement also curb corruption by developing transparency and accountability in government.

Conceptualizing the negative influence of corruption in the body of the national stakeholder service system and national institutions using various theories such as the agency theory, the theory of X-inefficiency, the rent-seeking theory, the control theory, and trust in institutions could assess the maturity of the E-government in a country (Khan & Krishnan, 2019). E-government maturity is influenced by the level of corruption in the national institutions of a country. The corruption of legal, political, and media institutions could obstruct the maturity of E-government. Similarly, the corruption in the businesses and citizens who are considered as the national stakeholders will further obstruct the maturity level of E-government implementation (Khan & Krishnan, 2019).

The implementation of technology in public administration will ease the system of serving citizens and follow the globalization era. E-government will give substantial benefits for both citizens and the government. The citizens will get easier access through an online platform. Meanwhile, the government will have an easier job to control the services, so corruption can be controlled and reduced appropriately. In India, the online public grievance redressal system (OPGRS) could give a more transparent government and reduce corruption (Rana et al., 201). Ultimately, the maturity level of E-government contributes to the control of corruption. Further, national culture moderates the anti-corruption effect of E-government. National cultures have unequal power distribution and uncertainty avoidance has a decreased anti-corruption effect on E-government (Nam, 2018).

Table 1. Previous Findings: Impact of E-Government in Developing Countries

No.	Study	Results
1.	Nam, 2019	E-government enhanced government effectiveness but failed to raise the efficiency of government. Various impact of efficiency and effectiveness of e-gov were affected by political, economic, and cultural disparities across countries. Non-democratic countries have a well-performing government's efficiency.
2.	Ali et al., 2018	Digital economy positively impacted the E-government development. Certain national cultural characteristics have significant effects on the digital economy and E-government development along with economic, social, technological, political, and demographic factors.
3.	Majeed & Malik, 2017	E-government is an important tool that drives the economic growth of a country. Implementation of E-government causes high per capita GDP.
4.	Nam, 2018	The maturity of e-gov contributes to control corruption, and national culture moderates the anti-corruption effect of E-government. National cultures have unequal power distribution and uncertainty avoidance has a decreased anti-corruption effect on e-gov.
5.	Majeed & Malik, 2016	The growth impact of E-government is positive and significant while the direct growth impact of financial development turns out to be insignificant. The positive impact of financial development is explained through the implementation of e-gov as an interactive term. Significant results in all regressions of financial development and implementation of E-government.
6.	Gustova, 2017	Positive significant effect of e-gov implementation on GDP growth and several social indices, such as rule of law, political stability, and health index with a significant decrease in mortality rate at the same time.
7.	Shim & Eom, 2013	The e-gov has a constructive impact on lowering corruption consistently. Enhance the effectiveness of managerial and internal control of e-gov to control corruption Enhance accountability of e-participation and government transparency to curb the corruption.
8.	Osei-Kojo, 2016	Public service increases economic value (cost reduction), efficiency, customer satisfaction, and service accessibility. Low education and ICT infrastructure are two of the challenges in the implementation of E-government. In the view of business, the registration of new businesses in Ghana is faster and accessible.
9.	Hatam, 2020	E-government service development influence the decision process making as the social impacts on a social group within a community. The social impacts related to the development of E-government are living environment, quality of housing, local services, transportation condition, and cultural and political inclination, etc. The social inequalities, the use of ICT, and migration affect the relationship between citizen and government, and political participation. E-government increased the efficiency and cost reduction by using ICT. E-government increased the legitimacy of democracy and transparency.
10.	Crespo et al., 2017	The uses of E-government give substantial benefits to the performance of the organization.

		Online disclosure of organizational information will increase public transparency, improve management quality, saving the resource, and improving the relationship among stakeholders.
12.	Khan & Krishnan, 2019	E-government maturity influence by the level of corruption of a country. The corruption in national institutions, such as legal, political, and media in a country could obstruct the maturity of E-government. Business and citizen (national stakeholder) corruption of a country is also able to obstruct the maturity of E-government.
13.	Merhi, 2018	E-government uses and cultural dimensions were significantly related to each other. There are 3 variables that able to predict the E-government uses, such as uncertainty avoidance, power distance, and masculinity.
14.	Merhi, 2018	E-government uses and cultural dimensions were significantly related to each other. There are 3 variables that able to predict the E-government uses, such as uncertainty avoidance, power distance, and masculinity.
15.	Machova et al., 2018	Transparency improvement, public sector openness, and combatting corruption are the major benefits yielded from E-government. Higher development of E-government is associated with the low level of corruption. As one of the benefits of E-government, the environment sub-index assesses the market condition to support ICT development, innovation, and entrepreneurship.
16.	Sachan et al., 2018	Users' perception of government online facilities' ease of use increases as the electronic government service delivery system (eGSDS) process improved. E-government increase the user satisfaction as the perceived usefulness increased. The E-government website process, technological capabilities, is an important factor in shaping the service quality.

Citizen Engagement

By enhancing citizen engagement through e-participation, government management could be supervised and in the end would create transparency that will improve the trust from the citizens to the government (Crespo et al., 2017; Machova et al., 2018). The direct involvement of citizens also removing the boundaries between government and citizens. Good reputation and integrated agencies in public service can be developed well if citizen engagement can be enhanced (Aritonang, 2017). Moreover, the supervision of citizens affects the improvement of service quality (Sachan et al., 2018).

Citizen engagement can be done using social media platforms since the

information from the government to the citizens can be delivered in a timely manner. In addition, citizens could directly participate in current issues through social media. Past research conducted in the Purwodadi regency showed that the Facebook Fanspage account of a local government could improve citizen engagement in local governance issues (Purwadi et al., 2019). The citizen engagement in the implementation of E-government will enhance the trust between citizens and government. This condition will make both parties have better collaboration and stabilize national security. Moreover, when people are engaging in the implementation of E-government, there will be no one left

behind regarding the services provided by the government.

GDP Growth

Gustova (2017) indicates there was a positive significant impact of E-government implementation on GDP growth by applying correlation and regression analysis of panel data 34 European Countries during 2003 and 2014. The improvement of economic growth can be achieved by improving the efficiency of public administrations and acceptance of policies focused on streaming up the take-off effect. By facilitating the efficient provision of services to its citizen, the digital government can improve economic growth and the higher GDP per capita of a country. As can be seen in Table 1, various past studies reported the positive impact of E-government on GDP per capita. Basically, E-government and economic conditions are affecting one another.

Based on past research using large dynamic panel data from 154 countries around the world, it is evident that the implementation of E-government positively influences the economic growth of a country and increase the GDP per capita (Majeed & Malik, 2017). However, the implementation of E-government might not directly impact financial development (Majeed & Malik, 2016). National characteristics along with economic, social, technological, political, and demographic factors would enhance the economic digitalization through E-government (Ali et al., 2018). This is because good public service increases economic value while reducing cost and increases efficiency, customer satisfaction, and service accessibility (Osei-Kojo, 2016).

CONCLUSION

This current study reviewed the literature related to E-government implementation in developing countries to construct the future perspective of E-government in Indonesia. This study is important as a benchmark of how the other

developing countries implemented E-government so that Indonesia can learn from them to avoid the negative impacts and the possibility of failure. This paper reveals several findings that may be beneficial for the practitioners of E-government in Indonesia, such as the critical factors affecting the implementation of E-government and the impact that could be obtained from digital public services. With regard to the implementation of E-government, Indonesia should consider the level of maturity before implementing the digitization of the public sector and citizens' awareness. After implementing E-government, the government should identify the level of success by classifying the nuisances and establish suitable responses to achieve goals. As a developing country, it is a good strategy to make the services more efficient and effective. Indonesia could reduce corruption, enhance citizen engagement so governmental processes can be supervised, and increase the GDP and economic growth.

The future research directions need to focus on some suggestions, which are: (1) focus on related and unrelated critical factors of E-government implementation in developing countries; (2) classify the impact on developing countries; (3) categorize the level maturity of developing countries based on its condition; (4) focus on constraints that could appear due to the E-government implementation in developing countries.

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