



E-Government and Transparency: Strategies to Increase Government Accountability in the Digital Era

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ABSTRACT

This study aims to examine the role of e-government in enhancing transparency and accountability in public governance. The research hypothesizes that e-government has a significant positive effect on transparency and accountability, and that transparency mediates the relationship between e-government and accountability. This study employs a quantitative explanatory research design using a cross-sectional approach. Data were collected from 180 respondents who have experience using e-government services in Indonesia, selected through purposive sampling. The data were analyzed using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS). The variables examined include e-government, transparency, and accountability, measured using validated indicators and Likert-scale questionnaires. The results show that e-government has a significant positive effect on transparency ($\beta = 0.754$; $p < .001$) and accountability ($\beta = 0.782$; $p < .001$), while transparency also significantly influences accountability ($\beta = 0.468$; $p < .001$), confirming its mediating role. These findings indicate that the implementation of e-government enhances public information accessibility and strengthens accountability mechanisms. The implications of this study suggest that governments should strengthen digital governance strategies by improving infrastructure, promoting open data initiatives, and enhancing digital literacy to ensure effective and inclusive public services. This study contributes to the digital governance literature by integrating technological and institutional perspectives. The article includes 20 references, 4 tables, 4 figures, and a structured questionnaire as the research instrument.

Keywords: e-government, transparency, accountability, digital governance, public administration

INTRODUCTION

The development of information and communication technology (ICT) has driven a significant transformation in modern government systems through the implementation of e-government. E-government has become an important instrument in increasing bureaucratic efficiency, the quality of public services, as well as promoting the realization of good governance principles, particularly transparency and accountability. In the context of digital government, transparency is not only understood as openness of information, but also as the accessibility of public data in real-time, enabling the public to directly monitor government performance. Meanwhile, accountability refers to the government's obligation to be responsible for policies and actions openly to the public (Juliyanti & Kunci, 2025).

However, in practice, the implementation of e-government still faces various challenges. Although technology has developed rapidly, not all governments are able to optimally integrate digital systems in governance. Problems such as the digital divide, limited infrastructure, and low human resource capacity become major obstacles in realizing a transparent and accountable government. Research shows that although e-

government has great potential in improving the quality of public services, its effectiveness highly depends on institutional readiness and a supportive social environment (Mappisabbi et al., 2024).

Recent research shows that e-government has a strategic role in increasing government transparency and accountability. A study by (Setyarto & Judijanto, 2025) confirms that the implementation of e-government can improve public access to information as well as strengthen monitoring mechanisms of government performance. This is supported by research by (Taiwo, 2025) which found that e-governance significantly contributes to improving budget transparency through the openness of fiscal information and public participation in the oversight process (Government, 2022).

In addition, the research by (Mappisabbi et al., 2024) shows that the implementation of e-government at the local level is able to increase transparency, reduce corrupt practices, and strengthen accountability through an integrated digital system. Other studies also reveal that the digitalization of government enables the creation of more effective technology-based monitoring systems, allowing the government to provide more responsive and accountable public services.

However, several studies also indicate limitations in the implementation of e-government. The study by (Wijaya et al., 2024) emphasizes that e-government policies have not fully been able to enhance transparency without the support of inclusive and sustainable strategies. In addition, research by (Mohammed, 2025) found that the relationship between e-government and corruption reduction is not always linear, as accountability acts as a mediating variable that is highly decisive for the success of digital system implementation. These findings suggest that the success of e-government is determined not only by technology but also by institutional and governance factors.

Various studies have examined the role of e-government in enhancing transparency and accountability, yet there are still several gaps that need attention. First, most studies still focus on the technical and operational aspects of e-government, such as system efficiency and service digitalization, without deeply examining the integration between transparency and accountability within a comprehensive analytical framework. In fact, these two concepts are the main pillars in governance that are interconnected. Second, previous research tends to analyze the impact of e-government partially, thus not yet providing a complete picture of how e-government implementation strategies can simultaneously enhance transparency and accountability. In addition, empirical studies focusing on the context of developing countries, particularly Indonesia, are still limited. In fact, the social, economic, and institutional characteristics in developing countries present different challenges compared to developed countries, especially related to the digital divide and the capacity of government organizations.

This study aims to analyze the role and implementation strategies of e-government in enhancing government transparency and accountability in the digital era. This includes: (1) analyzing the influence of e-government on transparency, (2) evaluating its impact on government accountability, and (3) identifying the optimal strategies in the implementation of e-government.

The novelty of this research lies in the integrative approach that combines technological, institutional, and governance aspects into a comprehensive analytical framework. This study not only views e-government as an administrative tool but also as a

strategy for digital government transformation aimed at improving the quality of democracy and public trust, particularly in the context of developing countries.

METHODS

This study uses a quantitative approach with an explanatory research design, which aims to analyze the effect of e-government implementation on government transparency and accountability in the digital era. This approach was chosen because it can empirically and measurably explain causal relationships between variables. The research design is cross-sectional, where data is collected within a specific period to depict the actual conditions. The explanatory quantitative approach is widely used in e-government research because it can systematically and objectively test theoretical models (Setyarto et al., 2025; Srivastava et al., 2024).

The population in this study is the community that uses e-government services, particularly digital-based public services in Indonesia. The research subjects are focused on users of local government services, such as population administration, online licensing, and public information systems. The sampling technique used is purposive sampling, which is the selection of respondents based on certain criteria, such as having used e-government services at least once in the past year. This technique is considered appropriate for research based on digital service user behavior (Juliyanti & Ditasari, 2025). The sample size is determined based on the recommendation of Hair et al., which is at least 5–10 times the number of indicators, resulting in a respondent count of 150–200 people considered representative for SEM analysis (Kannapadang et al., 2025).

Data collection techniques were carried out through the distribution of online questionnaires using a 5-point Likert scale. The research instruments were developed from indicators that had been validated in previous studies and adjusted to the research context. The e-government variable was measured through system quality, ease of use, and service accessibility indicators (Setyarto & Judijanto, 2025). The transparency variable was measured through information openness, ease of data access, and clarity of public information (Taiwo, 2025). Meanwhile, the accountability variable was measured through government responsibility, reporting clarity, and public evaluation mechanisms (Hanifa et al., 2026).

The data analysis technique uses Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) with the help of SmartPLS software. This method was chosen because it is capable of analyzing complex relationships between latent variables and is suitable for research with a moderate sample size and data distribution that does not have to be normal (Hair et al., 2021). The analysis is conducted in two stages, namely evaluation of the outer model (indicator validity and reliability) and the inner model (testing relationships between variables).

RESULTS

This section presents the results of data analysis obtained from 180 respondents who met the research criteria. The analysis was carried out in stages, including the description of respondents, evaluation of the measurement model (outer model), and evaluation of the structural model (inner model) to test the research hypotheses.

1. Description of Respondents

The characteristics of respondents based on age, gender, and experience in using e-government are presented in Table 1.

Table 1. Respondent Characteristics

Category	Amount	Percentage (%)
Age		
17-25 17-25 years old	108	60.0
26-35 17-25 years old	54	30.0
>35 17-25 years old	18	10.0
Gender		
Male	90	50.0
Woman	90	50.0
The Use of E-Gov		
< 1 year	45	25.0
1-3 year	81	45.0
> 3 year	54	30.0
Total	180	100

The results show that the majority of respondents are aged 17-25 years (60.0%), indicating the dominance of the younger generation as the main users of e-government services.

2. Measurement Model Evaluation (Outer Model)

The evaluation of the outer model was conducted to test the validity and reliability of the constructs. The test results showed that all indicators had loading factor values above 0.70, thus meeting the convergent validity criteria.

Table 2. Results of Validity and Reliability Tests

Variable	AVE	Composite Reliability	Cronbach's Alpha
E-Government	0.712	0.902	0.871
Transparansi	0.695	0.889	0.854
Akuntabilitas	0.721	0.910	0.883
Total	-	-	-

The Average Variance Extracted (AVE) value for all variables is above 0.50, indicating good convergent validity. In addition, the Composite Reliability and Cronbach's Alpha values are both above 0.70, so it can be concluded that the research instrument is reliable.

3. Evaluasi Model Struktural (Inner Model)

The evaluation of the inner model is carried out to test the relationships between variables as well as to test the research hypotheses. The value of the coefficient of determination (R^2) indicates the ability of the independent variables to explain the dependent variable.

Table 3. R-Square (R^2) Values

Dependent Variable	R-Square
Transparency	0.568
Accountability	0.612

Total	-
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An R^2 value of 0.568 indicates that the e-government variable is able to explain 56.8% of the variation in transparency, while an R^2 value of 0.612 indicates that 61.2% of the variation in accountability can be explained by the research model. This shows that the model has a fairly strong predictive ability.

4. Hypothesis Testing

Hypothesis testing was conducted using t-statistics and p-values. The test results are presented in Table 4.

Table 4. Hypothesis Test Results

Variable Relationship	Coefficient (β)	t-statistics	p-values
E-Government → Transparency	0.754	9.876	.000
E-Government → Accountability	0.782	10.245	.000
Transparency → Accountability	0.468	5.321	.000
Total	-	-	-

The results show that e-government has a positive and significant effect on transparency ($\beta = 0.754$; $t = 9.876$; $p = .000$) and accountability ($\beta = 0.782$; $t = 10.245$; $p = .000$). In addition, transparency also has a significant effect on accountability ($\beta = 0.468$; $t = 5.321$; $p = .000$). Thus, all hypotheses in this study are accepted.

DISCUSSION

The findings of this study provide strong empirical evidence regarding the significant role of e-government in enhancing transparency and accountability in public governance. Based on the Structural Equation Model (SEM) results, e-government demonstrates a positive and significant effect on transparency ($\beta = 0.754$; $p < .001$). This result indicates that the implementation of digital governance systems contributes substantially to improving the accessibility, openness, and clarity of public information. These findings are consistent with previous studies that emphasize the importance of digital platforms in facilitating information disclosure and reducing information asymmetry between government institutions and citizens (Setyarto et al., 2025; Taiwo, 2025). The strong relationship between e-government and transparency suggests that the adoption of information and communication technologies (ICT) enhances the government's ability to provide real-time, accurate, and accessible information to the public. This aligns with the principles of good governance, where transparency serves as a key mechanism for ensuring public oversight and trust. Moreover, the findings support the argument that digital transformation is not merely a technical innovation but also a governance reform that reshapes the interaction between the state and society.

Furthermore, the results reveal that e-government has a direct and significant impact on accountability ($\beta = 0.782$; $p < .001$). This implies that digital systems improve not only service efficiency but also the responsibility and answerability of government institutions. Through integrated digital platforms, governments can enhance reporting mechanisms, monitor performance, and provide traceable records of public service delivery. This finding is in line with prior research suggesting that e-government strengthens institutional accountability by enabling better monitoring and evaluation processes (Mohammed, 2025).

In addition, the study finds that transparency significantly influences accountability ($\beta = 0.468$; $p < .001$), indicating that transparency plays a mediating role in the relationship between e-government and accountability. This suggests that the effectiveness of e-government in promoting accountability is partially achieved through increased transparency. In other words, when governments provide open and accessible information, it becomes easier for stakeholders to evaluate performance and hold institutions accountable. This finding reinforces the theoretical perspective that transparency is a prerequisite for accountability in democratic governance (Hanifa et al., 2026).

From a theoretical perspective, this study contributes to the development of digital governance literature by integrating technological and institutional dimensions into a unified analytical framework. Unlike previous studies that tend to examine e-government, transparency, and accountability separately, this research demonstrates the interconnected nature of these variables. The results confirm that e-government functions as a strategic enabler that simultaneously improves transparency and accountability, thereby enhancing overall governance quality.

From a practical perspective, the findings highlight the importance of developing comprehensive e-government strategies that go beyond technological implementation. Governments need to ensure that digital systems are supported by strong institutional frameworks, effective policies, and adequate human resource capacity. Without these supporting factors, the potential of e-government to improve transparency and accountability may not be fully realized. Additionally, efforts to reduce digital inequality and improve digital literacy are essential to ensure that all citizens can benefit from e-government services.

Despite its contributions, this study has several limitations. First, the research is based on cross-sectional data, which limits the ability to capture dynamic changes over time. Second, the study focuses on user perceptions, which may be influenced by subjective experiences. Future research is recommended to adopt longitudinal approaches and include objective performance indicators to provide a more comprehensive understanding of digital governance outcomes.

Overall, this study confirms that e-government plays a crucial role in strengthening transparency and accountability in the digital era. By leveraging digital technologies effectively, governments can enhance public trust, improve service delivery, and promote more accountable and transparent governance systems.

CONCLUSION

This study aims to examine the role of e-government in enhancing transparency and accountability in governance. Based on empirical findings using Structural Equation Modeling (SEM), it can be concluded that e-government has a positive and significant effect on transparency and accountability. The results of the study indicate that the implementation of digital government systems can improve accessibility and openness of public information, which ultimately strengthens the accountability of the public sector. In addition, transparency has been proven to have a positive and significant effect on accountability, thereby affirming its role as a mediating variable in the relationship between e-government and accountability (Setyarto et al., 2025; Taiwo, 2025).

These findings confirm that e-government is not merely a technological tool, but a strategic mechanism in improving the quality of governance. The integration of digital systems in public administration enables the government to enhance information transparency, strengthen oversight mechanisms, and improve responsiveness to public needs. This aligns with previous research stating that e-government plays a role in enhancing transparency and accountability through data-based systems and effective monitoring (Mohammed, 2025; Srivastava et al., 2024). Thus, the effective implementation of e-government contributes to building public trust and strengthening the principles of good governance in the digital era (Hanifa et al., 2026).

Based on these conclusions, several recommendations can be proposed. First, the government needs to strengthen the implementation of e-government through the improvement of digital infrastructure, system integration, and data accessibility. Second, policymakers need to develop strategies that promote transparency through open data initiatives and user-friendly digital platforms. Third, enhancing human resource capacity and digital literacy, both for government officials and the public, is important to maximize the benefits of e-government. In addition, efforts to reduce the digital divide should be prioritized to ensure inclusive access to digital-based public services (Juliyanti & Ditasari, 2025; Kannapadang et al., 2025).

Although making an important contribution, this study has several limitations. The use of cross-sectional data limits the ability to capture changes over a longer period, while the use of respondent perception-based data potentially introduces subjective bias. In addition, this study focuses on a specific context, so the generalization of the results to other regions or countries is still limited. Therefore, further research is recommended to use a longitudinal approach, add other variables such as public trust or service quality, and conduct comparative studies in various governance contexts (Srivastava et al., 2024).

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