





An Empirical Study of E-GovQual and Technology Adoption and Its Impact on the Image of Good Corporate Governance

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Abstract. The development of e-government is a critical topic in managing the activities of government organizations, and the relationship between service providers and users is a crucial aspect of e-government development. This research has developed the e-GovQual measurement model and integrated it with the Technology Adoption Theory (TAM) as part of the e-government technology adoption process. The aim of this research is to reveal how user satisfaction can influence the implementation of Good Corporate Governance (GCG) in government organizations. The study involved 143 respondents from various government agencies and partner institutions and used a quantitative approach and Structural Equation Modeling - Partial Least Squares (SEM-PLS) to present empirical evidence that perceived efficiency, trust, and reliability have a convincing influence on the e-government technology adoption process. The research results also show that the perceived ease and usefulness of e-government technology impact user satisfaction, which, in turn, positively impacts the image of good corporate governance within government organizations. Thus, this research provides valuable insights into the importance of these factors in e-government development and creates a solid foundation for future improvements in e-government systems.

Keywords: E-Government, Service Quality, Technology Adoption.

1 Introduction

The development of quality-oriented government administration has garnered significant interest from researchers over the past two decades. The research outputs provide empirical evidence that impartiality, the assertiveness of law enforcement, low levels of corruption, and civil service recruitment systems are key concerns at the macro level[1]. Governments in various countries are striving to enhance the qualifications of their bureaucracy as a means of improving the well-being of their citizens, and maintaining territorial integrity[2]. The utilization of technology is deemed a necessity, and continues to be adopted by both developed and developing countries, along with the dissemination of innovations in information technology globally[3]. The expansion of electronic services within government organizations represents the most significant

investment in efforts to provide services that are relevant to the digital age. The proliferation of internet users and the equitable distribution of electronic access throughout the country have established a new paradigm of human interaction with government organizations.

In Indonesia, the utilization of electronic services in government, also known as e-government, has been implemented for approximately two decades. With regards to the State Treasury Service Office (KPPN), the implementation of e-government has greatly enhanced the management of the distribution of the state budget in the regions and has strengthened the relationship between KPPN and its various counterparts. The electronic applications used in KPPN serve as the backbone of state treasury operations, overseeing the state budget in the regions. All government organizations are primarily focused on upholding good corporate governance in order to maintain and increase public trust[3]. The government's image symbolizes performance, so organizations often evaluate performance by measuring this image.

Government organizations of different complexities face challenges related to technology adoption and managing the relationship between service providers and their users[4]. In terms of theory, this problem can be viewed from at least two sides, first using the Technology Acceptance Model approach and its expansion[5,6]. The second approach is to place this problem as a dimension of the relationship quality between users of government-owned electronic services and their users. Service Quality Theory[7] provides a solid postulation through a service quality measurement model through tangible assurance, responsiveness, empathy, and reliability. This theory has been systematically developed[8] by offering an e-GovQual measurement model focusing on efficiency, trust, reliability, and citizen support. E-GovQual provides a psychometric model for measuring the performance of a government-owned electronic service product.

This investigation seeks to uncover the perceptions held by users of e-government services, with a particular focus on the State Treasury Service Office, and to assess the impact of technology adoption and service quality on the perception of Good Corporate Governance. The findings of this study will provide insight into the importance of evaluating the image of government organizations as perceived by users. The results of this research are expected to have both theoretical and practical implications for the field of service marketing within the context of government organizations.

Based on the presentation in the section above, the hypotheses are H1: efficiency has a significant effect on perceived usefulness; H2: efficiency has a significant effect on perceived ease of use; H3: trust has a significant effect on perceived usefulness; H4: trust has a significant effect on perceived ease of use; H5: reliability has a significant effect on perceived usefulness; H6: reliability has a significant effect on perceived ease of use; H7: perceived usefulness has a significant effect on user satisfaction; H8: perceived ease of use has a significant effect on user satisfaction; H9: user satisfaction has a significant effect on the image of Good Corporate Governance.

2 Methods

This study uses a verifiable quantitative approach[9]to find measurements of model constructions built on selected theories. Measurement using the SEM-PLS method to reveal the relationship between variables to test hypotheses[10,11]. The analysis unit uses e-government service applications, especially within the State Treasury Service Office (KPPN) RI. The survey has been carried out online to users of e-government services during Nov-Dec 2022. One hundred forty-three respondents were declared valid, and agencies using e-government services will be processed at the analysis stage. This amount is declared to meet the minimum requirements where data on SEM-PLS processing is ten times the highest number of formative indicators [10,12].

3 Result and Discussion

3.1 Respondent Profile

This study has obtained data from respondents who represent agencies, government institutions, and e-government service users in the territory of the Republic of Indonesia. The respondents' ages were distributed as follows: 55.8% fell between the ages of 41-55, 27.9% between 26-40, and 16.3% were 56 years old or older. The majority of respondents, 60.5%, held functional positions, while 39.5% held structural positions. The working period of many respondents was varied, with 41.9% stating they had worked for 11-20 years, 37.2% for more than 20 years, 16.3% for 6-10 years, and 4.7% for less than 5 years. The majority of respondents, 79.1%, came from ministries/agencies, while 16.3% were from local government agencies and 4.7% from TNI/POLRI agencies. The study found that 65.1% of respondents used e-government services more than five times a month, while 18.6% used them 1-3 times and 16.3% used them 3-5 times per month.

3.2 Respondent Profile

Based on the results of the test, it has been determined that all constructs have a loading value greater than 0.6 and all AVEs meet the criteria. The discriminant validity, as measured by the Heterotrait-Monotrait calculation, has fulfilled the threshold and is deemed acceptable. This is evidenced in **Table 1** and **Table 2**. Therefore, the model is deemed acceptable.

Table 1. Loading, Composite Reliability (CR), dan AVE

Measure	Loadings	C. Alpha	CR	AVE
<u>Efficiency (EF)</u>		0.907	0.934	0.780
EF 1	0.850			
EF 2	0.895			
EF 3	0.920			
EF 4	0.867			

Measure	Loadings	C. Alpha	CR	AVE
<u>Trust (TR)</u>		0.900	0.938	0.834
TR1	0.878			
TR2	0.953			
TR3	0.906			
<u>Reliability (RE)</u>		0.945	0.961	0.860
RE1	0.873			
RE2	0.924			
RE3	0.952			
RE4	0.958			
<u>Perceived Ease of Use (PE)</u>		0.906	0.978	0.919
PE1	0.895			
PE2	0.893			
PE3	0.886			
PE4	0.858			
<u>Perceived Usefulness (PU)</u>		0.927	0.944	0.880
PU1	0.979			
PU2	0.971			
PU3	0.944			
PU4	0.940			
<u>User Satisfaction (US)</u>		0.958	0.973	0.923
US1	0.974			
US2	0.963			
US3	0.945			
<u>Image of GCG (IM)</u>		0.958	0.973	0.923
IM1	0.974			
IM2	0.963			
IM3	0.945			

Table 2. Discriminant-Validity

	EF	IM	PE	PU	RE	US	TR
<u>EF</u>	0.883						
<u>IM</u>	0.655	0.914					
<u>PE</u>	0.769	0.796	0.883				
<u>PU</u>	0.760	0.837	0.872	0.959			
<u>RE</u>	0.613	0.609	0.672	0.625	0.927		
<u>US</u>	0.706	0.738	0.814	0.815	0.569	0.961	
<u>TR</u>	0.786	0.624	0.703	0.778	0.643	0.819	0.913

3.3 Structural Model

Using SmartPLS to test structural models, statistical stages have been applied as iterations of data using a bootstrapping procedure of 5000 iterations¹². To evaluate the explanatory capacity of the model, an average calculation of R² is used as a GoF measurement, where 13 set the limit values: Small GoF = 0.1, medium GoF = 0.25, and large GoF = 0.36. The calculations show that the model in this study has a GoF of 0.536, indicating that the construction of the CGC image model shows a good model match. Referring to the measurements model, it is known that the strength of predictor variables in endogenous constructions has the following results: efficiency, trust, and reliability can predict perceived ease of use by 64.1% and predict perceived usefulness. Furthermore, efficiency, trust, and reliability can predict perceived ease of use, and perceived usefulness has a predictive power of 77.4% on user satisfaction.

In this investigation, the reuse of predictive samples (Q²) was also utilized as a criterion for predictive relevance in addition to the R² measure to evaluate the efficacy of the data. A Q² with a value greater than 0 indicates that the model is predictively relevant. The data reveals that the Q² value in each variable, including perceived ease of use (0.490), perceived usefulness (0.602), user satisfaction (0.687), and image of GCG (0.444), is greater than 0.

The results of hypothesis testing have led to statistical conclusions regarding the relationship between seven hypotheses, with seven hypotheses being declared accepted and two rejected. Significant effects were discovered in the relationships between efficiency and perceived usefulness ($\beta = .348$, $p = .030$) and perceived ease of use ($\beta = .485$, $p = .003$); trust in perceived usefulness ($\beta = .408$, $p = .003$); reliability on perceived usefulness ($\beta = .149$, $p = .136$) and perceived ease of use ($\beta = .285$, $p = .014$); perceived ease of use on satisfaction ($\beta = .383$, $p = .015$); and the influence of satisfaction on GCG image ($\beta = .738$, $p = .000$). However, no significant effect was found in the relationship between trust and perceived ease of use or perceived usefulness on satisfaction.

3.4 Discussion

Developing e-government is crucial for managing government and state activities, including interactions with the community and partners. Several studies have found that the interface design and utility of e-government services can significantly impact the perception of convenience and expediency for users. Additionally, security features in e-government services can affect the perception of expediency, not convenience. Security features are vital in building the trust of e-government users, and data management and privacy are the main concerns of users. However, the development of complex security features can negatively impact the perception of ease of use. On the reliability aspect, this study found that the ability of e-government systems to function consistently during peak times and heavy loads has significantly influenced the technology adoption process. Reliable e-government services must continue to be developed to ensure smooth technology adoption in government activities.

4 Conclusion

This research has demonstrated the effectiveness of the e-GovQual measurement model when integrated with the technology adoption process in describing the user satisfaction model and its impact on the perception of GCG implementation. However, a limitation of this study is that it did not measure the physical and systematic utility effectiveness of each e-government feature, providing an opportunity for further research in this area

References

1. Suzuki, K. & Demircioglu, M. A. Is impartiality enough? Government impartiality and citizens' perceptions of public service quality. *Governance* **34**, 727–764 (2021).
2. Hariguna, T., Ruangkanjanases, A. & Sarmini. Public Behavior as an Output of E-Government Service: The Role of New Technology Integrated in E-Government and Antecedent of Relationship Quality. *Sustainability* **13**, 7464 (2021).
3. Achmad, M., Patu, M. & Ashariana. The Effect of E-Government Implementation on the Quality of Electronic Identity Card Public Service in Indonesia. *Croatian and Comparative Public Administration* **21**, 259–281 (2021).
4. Garad, A. & Qamari, I. N. Determining Factors Influencing Establishing E-Service Quality in Developing Countries. *International Journal of Electronic Government Research* **17**, 15–30 (2021).
5. Venkatesh, V. & Davis, F. D. A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Manage Sci* **46**, 186–204 (2000).
6. Davis, F. D. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly* **13**, 319 (1989).
7. Parasuraman A, Zeithaml, V. A. & Berry, L. L. SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing* **61**, 12–40 (1988).
8. Papadomichelaki, X. & Mentzas, G. e-GovQual: A multiple-item scale for assessing e-government service quality. *Gov Inf Q* **29**, 98–109 (2012).
9. Creswell, J. W. & Creswell, J. D. *Reserach Design: Qualitative, Quantitative, and Mixed Methods Approaches*. (SAGE Publications, Inc, 2018).
10. Hair, J. F., Risher, J. J., Sarstedt, M. & Ringle, C. M. When to use and how to report the results of PLS-SEM. *European Business Review* **31**, 2–24 (2019).
11. Chin, W. W., Peterson, R. A. & Brown, S. P. Structural Equation Modeling in Marketing: Some Practical Reminders. *Journal of Marketing Theory and Practice* **16**, 287–298 (2008).
12. Hair, J., Hollingsworth, C. L., Randolph, A. B. & Chong, A. Y. L. An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems* **117**, 442–458 (2017).

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