

E-Government Framework for the Information Disclosure Sector in the East Java Regional Government through a Socio-Technological Approach

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Abstract

The rapid development of Information and Communication Technology (ICT) has driven a revolution in the government sector, triggering a shift from conventional systems to E-Government. E-Government in the East Java regional government aims to accelerate population services, licensing, and public policy information. However, fundamental obstacles include selfish sectoral initiatives, a lack of effective management systems and work processes, and a limited focus on website implementation. This study aims to produce a conceptual design for web-based E-Government development, with the objectives of mapping driving and inhibiting factors, evaluating websites, preparing blueprints, formulating development, and recommending E-Government models to realize Smart Cities. Qualitative research methods involved interviews, focus groups, and discussions with informants from various levels of government and society. The level of technological readiness in this research is at level 2 (two), which seeks to formulate a conceptual design for an E-Government Development model in realizing a Smart City in the East Java Provincial Government and to recommend an E-Government Development model in realizing a Smart City in the East Java Provincial Government. The outputs and targets of this research are reputable international journals and policy briefs.

Keyword: E-Government Model Development, Smart City, Local Government.

Introduction

E-government, the use of ICT to deliver public services to individuals and other government stakeholders in a transparent, effective, and efficient manner through the World Wide Web (Yang L et al., 2018). E-government as a partner to conventional government in the context of smart cities (Hertati D & Wigati WR, 2015). The importance of e-government in minimizing misuse of government policies (Ismail et al., 2020). The government and public institutions in Indonesia have progressively and massively developed and utilized e-government systems to support smart cities (Hertati D, 2019). The legal framework for the implementation of e-government consists of Presidential Instruction No. 3 of 2003 concerning National Policies and Strategies for E-Government Development, Law No. 11 of 2008 concerning Electronic Information and Transactions (ITE Law), and Presidential Regulation No. 95 of 2018 concerning Electronic-Based Government Systems (SPBE) (Arjita, 2017).

E-government governance in developing countries varies (Bélanger F & Carter L, 2012). More than 60% of e-government projects in developing countries fail to achieve the desired results (Elkadi H, 2013). Of the failed projects, 35% failed completely, while 50% failed partially in achieving the expected results (Furuholt B & Wahid F, 2008). Problems in Bondowoso Regency, East Java, are constrained by infrastructure in the development of e-government (Ibad S et al., 2020). The Sidoarjo Regency website also has problems related to content

arrangement on the media page (Adirasyid RH et al., 2019). In Nganjuk Regency, the features on the website cannot be fully utilized because the program is still half-baked (Dan E, 2017). These issues are obstacles to the implementation of e-government, because the development of e-government applications requires substantial funding, commitment from policy makers, readiness on the part of government human resources, and readiness on the part of the community and businesses (Hertati, 2020).

Based on the description of the above problems, the research specifically formulates the following issues: 1) how to map the driving and inhibiting factors in the development of web-based e-government; 2) how to evaluate e-government websites in local government; 3) how to prepare a blueprint for the development framework of various aspects of e-government; 4) how to design a conceptual framework for the development of web-based e-government; 5) how to formulate web-based e-government development, 6) recommendations for a web-based e-government development model.

The positive impacts that the Indonesian government will experience when implementing an electronic-based government system include creating significant efficiency (Fikri H et al., 2018). However, at the implementation level, several problems are still found, namely: the majority of e-government websites are at the first level (preparation), only a small portion have reached the second level (maturity), while the third (consolidation) and fourth (utilization) levels have not been achieved (Batubara ER & Helmy H, 2019). E-government still requires another decade of implementation, as infrastructure must be built, policy issues resolved, and interoperability established (Layne K & Lee J, 2001).

To address these challenges, the proponents submitted a proposal for basic research to be conducted in stages or over multiple years for a period of two years, with the aim of developing an adoption strategy and conceptual design for web-

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based e-government in the East Java Provincial Government, focusing on: 1) mapping the driving and inhibiting factors for the development of web-based e-government, 2) evaluating e-government websites in local government, 3) preparing a blueprint for the development framework of various aspects of e-government, and 4) conceptual design for the development of web-based e-government; 5) formulation of web-based e-government development, 6) recommendations for a web-based e-government development model in realizing a smart city.

Table 1. State of the Art

| Framework / Reference | Elements | Objectives | Research Gap |
|---|--|---|---|
| Bélanger & Carter (2012) <i>Digitizing Government Interactions with Constituents</i> | Historical evolution of e-government, citizen interaction, public service transparency | To examine the development of e-government research within information systems and its impact on government citizen relationships | Lacks integration of socio-technological approaches within the context of local governments in developing countries |
| Elkadi (2013) <i>Success and Failure Factors for E-Government Projects: A Case from Egypt</i> | Success and failure factors, political leadership, public policy | To identify key determinants of e-government implementation success in developing countries | Does not address the adaptation of models to local government contexts such as those in East Java |
| Ibad et al. (2020) <i>Public Service Development through E-Government (Smart City Study in Situbondo Regency)</i> | Digital public services, smart city, citizen participation | To develop web-based public services through e-government at the regency level | Does not provide a comprehensive conceptual framework for cross-regional web-based e-government development |
| Adirasyid et al. (2019) <i>Usability Evaluation of the Official Website of Sidoarjo Regency Government</i> | Usability testing, heuristic evaluation, web design | To evaluate the quality and usability of local government websites | Focuses solely on technical aspects, without addressing policy, human resources, and governance dimensions |

E-government is expected to eliminate bureaucratic barriers and work processes, enabling various government agencies to work in an integrated manner (Reddick CG, 2011). The proponent took an approach based on previous research on “A two-stage model of e-government growth: Theories and empirical evidence for U.S. cities.” E-government is divided into three parts. First, conceptualizing e-government with three basic dimensions. Second, identifying the antecedents of e-government from the perspective of citizens, channel partners, and technology. Third, reporting the possible results (tangible and intangible) of e-government (Malodia S et al., 2021).

Furthermore, research on “Future of e-Government: An integrated conceptual framework” examines different stages. The first stage is information cataloging, which involves presenting information about the government and its activities on the Web. The second stage of e-government growth is the transaction stage. The public can contact a single point of government and complete every level of government transaction (i.e., the idea of “one-stop shopping”) is the most desirable feature (Reddick CG, 2004).

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The research will be conducted over one year, during which the proponents will design a conceptual framework for web-based e-government development. This will involve mapping the drivers and barriers to web-based e-government development, evaluating local government e-government websites, and preparing a blueprint for the development of various aspects of e-government. The tasks to be carried out by the research team are: 1) the team is tasked with mapping public satisfaction with the implementation of public services through public polls; 2) the team is tasked with evaluating e-government websites through focus group discussions; 3) the team is tasked with creating a blueprint for the development framework of various aspects of e-government, carried out through interviews and focus group discussions; 4) the team is tasked with creating standard operating procedures in web-based e-government development, IT Support service management, and the team is tasked with SOPs for server withdrawal from the data center.

This graphical summary illustrates the overall framework of the research on the E-Government Development Model in the East Java Provincial Government. The framework integrates socio-technological dimensions (policy, human resources, ICT infrastructure, and governance) and links them to outputs (public transparency, efficiency, and smart city realization). In relation to the research stages, the research roadmap for E-Government Development on Websites as a Support for Smart Cities in the East Java Provincial Government is as follows:

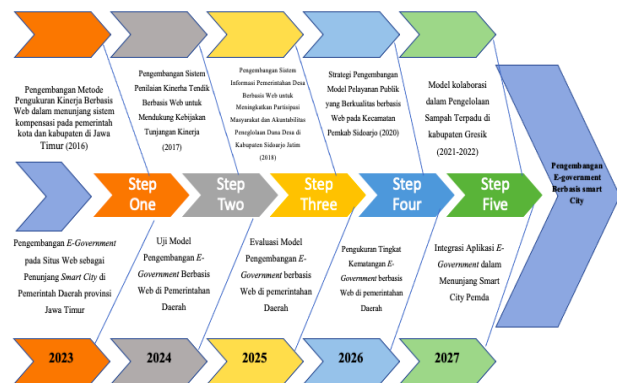


Figure 1. Fishbone diagram of the research

Method

The research on E-Government Development on Websites as a Support for Smart Cities in the Regional Government of East Java Province used a qualitative descriptive approach to describe a particular social phenomenon by comparing the phenomena found (Sugiyono PD, 2013). The research location was determined in 3 districts, namely Bondowoso, Sidoarjo, and Nganjuk, considering that based on the evaluation of the Indonesian Minister of State Apparatus Empowerment and Bureaucratic Reform in 2022, these three districts still had an SPBE index below 2.5 with a sufficient rating (Yang et al., 2019). The research sites in the three regencies of East Java Province were the Head of the East Java Provincial Communication and Information Agency (Diskominfo Jatim), the Regency Secretariat Public Relations, website administrators, and the community.

This study used nonprobability sampling, a technique in which informants were selected based on their suitability with the criteria formulated by the researcher (Matthew B & Miles MH, 2014). Meanwhile, snowball sampling was used to analyze the development of information and its sources. The informants in this study were the Head of the East Java Communication and Information Agency, the Regency Secretariat Public Relations

Office, website administrators, and the community. The data sources in this study used primary data, namely data in the form of interview transcripts obtained through interviews with informants, including the Head of the Communication and Information Agency, the Public Relations Office of the Regency Secretariat, website administrators, and the surrounding community. Meanwhile, secondary data was collected through several methods, namely documentation, in-depth interviews, observation, and literature study. The focus of the study was on mapping the driving and inhibiting factors in the development of web-based e-government; evaluation of e-government websites in local government, preparation of a blueprint for the development of various aspects of e-government (infrastructure, applications, human resources, and e-government governance), conceptual design for web-based e-government development, formulation of web-based e-government development; standard operating procedures in web-based e-government development, and recommendations for web-based e-government development models.

The collected data was then analyzed and interpreted through data condensation, whereby the data obtained was sorted according to requirements, then the sorted data was presented, and finally conclusions were drawn from the answers provided by the informants. As for testing the validity of the data, this study used three methods, namely source triangulation, which was done by checking the data obtained from the field through several sources, including the Head of the Communication and Information Agency, the Public Relations Office of the Regency Secretariat, the website administrator, and the surrounding community. Technical triangulation was done by checking the data from the same source using different techniques. The checks were carried out using interviews, observation, and documentation techniques. Meanwhile, time triangulation was carried out by checking data from the same location but at different times.

For the research activities, the proponent will design a conceptual design for web-based e-government development, carried out by mapping the driving and inhibiting factors of web-based e-government development, evaluating e-government websites in local government, and compiling a blueprint for the development framework of various aspects of e-government. The tasks to be carried out by the research team are: 1) the team is tasked with mapping public satisfaction with the implementation of public services through public polls; 2) the team is tasked with evaluating e-government websites through focus group discussions; 3) the team is tasked with creating a blueprint for the development framework of various aspects of e-government, carried out through interviews and focus group discussions. Based on the research stages described above, the research flowchart is as follows:

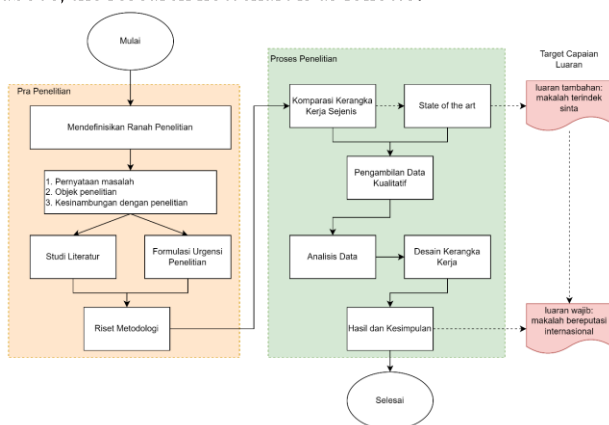


Figure 2. Research Flowchart

Results And Discussion

The results of research conducted in three districts in East Java Province, Bondowoso, Sidoarjo, and Nganjuk, show that the maturity level of E-Government implementation is still in the

early to intermediate stages, with an SPBE Index below 2.5 (Yang et al., 2019). Based on the results of Focus Group Discussions (FGD) and in-depth interviews with key informants, namely the Head of the Communication and Information Agency, the Regional Secretariat Public Relations Office, website administrators, and the community, it was found that the development of E-Government in local government still faces a number of fundamental obstacles, but also shows several potential driving factors for further development.

The main driving factors found include strong national and provincial policy support through Presidential Regulation No. 95 of 2018 concerning SPBE (Arjita, 2017), the push for public transparency and information disclosure as a form of local government accountability (Reddick CG, 2011), and increased digital literacy among the community, which is beginning to encourage the adoption of cloud computing-based technology in several agencies (Malodia S et al., 2021). These conditions indicate that in terms of policy and public awareness, the digital ecosystem in East Java has a fairly good foundation for development.

A significant inhibiting factor is the structural socio-technological gap between technological readiness and human resource capabilities and governance (Elkadi H, 2013). Strong sectoral ego between agencies (silo mentality) is a major obstacle to data interoperability and service system integration (Dan E, 2017). In addition, uneven basic infrastructure, especially in Bondowoso and Nganjuk Regencies (Ibad S et al., 2020), and non-standard website content governance in Sidoarjo (Adirasyid RH et al., 2019), have also slowed down the expected digital transformation. An evaluation of local government websites based on the four pillars of E-Government infrastructure, applications, human resources (HR), and governance shows that each pillar has its own challenges. The infrastructure pillar is still fragmented and not yet connected to the provincial data center. The application pillar is mostly informative and does not yet fully support public interaction. The HR pillar shows limitations in technical competence and high employee turnover, which impacts service continuity. Meanwhile, the governance pillar has not implemented integrated Standard Operating Procedures (SOPs) for website management and digital public services, resulting in inconsistencies in quality between agencies. The conceptual development of E-Government is divided into four sub-sections, namely:

- Integrated ICT infrastructure, covering network integration, servers, and data security.
- Digital applications and services, which include public service portals, complaint systems, and community-based open data.
- Human resources, with a focus on capacity building through training and certification of ICT managers.
- Governance and policy, in the form of SOPs, SPBE audit mechanisms, and interoperability policies.
- These overall results reinforce the finding that the success of E-Government is not only determined by technological readiness, but also by social, managerial, and public policy maturity that shapes the regional digital ecosystem.

Conclusion

Based on the findings, the implementation of E-Government in the East Java Provincial Government still faces structural challenges due to the gap between technological readiness and human resource capacity. Obstacles such as weak data interoperability between agencies, lack of policy coordination, and low consistency in digital governance are the main factors hindering the realization of an effective and integrated electronic-based government system. An integrated interoperability policy is needed, with regulations that require all regional agencies to integrate systems and public data centrally, thereby reducing duplication and speeding up service processes. The government can also establish cooperative relationships with the community through feedback and public monitoring mechanisms as a form of implementing the

principles of transparency, accountability, and citizen participation in digital governance. The main strength of this research lies in its integrative socio-technological approach that combines qualitative field data and policy analysis. However, the limitation is the small number of regions observed and the absence of longitudinal data to measure post implementation impacts.

References

- Adirasyid RH, Az-zahra HM, & Setiawan NY. (2019). *Evaluasi Usability Situs Web Resmi Pemerintah Kabupaten Sidoarjo Menggunakan Metode Usability Testing dan Evaluasi Heuristic*. 3, 8804–8813.
- Arjita, U. A. (2017). E-Government Sebagai Bagian Dalam Smart City. *Semin Nas IPTEK Terap*, 15–17.
- Batubara ER, & Helmy H. (2019). Analisis Pengembangan Electronic Government Melalui Penyelenggaraan Website Di Pemerintahan Daerah Kabupaten Padang Pariaman. *J Eksplor Akunt*, 1, 1666–1686.
- Bélanger F, & Carter L. (2012). Digitizing Government interactions with constituents: An historical review of E-Government research in information systems. *J Assoc Inf Syst*, 13, 363–394.
- Dan E. (2017). *E-Government And Its Application In Local Government* 151–164.
- Elkadi H. (2013). Success and failure factors for e-government projects: A case from Egypt. *Egypt Informatics J*, 14, 165–173.
- Fikri H, Suharto DG, & Nugroho RA. (2018). *Government innovation: The challenges and the best practice of smart city in Indonesia*. 165, 148–153.
- Furuholt B, & Wahid F. (2008). *E-government Challenges and the Role of Political Leadership in Indonesia: the Case of Sragen*. 1–10.
- H, & DH. (2017). Development of Web-Based Job Performance Assessment System of Local Government in Indonesia. *Indian J Commer Manag Stud*, VIII, 46–51.
- Hertati D. (2019). Web-Based Government Information System Implementation Model For Village Government. *Arch Bus Res*, 7, 414–425.
- Hertati, D. (2020). Model Implementasi sistem informasi pemerintahan desa berbasis web bagi pemerintahN desa di Kabupaten Sidoarjo. *Dinamika Governance: Jurnal Ilmu Administrasi Negara*, 10(1). <https://doi.org/10.33005/jdg.v10i1.2049>
- Hertati D, & Wigati WR. (2015). *Development of Web-Based Performance Measurement Method in Supporting Compensation System at the City and District Governments in Indonesia*. 5, 147–151.
- Ibad S, Lolita YW, & Studi P. (2020). Pengembangan Pelayanan Publik Melalui E-Government (Studi Pada Layanan Smartcity Kabupaten Situbondo) Program Studi , Hukum Universitas Ibrahimi , Indonesia. *J Adm Publik*, 6, 44–54.
- Ismail, Fathonih A, & Prabowo H. (2020). *Transparency and corruption: Does E-government effective to combat corruption?* *Int J Psychosoc Rehabil*. 24, 5396–5404.
- Layne K, & Lee J. (2001). *Developing fully functional E-government: A four stage model* (Vol. 18). Gov Inf Q.
- Malodia S, Dhir A, & Mishra M. (2021). Future of e-Government: An integrated conceptual framework. *Technol Forecast Soc Change*, 173, 121102.
- Matthew B, & Miles MH. (2014). *Qualitative Data Analysis: An expanded Sourcebook 2nd Edition*.
- Reddick CG. (2004). A two-stage model of e-government growth: Theories and empirical evidence for U.S. cities. *Gov Inf Q*, 21, 51–64.
- Reddick CG. (2011). Customer Relationship Management (CRM) technology and organizational change: Evidence for the bureaucratic and e-Government paradigms. *Gov Inf Q*, 28, 346–353.
- Sugiyono PD. (2013). *Metode Penelitian Kualitatif dan R and D*.
- Taipale S. (2013). The use of e-government services and the Internet: The role of socio-demographic, economic and geographical predictors. *Telecomm Policy*, 37, 413–422.
- Yang L, Elisa N, & Eliot N. (2018). Privacy and security aspects of E-government in smart cities. *Elsevier Inc. Epub Ahead of Print 2018*. <https://doi.org/DOI:10.1016/B978-0-12-815032-0.00007-X>
- Yang, L., Elisa N., & Eliot, N. (2019). Privacy and Security Aspects of E-Government in Smart Cities. In *Smart Cities Cybersecurity and Privacy* (pp. 89–102). Elsevier. <https://doi.org/10.1016/B978-0-12-815032-0.00007-X>