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Implementation of E-Government Principles in Village Public Service Management A Study of Tunggulsari Village, Indonesia

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Abstract

The rapid development of information and communication technology has encouraged governments to improve the quality of public services through the implementation of e-government systems. This study aims to analyze the implementation of e-government principles in the management and public services of Tunggulsari Village, Tulungagung Regency, Indonesia. The research employed a qualitative descriptive approach using secondary data collected from academic literature, government regulations, village website documentation, and related studies. The findings indicate that the village website functions as an important instrument for transparency, accountability, information dissemination, and administrative services. The implementation of e-government in Tunggulsari Village was analyzed through four main principles: public service orientation, competitive environment development, innovation support, and efficiency achievement. The study reveals that the village website contributes to improving access to information and administrative services; however, several challenges remain, including limited digital literacy, inadequate technological infrastructure, and insufficient human resource capacity in website management. The study concludes that effective implementation of e-government at the village level requires sustainable infrastructure development, digital capacity building, and community participation to enhance public service quality and rural governance.
Keywords: E-Government; Village Administration; Public Service; Digital Governance; Website Village; Indonesia

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INTRODUCTION

The advancement of information and communication technology has significantly transformed public administration systems worldwide (Sihotang et al., 2023). Governments are increasingly adopting digital technologies to improve administrative efficiency, transparency, accountability, and public service quality (Ahmad et al., 2022; Fiestiandani et al., 2026). This transformation has encouraged the emergence of electronic government (e-government) systems as innovative mechanisms for delivering public services more effectively and interactively (Mayasari et al., 2023).

Public service quality has become an important indicator of governmental performance because citizens directly evaluate the effectiveness of administrative services, they receive (Faozanudin et al., 2023). In Indonesia, the implementation of e-government has become increasingly relevant following the enactment of Law Number 6 of 2014 concerning Villages, which emphasizes village autonomy, governance improvement, community empowerment, and sustainable rural development (Faozanudin et al., 2025). Village governments are expected to utilize digital technology to support administrative management and improve communication with communities (Ummah et al., 2022).

E-government refers to the use of information and communication technology to strengthen interactions between government institutions, citizens, businesses, and other stakeholders (Kasmiah et al., 2024). According to Indrajit, e-government creates new mechanisms of governance that improve service quality, administrative efficiency, and governmental accountability through technology-based systems (Fanro, 2024). The implementation of e-government also supports transparency and facilitates easier public access to governmental information and services (Saifullah et al., 2019).

Village websites represent one of the most common forms of e-government implementation in rural areas (Herdiana et al., 2022; Kaynanda & Zarlis, 2024). Village websites function not only as information platforms but also as instruments for public accountability, administrative services, digital archiving, and promotion of local economic potential (Farida et al., 2021; Geohansa et al., 2025). Through digital platforms, village governments can provide faster, more accurate, and more accessible services to citizens while reducing bureaucratic inefficiencies (Rinayuhani et al., 2025).

Tunggulsari Village, located in Tulungagung Regency, Indonesia, has implemented a village website since 2019 as part of its effort to improve public services and administrative transparency (Razak et al., 2024). The website serves as a medium for disseminating village information, promoting tourism potential, and supporting public administration (Jando et al., 2025). However, several challenges remain, including limited digital literacy among residents, inadequate infrastructure, and incomplete information management within the website system.

Previous studies have discussed the implementation of e-government in public administration and village governance (Rohayati et al., 2022). However, limited research specifically examines the implementation of e-government principles in village-level public services within rural Indonesian contexts. Therefore, this study aims to analyze how e-government principles are implemented in the management and public services of Tunggulsari Village and to identify challenges affecting the effectiveness of digital governance at the village level.

LITERATURE REVIEW

E-Government Concept and Theoretical Foundations

E-government is broadly understood as the use of information and communication technology to strengthen interaction between government institutions, citizens, businesses, and other stakeholders, with the aim of improving service quality, administrative efficiency, and accountability (Kasmiah et al., 2024). Indrajit's conceptualization, as cited by Fanro (2024), positions e-government as a mechanism that reshapes governance relationships through technology-based systems rather than merely digitizing existing bureaucratic procedures. Sihotang et al. (2023) extend this theoretical foundation by applying stakeholder theory to explain how the adoption of e-government at the village level in Indonesia depends on the interests and capacities of multiple actors, including village officials, communities, and supporting institutions.

E-Government Implementation in Indonesian Village Governance

The Indonesian government has increasingly positioned village-level digitalization as a policy priority following Law Number 6 of 2014 concerning Villages, which emphasizes village autonomy and community empowerment (Faozanudin et al., 2025). Empirical studies confirm that this policy direction has translated into a variety of village e-government initiatives across the country. Ummah et al. (2022) document e-government implementation supporting digital villages in Cianjur Regency, while Kasmiah et al. (2024) examine service innovation in village administration in Barru District. Similarly, Fanro (2024) analyzes the Digides (Digital Village) application in Central Bengkulu, and Razak et al. (2024) propose an integrated village fund governance model supported by the Siberas public service application. Jando et al. (2025) extend this discussion to border regions, showing that e-government also plays a role in improving public services in geographically and politically sensitive areas such as the Indonesia-Timor-Leste border.

Digital Infrastructure, Literacy, and Institutional Challenges

Despite growing adoption, several studies emphasize that persistent structural barriers limit the effectiveness of village e-government. Faozanudin et al. (2023) find that many village governments in Banyumas Regency remain insufficiently prepared for digital transformation due to limited technical capacity. Faozanudin et al. (2025) further identify key factors slowing digital transformation, including infrastructure limitations, budget constraints, and low digital literacy among village officials. Fiestiandani et al. (2026) highlight the human dimension of this challenge, arguing that policy capacity in rural Indonesia's digital public service delivery depends not only on technological availability but also on the skills, motivation, and institutional support available to local administrators. Rohayati et al. (2022) similarly report that expert assessments of village e-government implementation point to apparatus performance and human resource capacity as decisive factors in determining program success.

Village Websites as Instruments of Public Service Innovation

Village websites are widely recognized as the most common and accessible form of e-government at the village level (Herdiana et al., 2022; Kaynanda & Zarlis, 2024). Farida et al. (2021) frame website-based services as a form of public service innovation that broadens citizen access to government information without requiring physical presence at administrative offices. Djabbari et al. (2024) and Saifullah et al. (2019) provide case evidence from Tondowolio Village and several villages in Sidenreng Rappang Regency, respectively, showing that website-based services improve transparency and administrative efficiency, although implementation quality varies considerably between villages. Geohansa et al. (2025) connect this trend to the

broader smart village agenda, positioning village digitization as part of a sustainable development strategy, while Rinayuhani et al. (2025) and Mayasari et al. (2023) show that governance quality and organizational readiness strongly influence how effectively a village website functions once it is launched.

Research Gap and Analytical Framework

Existing literature on village e-government in Indonesia is extensive but tends to cluster around two foci: readiness and preparedness assessments (Faozanudin et al., 2023; Mayasari et al., 2023) on one hand, and single-case descriptive accounts of specific village websites or applications on the other (Djabbari et al., 2024; Fanro, 2024; Razak et al., 2024). Comparatively fewer studies apply a structured, multi-dimensional analytical framework to evaluate how a single village's e-government practice performs across several governance principles simultaneously.

Moreover, studies addressing human and institutional barriers (Faozanudin et al., 2025; Fiestiandani et al., 2026; Rohayati et al., 2022) rarely connect these barriers back to a formal e-government principle framework such as Nugraha's four dimensions of public service orientation, competitive environment development, innovation support, and efficiency achievement, leaving small, resource-limited villages such as Tunggulsari underrepresented in the empirical record. This creates a research gap: limited empirical evidence exists on how a small rural village website simultaneously satisfies or fails to satisfy multiple e-government principles at once, and how infrastructural and human resource constraints interact with each of those principles specifically. This study addresses that gap by using Nugraha's four e-government principles as a structured analytical framework to evaluate Tunggulsari Village's website-based public services in an integrated manner rather than through a single, undifferentiated assessment of e-government success.

This study's analytical framework is built on the four e-government principles proposed by Nugraha, which are used to classify and interpret the secondary data collected from village website documentation, government regulations, and related academic literature, as outlined in the research framework presented in Figure 1. Each principle functions as an analytical lens for evaluating a distinct dimension of digital governance performance at the village level.

Public service orientation is operationalized as the extent to which the village website provides accessible information, administrative services, and communication channels that directly serve citizens' needs, consistent with the accessibility and transparency functions described by Farida et al. (2021) and Rinayuhani et al. (2025).

Competitive environment development is operationalized as the website's contribution to promoting local economic potential, tourism, and community empowerment, reflecting the smart-village positioning discussed by Geohansa et al. (2025).

Innovation support is operationalized as the extent to which the website introduces new administrative mechanisms and digital practices beyond conventional bureaucratic procedures, in line with the innovation-oriented perspective of Farida et al. (2021) and Kasmiah et al. (2024).

Efficiency achievement is operationalized as improvements in the speed, accuracy, and cost-effectiveness of service delivery attributable to the website, an outcome emphasized in studies of the administrative benefits of village digitalization (Kaynanda & Zarlis, 2024; Putro & Besa, 2025).

These four principles are applied sequentially within the research process illustrated in Figure 1: literature review and secondary data collection provide the analytical input, classification according to the four principles constitutes the analytical process, and the resulting descriptive interpretation of Tunggulsari Village's e-government performance, together with the challenges identified, constitutes the analytical output (Sihotang et al., 2023; Rohayati et al., 2022).

RESEARCH METHODS

Research Design

This study employed a qualitative descriptive approach to analyze the implementation of e-government principles in the management and public services of Tunggulsari Village. Qualitative research was selected because it enables researchers to explore social phenomena and understand public administration practices in greater depth.

Research Setting

This study was conducted in Tunggulsari Village, Tulungagung Regency, East Java, Indonesia. Tunggulsari Village was selected as the research setting because the village has implemented a village website as a digital instrument to support public administration and public service delivery. The website is used to disseminate government information, publish village activities, provide administrative information, and facilitate communication between the village government and the community.

The study focuses on the implementation of e-government in village governance, particularly in relation to public service delivery, transparency, communication, information management, and administrative efficiency. The research setting is also relevant because the implementation of digital governance at the village level continues to face challenges, including limited digital literacy, inadequate technological infrastructure, and limited human resource capacity in managing digital platforms.

Data Sources

The research utilized secondary data obtained from books, scientific journals, government regulations, village website documentation, and related academic publications concerning e-government, public services, and village administration. Data collection focused on identifying the implementation of e-government principles within the village public service system.

Informan Selection

Informants were selected using purposive sampling based on their knowledge, experience, and direct involvement in village governance and public service delivery. The potential informants included village government leaders, village officials responsible for administration and public services, personnel involved in managing the village website, and community members who use village public services.

Village government officials provided information concerning policies, administrative mechanisms, digital service implementation, human resource capacity, and institutional challenges. Website administrators provided information regarding the management and utilization of the village's digital platform. Meanwhile, community members provided perspectives concerning accessibility, clarity of information, convenience of services, government responsiveness, and the perceived benefits of digital public services.

Data Collection

Data were collected through semi-structured interviews, observation, and documentation. Semi-structured interviews were conducted with selected informants to obtain in-depth information regarding the implementation of e-government principles in village public service management. The interview questions were developed based on four dimensions proposed by Nugraha: public service orientation, development of a competitive environment, support for innovation, and achievement of efficiency.

Observation was conducted to examine the implementation of digital technology in village administrative activities and public service interactions. The researchers observed how digital platforms were utilized to disseminate information, support administrative processes, and facilitate communication between the village government and citizens.

Documentation involved reviewing the Tunggulsari Village website, village administrative documents, government regulations, reports, publications, and other relevant documents. These documents were used to complement the interview and observation data and to verify information concerning the implementation of e-government.

Data Analysis

The analytical framework of this study adopted four principles of e-government proposed by Nugraha: (1) public service orientation, (2) competitive environment development, (3) innovation support, and (4) efficiency achievement. The collected data were classified according to these principles and analyzed descriptively to interpret the effectiveness of e-government implementation in Tunggulsari Village.

The research process consisted of several stages: literature review, data collection, data classification, descriptive analysis, and conclusion drawing. This framework enabled the study to systematically evaluate digital governance practices and identify challenges related to village-based e-government implementation.

Figure1. Research Framework of E-Government Implementation in Tunggulsari Village

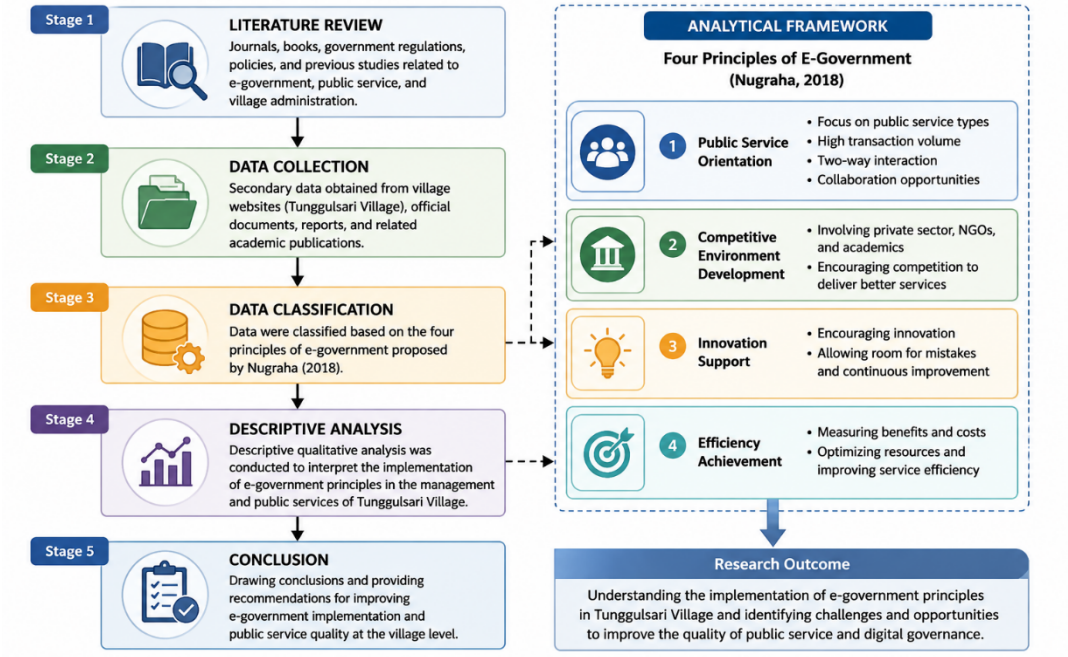


Figure 1 the implementation of e-government principles in Tunggulsari Village demonstrates that digital transformation at the village level has significant potential to improve

public service quality, administrative transparency, and governance efficiency. The village website has become an important medium for information dissemination, digital administration, and community interaction. However, the effectiveness of e-government implementation is still influenced by several challenges, including limited digital literacy, inadequate technological infrastructure, and insufficient human resource capacity in website management.

Therefore, sustainable collaboration between village governments, communities, and related stakeholders is essential to optimize digital governance implementation. Strengthening infrastructure, improving technological competency, and increasing public participation are necessary to ensure that e-government systems can operate effectively and sustainably. Through continuous improvement and innovation, village-based digital governance is expected to support more transparent, responsive, and citizen-oriented public services in Indonesia.

Trustworthiness and Ethics

The trustworthiness of the research findings was ensured through source and method triangulation. Source triangulation was conducted by comparing information obtained from village government officials, website administrators, and community members. Method triangulation was conducted by comparing findings from interviews, observations, and documentary evidence. The researchers also conducted continuous comparison and verification of the collected data to minimize inconsistencies and strengthen the credibility of the findings.

Ethical considerations were applied throughout the research process. Informants were informed about the purpose of the study and their participation was voluntary. Their identities and personal information were protected where confidentiality was required. Data obtained from interviews were used solely for academic purposes. Publicly available information from the village website and official documents was used responsibly and proportionally to support the analysis. The researchers also sought to present the findings objectively without manipulating or misrepresenting the information obtained from the research setting.

RESULTS AND DISCUSSION

Public Service Orientation

The findings indicate that the village website of Tunggulsari plays an important role in improving public service accessibility and administrative transparency. The website provides information regarding village administration, public announcements, local development programs, and tourism potential. Through digital platforms, citizens can access public information more quickly and efficiently without depending entirely on face-to-face administrative procedures.

The implementation of website-based public services also supports better data management and digital archiving systems compared to conventional administrative methods. The existence of digital documentation reduces risks associated with physical document damage caused by natural disasters, fire, or other environmental factors.

Competitive Environment Development

The development of a village website contributes to creating a more competitive and adaptive governance environment. In the digital era, village governments are expected to utilize technology not only for administrative purposes but also for community empowerment and information dissemination. The website functions as a platform for promoting local economic products, tourism potential, and community activities.

In addition, the website facilitates communication between village authorities and residents, strengthens social interaction, and helps counter misinformation or hoaxes

circulating within society. The digital platform also supports knowledge sharing through educational content related to agriculture, livestock management, and local economic development.

Innovation Support

The implementation of e-government in Tunggulsari Village demonstrates governmental efforts to encourage innovation in public administration. Since its establishment in 2019, the village website has functioned as an instrument of transparency, accountability, and public communication. However, the findings reveal that the website management system remains insufficiently organized and lacks comprehensive information updates.

Challenges related to innovation implementation include limited digital literacy among community members and inadequate technical skills among website administrators. These conditions reduce the effectiveness of digital public services and limit community participation in utilizing online platforms.

Efficiency Achievement

The implementation of village websites improves administrative efficiency by simplifying information delivery and public service procedures. Website-based services enable faster communication, easier document management, and broader dissemination of public information. Several public services that can be supported through village websites include administrative services, complaint management systems, information services, and community counseling programs.

Despite these advantages, the effectiveness of e-government implementation remains constrained by limited technological infrastructure, unstable internet access, and insufficient human resource capacity. Therefore, continuous training programs and infrastructure development are essential for improving digital governance at the village level.

Discussion

The implementation of e-government principles in Tunggulsari Village demonstrates that digital governance has significant potential to improve rural public services (Djabbari et al., 2024). The village website contributes to transparency, accountability, efficiency, and information accessibility . These findings support previous studies emphasizing the importance of technology-based governance in improving public administration quality.

However, successful implementation of e-government requires more than technological infrastructure (Putro & Besa, 2025). Human resource development, digital literacy improvement, and sustainable institutional support are equally important factors influencing digital governance effectiveness. Without adequate community participation and administrative capacity, e-government systems may fail to achieve their intended objectives.

CONCLUSION

The implementation of e-government principles in Tunggulsari Village has contributed positively to improving public service management, administrative transparency, and information accessibility. The village website functions as an important digital platform supporting public administration, community communication, and local development promotion. The study identified four major dimensions of e-government implementation: public service orientation, competitive environment development, innovation support, and efficiency achievement. Although digital governance has improved administrative effectiveness, several challenges remain, including limited digital literacy, inadequate infrastructure, and insufficient

human resource capacity in website management. Therefore, village governments should strengthen technological infrastructure, improve digital competency among administrators and citizens, and enhance community participation to optimize e-government implementation and improve the quality of rural public services in Indonesia.

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