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Review Article

Improving Public Services Based on E-Government at the Population and Civil Registration Office of Gresik Regency

Apri Widyastik [1], Amirul Mustofa [2]*, Ulul Albab [3], Sri Kamariyah [4]

[1] Prodi Ilmu Administrasi Jenjang S2, Fakultas Ilmu Administrasi, Universitas Dr. Soetomo Surabaya, Indonesia: awidyastik@gmail.com
[2] Prodi Ilmu Administrasi Jenjang S2, Fakultas Ilmu Administrasi, Universitas Dr. Soetomo Surabaya, Indonesia: amirul.mustofa@unitomo.ac.id
[3] Prodi Ilmu Administrasi Jenjang S2, Fakultas Ilmu Administrasi, Universitas Dr. Soetomo Surabaya, Indonesia: ulul.albab@unitomo.ac.id
[4] Prodi Ilmu Administrasi Jenjang S2, Fakultas Ilmu Administrasi, Universitas Dr. Soetomo Surabaya, Indonesia: sri.kamariyah@unitomo.ac.id
* Corresponding Author: amirul.mustofa@unitomo.ac.id

Abstract: This study aims to analyze the implementation of e-government in improving the quality of public services at the Population and Civil Registration Office of Gresik Regency. The study uses a qualitative descriptive approach, with data collection techniques including observation, interviews, and documentation. The analysis focuses on the stages of e-government implementation, covering the dimensions of presence, interaction, and transaction in population administration services. The results indicate that the implementation of e-government at the Population and Civil Registration Office of Gresik Regency has been carried out through the provision of digital information media, such as an official website and online-based population administration service applications. In the presence dimension, the local government provides various information related to population administration services, including requirements, procedures, service times, and the types of services available to the public. In the interaction dimension, the digital service system allows the public to communicate with the service office by submitting questions, complaints, or requests for information online. Meanwhile, in the transaction dimension, the public can submit requests for population documents, such as Family Cards, birth certificates, and other documents, through the digital service system. The implementation of e-government has positively impacted the efficiency, transparency, and ease of access to population administration services for the public. Therefore, the utilization of information technology in public services can serve as an important strategy for improving the quality of population administration services in local government.

Keywords: E-Government; Population Administration; Public Service; Service Digitalization; Service Quality.

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1. Introduction

Public service is one of the main functions of government in fulfilling the basic needs of society. As the state administrator, the government has the obligation to provide services that are of high quality, transparent, accountable, and responsive to the needs of the public. The quality of public services is often used as an important indicator for assessing bureaucratic performance and the level of public trust in the government. Therefore, the effective and efficient provision of public services has become a key demand in modern governance. In practice, however, public service delivery in many countries still faces various problems, such as complex service procedures, long service times, lack of information transparency, and low responsiveness of government officials to public needs. These conditions result in relatively low public satisfaction with public services and often generate

complaints from service users. This demonstrates that conventional public service systems are not yet fully capable of meeting the increasingly dynamic demands of society.

The phenomenon of low-quality public services delivered by bureaucracies in many countries, including Indonesia, has prompted governments to undertake various reforms in public administration systems. One strategic step is the implementation of digital transformation in public service delivery. Digital transformation is viewed as an important instrument to improve efficiency, transparency, accountability, and the quality of services provided to the public. By leveraging information and communication technology (ICT), the government seeks to simplify service procedures, accelerate administrative processes, and minimize bureaucratic inefficiencies. Furthermore, digitalization allows the public to access services more easily, quickly, and flexibly without having to be physically present at service offices. Therefore, digital transformation has become a primary strategy in realizing governance that is more effective, responsive, and citizen-oriented.

Digital transformation in public service delivery has become a major agenda in contemporary public administration, positioning local governments as key actors in translating national digital strategies into tangible results experienced by citizens. Although digital platforms and e-government initiatives have spread rapidly, substantial variations still exist in the performance, inclusivity, and sustainability of digital public services across different local contexts (Widyastik et al., 2025). The emergence of e-Government (e-Gov) marked the beginning of online governance, providing positive expectations for improved public service quality. E-Gov refers to the use of information and communication technology, particularly the internet, to provide public services more conveniently, customer-oriented, cost-efficient, and in a better manner. E-Gov connectivity includes Administration to Administration (A2A), Administration to Business (A2B), and Administration to Citizen (A2C) (Holmes, 2001).

E-government involves the use of ICT by the government to provide information and public services to citizens more effectively, efficiently, transparently, and accountably. Digital technology enables citizens to access various public services quickly and conveniently without visiting government service offices directly (Budiyanto & Taufik, 2025). The implementation of e-government is a crucial strategy in bureaucratic reform and the improvement of public service quality. Through e-government, government administrative processes can be carried out electronically, accelerating service delivery and improving resource management efficiency. Moreover, e-government enhances transparency and accountability, as public service information is openly accessible to citizens (Waloni et al., 2025).

In Indonesia, e-Gov initiatives began with Presidential Instruction No. 6 of 2001 on Telematics (Telecommunications, Media, and Informatics). Two years later, Presidential Instruction No. 3 of 2003 was issued on policies and strategies for e-Government development. According to Inpres No. 3/2003, e-Gov is an effort to develop electronic-based governance to improve the quality of public services effectively and efficiently. E-Gov development involves reorganizing management systems and work processes in government institutions by optimizing ICT use. Under this instruction, each Governor and Regent/Mayor is mandated to take necessary steps within their respective duties, functions, and authorities to ensure the national implementation of e-Gov.

E-Government aims to establish a government service system that is easier and faster through the internet, thereby accelerating the dissemination of information to the public. E-Government refers to government activities supported by ICT in providing services to the public. Its importance includes: (1) promoting a government responsive to public needs and aspirations; (2) encouraging the utilization of information openness; and (3) fostering public participation in governance (Hasibuan & Santoso, 2005). From a theoretical perspective, the citizen-centric orientation of e-government, according to Duggan and Green (2008), marks a global transformation of public services. Since 2005, a prominent agenda has emerged: an e-government strategy that shifted from merely using ICT for online information services toward a citizen-focused approach in public service delivery. The public sector can realize this transformation when governments begin incorporating citizen input and feedback into policies and development programs through interactive online media and other accessible channels. This vision emphasizes ICT use to improve public policy and government operations with broader citizen engagement, providing comprehensive and timely services, better policy outcomes, higher service quality, and advancing public reform agendas, collectively termed electronic governance (e-government) by Dawes (2008).

The implementation of e-government, aligned with Indonesia's bureaucratic reform, increasingly contributes to enhancing public service quality and delivering information more

effectively to citizens. Continuous efforts are required to further improve e-government quality. Achieving effective e-government also represents a step toward smart government. E-Government is a fundamental strategy that must be realized through government policy, and if successfully implemented, it clearly impacts local governments, especially in public service delivery.

Previous studies indicate that e-government implementation in public services improves service efficiency and accelerates administrative processes. Digitalization also increases information transparency and facilitates citizen access to government services. However, e-government implementation still faces challenges, such as limited ICT infrastructure, low digital literacy, and limited human resources for managing digital systems (Waloni et al., 2025). While digital platforms improve access to population administration services, some obstacles remain, including limited public understanding of digital applications and the need to enhance system quality (Kurniawan et al., 2022). E-government implementation is progressing well due to strong value and policy support, yet weaknesses remain in capacity, including human resources and ICT infrastructure, which need improvement for optimal public service delivery (Nurjanna & Ivanna, 2025). Digital population administration services help accelerate service delivery, but challenges such as limited public socialization and ICT infrastructure constraints still affect service optimization (Yusron et al., 2022).

Other studies show that e-government implementation in public service agencies, such as the Population and Civil Registration Office, has positively contributed to service quality improvement. Digital population administration services allow citizens to access services more easily without visiting offices physically. Moreover, digital systems enhance information transparency and minimize inefficient bureaucratic practices. Nevertheless, most previous research has focused on technological implementation and digital service innovation in general. These studies tend to analyze the success of public service digitalization programs without deeply examining how e-government truly contributes to improving public service quality comprehensively. They also emphasize technical aspects of information systems rather than analyzing service quality dimensions experienced directly by citizens.

Based on the above, there remains a research gap regarding how e-government can effectively improve public service quality in population administration. Therefore, this study aims to provide a more in-depth analysis of e-government-based public service implementation and how the system can enhance service quality at the Population and Civil Registration Office. This research is expected to offer a comprehensive understanding of factors influencing the success of e-government in improving public service quality in the population administration sector.

Given this context, improving public service quality through e-government implementation is critical, especially in population administration. This study aims to analyze how e-government implementation improves public service quality in government agencies responsible for population administration. Additionally, it seeks to identify factors that support or hinder the implementation of e-government-based public services.

2. Literature Review

2.1 Public Administration in the Era of Digitalization.

The digital era has brought significant changes to various aspects of society, particularly in the realm of public administration. The integration of digital technology into public service operations has transformed the way governments interact with citizens, manage information, and deliver services. Digital delivery of public services has become an essential component since the emergence of electronic or digital government over the past two decades. Governments at all levels are attracted to the much lower costs of online transactions compared to manual transactions (Mukherjee & Roy, 2017). Digital transformation is viewed as both an opportunity and a challenge for governments in providing services using information technology.

The transformation of public administration in the digital technology era is inevitable in meeting the demands of modern society for faster, more efficient, and accountable services. This process goes beyond mere technology adoption; it represents a structural and cultural reform that touches the very core of public bureaucracy. The application of digital technology in the government sector has changed how data is managed, inter-agency communication is conducted, and services are delivered directly to citizens. By integrating information and communication technology (ICT), governments can simplify procedures, shorten bureaucratic chains, and expand service reach without being limited by space and time. This

digitalization not only improves internal government efficiency but also meets public expectations for more transparent and responsive access to services (Agustin et al., 2025).

The success of digital transformation in public administration is also heavily influenced by the quality of human resources. Continuous training is required to enhance civil servants' capacity to operate digital systems and develop new communication patterns with the public. The synergy between technical skills and public service competence is key to creating high-quality services. In other words, the success of public service digitalization does not solely depend on the sophistication of the system but also on the readiness of the people behind it to understand, manage, and serve the public with empathy (Yunaningsih et al., 2021).

Digital transformation is also closely tied to regulatory frameworks that guide and direct its implementation. Presidential Regulation No. 95 of 2018 on the Electronic-Based Government System (SPBE) and Presidential Instruction No. 2 of 2021 on Accelerating National Digital Transformation provide binding legal foundations that ensure consistent implementation across different levels of government. With these regulations, every public agency has clear guidelines for developing digital systems according to local needs and conditions.

Digitalization of public administration holds significant potential to improve the effectiveness and efficiency of public services. Digital technology can minimize operational costs, simplify administrative processes, and make access to information faster and easier (Jia et al., 2015; Myronchuk et al., 2020). Additionally, because data can be recorded and audited in real time, digital systems enhance transparency and accountability. The use of e-government systems, smart governance, and other digital platforms has demonstrated how technological advancement can improve public service quality and increase public trust in government.

The digital era brings new hope for more transparent and democratic governance. Governments that effectively use digital technology can connect more closely with their citizens through interactive platforms, data-driven services, and digital channels for expressing public aspirations. For example, the concept of Government 4.0 emphasizes citizen involvement in decision-making and policy development based on real-world conditions (Li et al., 2016; Zhidkov, 2017). This shows that digitalization not only enhances efficiency but also increases public participation in public administration systems.

However, public administration digitalization also brings technical and structural challenges. Structural challenges stem from rigid bureaucratic cultures, resistance to change, and limited digital leadership. Technical challenges include system integration, inter-agency data interoperability, and information security vulnerabilities to cyberattacks. While these issues cannot be resolved partially, they require comprehensive and systemic approaches that include legal frameworks and organizational governance elements (Mashudin, 2025).

In the digital era, the transformation of public administration results from global changes characterized by advancements in information and communication technology. This process requires not only technical changes in bureaucratic operations but also a paradigm shift toward clearer, more effective, and accountable governance. Digital innovations such as e-government, big data utilization, and application-based public services have increased public participation and service quality. However, many challenges continue to arise during implementation, including organizational culture resistance, limited human resource capacity, fragmented systems across divisions, and cybersecurity vulnerabilities.

This study finds that digital-era public administration transformation relies on four main pillars: technological readiness, human resource capability, adaptive regulatory frameworks, and cross-sector synergy between government, private sector, and society. Additionally, the use of digital approaches must be combined with the development of new bureaucratic values, such as openness, innovation, and citizen-oriented service. Without digital approaches, quality public services cannot be achieved. Therefore, public administration transformation should be viewed as a reform process encompassing structural, cultural, and managerial aspects of governance, not merely a technical program. Governments must continue to drive this transformation using integrated and sustainable strategies to address contemporary challenges and meet public expectations for faster, more transparent, and inclusive state services (Mashudin, 2025).

2.2 E-Government

In general, the definition of E-Government is an internet-based information management and public service system. This service is provided by the government to the public. By utilizing the internet, numerous service delivery methods can be developed,

enabling active citizen participation. Citizens are expected to independently register for permits, monitor the progress of their applications, and directly access various permits and other public services. With the help of internet technology, all of these activities can be carried out anytime and anywhere (Hardiyansyah, 2003).

Belanger and Carter (2012) define E-Government as the use of information technology to enable and enhance the efficiency of government services provided to citizens, employees, businesses, and institutions. The UNDP (United Nations Development Programme) defines it as: "E-Government is the application of Information and Communication Technology (ICT) by government agencies. E-Government is the use of ICT to promote more efficient and cost-effective government, facilitate more convenient government services, allow greater public access to information, and make government more accountable to citizens" (Indrajit, 2004).

E-Government refers to the use of information technology by government agencies that has the capacity to transform relationships with citizens, businesses, and other government units. The technology can serve various purposes, such as improving citizen services, enhancing interaction with the business and industrial sectors, empowering citizens through access to information, and achieving more efficient government management. The expected outcomes include reduced corruption, increased transparency, greater convenience, higher government revenue, and/or reduced costs (Grönlund, 2008). E-Government is at the forefront of government efforts to provide information and services to the public, business groups, government employees, and community organizations (Yu-Che Chen & James Perry, 2003).

Furthermore, Awan (2015) states that e-Government is the electronic interaction (transactions and information exchange) between government, citizens (individuals and businesses), and employees. Through e-Gov, many objectives can be better served, including providing government services to the public, improving communication with businesses and industries, empowering citizens through access to information, and fostering more competent government management. The most prominent e-Gov service is the provision and use of information pages on the internet, known as the World Wide Web (WWW).

The essence of e-Government goals is to provide online services that are easily accessible to everyone, at any time and place. Additionally, e-Government aims to deliver services without the intervention of public institution staff and without long, complicated queues. Therefore, the fundamental objectives are: Improving public service quality through the use of IT in government processes. Establishing clean, transparent governance that can effectively respond to changing demands. Improving government organization, management systems, and work processes (Blueprint of E-Government Application System, 2004).

2.3 E-Government in Public Services

In general, the purpose of e-government is to enhance the service relationship between the government and various stakeholders, such as citizens, private sectors, tourists, and other government institutions. Globally, e-government is associated with efforts to provide opportunities to improve connectivity, availability, and interaction models between the government and citizens. It is also linked to the transformation of current government services, particularly in efforts to increase efficiency, streamline processes, and automate tasks that were previously carried out by government employees.

The main goal of e-government services is to meet the needs and demands of stakeholders. This is not driven by internal mechanisms but rather by external ones—for example, the requests and expectations of citizens are collected and used as a basis for decision-making in the provision of information technology. If the e-government services provided by the government are truly for the benefit of citizens, it is reasonable for the government to seek to understand the wishes and expectations of citizens regarding e-government services (Mundy & Musa, 2010).

E-Government is also a means for the government to use new technology to provide citizens with convenient access to government information and services, to improve service quality, and to offer greater opportunities to participate in democratic processes and institutions. Meanwhile, Holmes defines e-government as: "...is the use of information technology, in particular the internet, to deliver public services in a much more convenient, customer-oriented, cost-effective, and altogether different and better way. It affects an agency's dealings with citizens, businesses, and other public agencies as well as its internal business processes and employees." (Holmes, 2001)

The implementation of e-government has become a public demand for better services. Additionally, due to the demands of regional autonomy, the government (central or regional) must implement it promptly despite existing limitations. According to Rasyid (2000), in the context of implementing good governance and e-government, there are four basic principles that must be considered: legal certainty, transparency, accountability, and professionalism to improve services and empower the community. According to Hardijanto (2000), improving public services requires continuous efforts to change roles through the optimization of service standards based on principles of speed, accuracy, satisfaction, transparency, and non-discrimination, as well as applying accountability and efficiency considerations.

Parasuraman et al. (1988) stated that public services supported by information technology are very important, as one of the dimensions of service quality is service speed. The shift in communication models driven by the development of information and communication technology has not only occurred in the private sector but has also started in the public sector. A tangible manifestation of the government's commitment is through e-government. The utilization of e-government can transform the interaction pattern between the government and society. Services that were originally queue-based (in-line) have now shifted to online services accessible through government websites.

The e-government models implemented in various countries follow a four-stage development framework in long-term planning. For example, the e-government stages applied in New Zealand are illustrated in four phases: 1) Phase One: Web Presence; 2) Phase Two: Interaction; 3) Phase Three: Transaction; and 4) Phase Four: Transformation (Simangunsong, 2010). To develop e-government, the World Bank (2002) proposed four phases: Presence, Interaction, Transaction, and Transformation (Yustianto, 2006). A similar model is proposed by Gartner Research (Gupta, 2004), called The Value Chain of E-Service, which identifies four stages specifically developed in the context of e-governance.

These four development phases, when contextualized for the development of e-government websites in Indonesia, include:

a. Presence – Establishing regional government websites on the internet. At this stage, basic information needed by the public is displayed on government websites.
b. Interaction – Regional websites provide facilities for interaction between the public and local governments. At this stage, the information displayed is more varied, including download facilities and email communication features on government websites.
c. Transaction – Local government websites not only provide interaction facilities but also support public service transactions.
d. Transformation – At this stage, government services are enhanced in an integrated manner (Gupta, 2004).

2.4 Public Service Innovation.

Innovation is related to something new for individuals, organizations, society, or a specific situation. Innovation itself encompasses the development and implementation of something new. The term "new" here does not necessarily mean an entirely original product, but rather refers to newness. This newness signifies that innovation involves creating and implementing something that already exists into a new combination. The concept of newness is also related to dimensions of space and time (Prabowo et al., 2022).

Innovation consists of generating new ideas and implementing them into new products, processes, or services through a long and cumulative process involving numerous organizational decision-making stages, from idea generation to implementation (Urabe et al., 1988). Innovation is viewed as the process of adopting or implementing new ideas, where these ideas are transformed into actual products or services (Godin, 2014; Osborne, 2013). Innovation has traditionally developed more in the private sector because it is able to escape various barriers that hinder innovation. The private sector has boldly embraced the motto "innovate or die," whereas the public sector still treats innovation as optional. Public institutions never fear "dying" even without any innovation. While a lack of innovation may not lead to the government's demise or dissolution, it will certainly result in a loss of legitimacy and public trust (Prabowo et al., 2022).

The potential benefits of public sector innovation are significant, and the size of the public sector varies by country. On average, the public sector represents about one-third of a country's economy. This indicates that public sector innovation has the potential to contribute substantially to economic growth and national prosperity, both directly by reducing public service costs and improving the quality and structure of services and indirectly by

enhancing the private sector through the expansion and improvement of public infrastructure on which the private sector depends (Osborne & Brown, 2012).

Innovation is necessary to improve and enhance the quality, efficiency, and effectiveness of public service delivery. Through innovation, systems, methods, and technologies can be developed to reduce costs, shorten service times, streamline bureaucracy, and most importantly, build public trust in government performance. Public service innovation represents breakthroughs in service delivery, whether originating from original creative ideas or adaptations/modifications that provide benefits to society, both directly and indirectly. Original creative ideas reflect the positive contribution of a public service provider in offering new innovations (novelty) in its services (Prabowo et al., 2022).

Public sector innovation has emerged from studies dominated by private sector innovation (Moore & Hartley, 2008; Torfing et al., 2020). Innovation is also crucial for effective public service management in dynamic societies, increasingly diverse populations, and individuals demanding higher-quality services. New ICT and communication technologies, new work practices, new forms of social and family organization, and societal changes have fragmented previously homogeneous social groups into more diverse communities.

According to Kuratko (2007), innovation consists of four types:

1) Invention – The creation of a new product, service, or process that has never existed before. This concept is often described as revolutionary.
2) Extension – The development of an existing product, service, or process. This involves applying an idea from something that already exists to make it different.
3) Duplication – Imitation of an existing product, service, or process. However, duplication is not merely copying; it adds a creative touch to improve the concept to remain competitive.
4) Synthesis – Combining pre-existing concepts and factors into a new formulation. This process involves taking several existing ideas or products and reshaping them into something applicable in a new way.

Public sector innovation can relate to new outcomes (e.g., new services), the processes to achieve those outcomes (e.g., co-design methods), and the support provided to facilitate these processes (e.g., innovation labs supporting teams in co-design to achieve innovative results) (Nählinder & Eriksson, 2019). Public sector innovation is often driven by public sector agents (e.g., civil servants, public institutions, state-owned enterprises), and, as noted, frequently involves or impacts actors across the broader ecosystem. However, sometimes public sector innovation can also be driven by actors primarily outside the public sector.

3. Materials and Method

Based on the objectives of the study, which aim to illustrate, explain, or describe the research results comprehensively and in depth, the type of research used is qualitative research. The study on Improving Public Services Based on E-Government is a qualitative study with a case study approach, focusing on the Population and Civil Registration Office of Gresik Regency.

Yin (2015) states that a case study is a preferred research method for tracking contemporary events, especially when the events in question cannot be manipulated. Data collection techniques in this study include: interviews, observations, documentation, and literature review. Informants in this study are determined continuously using purposive sampling, including the Head of the Population and Civil Registration Office of Gresik Regency, the Secretary of the Office, and Heads of Divisions or Sections. The data analysis technique used in this study follows the method developed by McNabb (2002), which includes: grouping the data according to key constructs, identifying bases for interpretation, developing generalizations from the data, testing alternative interpretations, and forming and/or refining generalizable theory from the case study.

The model used in this study is the World Bank E-Government Stages Model (2002) as cited in Yustianto (2006), which includes Presence, Interaction, and Transaction stages.

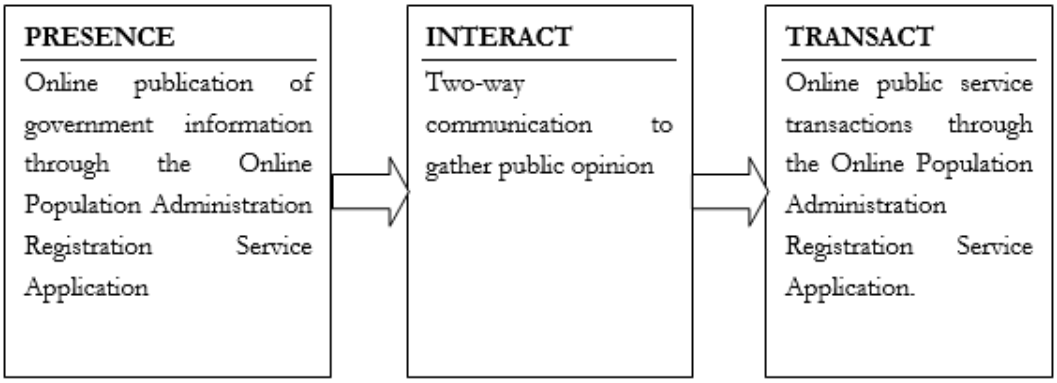

Figure 1. Model Penelitian.

4. Results and Discussion

E-government is part of the bureaucratic modernization efforts aimed at improving the quality of public services through the utilization of information and communication technology. In this study, the analysis is conducted based on the e-government stage model, which illustrates the development of digital technology utilization in the delivery of public services at the Population and Civil Registration Office. This stage model consists of the dimensions Presence, Interaction, and Transaction. Each stage reflects the level of maturity in the implementation of e-government in population administration services.

a. Presence

E-government serves as a means of one-way information dissemination through the use of websites. In this phase, e-government services are provided via the Online Population Administration Registration Service Application from the Population and Civil Registration Office of Gresik, enabling residents to manage population documents such as Family Cards, Certificates, and electronic Identity Cards without queuing. Accessible via poedak.gresikkab.go.id, users only need to register, activate their account with an OTP code, upload their documents, and then download the completed documents.

E-government is part of the efforts to modernize the bureaucracy and improve the quality of public services through the utilization of information and communication technology. In this study, the analysis is conducted based on the e-government stage model, which illustrates the development of digital technology use in public service delivery at the Population and Civil Registration Office. This stage model consists of the dimensions Presence, Interaction, Transaction, and Transformation/Integration. Each stage reflects the level of maturity in the implementation of e-government in population administration services.

Based on the research findings, the Presence dimension in population administration services at the Population and Civil Registration Office of Gresik Regency has been implemented through the provision of an official website and a digital Online Population Administration Registration Service Application accessible to the public. These digital media contain various information related to population administration services, such as document requirements, service procedures, service times, and information about the types of services available.

The digital availability of service information provides convenience for the residents of Gresik Regency to access information quickly without having to visit the service office in person. This indicates that the utilization of information technology at the Presence stage has contributed to improving public service transparency. Openly available information allows the public to better understand service procedures, thereby reducing potential errors in population document management.

Furthermore, the presence of digital platforms also enhances public information transparency, which is a key principle of good governance. By providing service information online, the public can access information anytime and anywhere according to their needs. However, the research findings also show that the utilization of digital information platforms is not yet fully optimal. Some residents are still not clearly aware of the existence of digital information services provided by government agencies. This indicates that further socialization and promotion of digital services are needed so that the public can maximize their use of these resources.

These research findings are consistent with the e-government development model proposed by Layne and Lee (2001), which explains that e-government implementation progresses through four main stages: catalogue (presence), interaction, transaction, and transformation. This model illustrates the maturity level of information technology usage in public service delivery by the government. According to the findings, the Population and Civil Registration Office has shown progress in line with the stages of this model. At the Presence stage, the government agency has provided various population administration service information through the official website and other digital media. This information includes service procedures, document requirements, and the types of services available to the public.

b. Interaction

The Interaction stage represents the development from the Presence stage, where communication between the government and the public begins to occur two-way through digital media. At this stage, the public not only receives information but can also interact with public service providers. Based on the research findings, interaction between the public and the Population Administration service agency the Population and Civil Registration Office of Gresik Regency has been conducted through the Online Population Administration Registration Service Application. This communication platform allows the public to submit questions, complaints, or requests for information related to population administration services.

Through this digital interaction system, the public can receive responses from service officers without having to visit the office in person. This provides convenience for the public in obtaining more specific information regarding population administration services. Additionally, the digital interaction system enables the government to understand the various issues faced by the public in managing population documents. This information can be used as an evaluation tool to improve the quality of public services.

Interactive e-government involves two-way communication, beginning with providing contact information such as email addresses of government officials or response forms that allow users to submit comments, legislative proposals, policies, or organizational feedback. Delivering services through e-government provides broad access for the public, enabling city governments to capture citizen concerns and needs. The research findings indicate that public involvement in the Online Population Administration Registration Service can be seen in citizens' participation in submitting complaints or feedback.

However, the research also shows that the effectiveness of the digital interaction system is still influenced by human resource readiness and the ability of government personnel to manage the digital communication system. In some cases, responses to public questions or complaints via digital media take a relatively long time, which can affect citizen satisfaction with public services.

These findings align with the e-government development model proposed by Layne and Lee (2001), which explains that e-government implementation progresses through four main stages: catalogue (presence), interaction, transaction, and transformation. The Interaction stage is reflected in the two-way communication between citizens and government agencies through digital media, such as online complaint services, email, and social media. Citizens can submit questions or complaints related to population administration services, while the government provides responses to the issues raised.

E-government is not only about government websites and email, or merely providing services via the internet, digital access to government information, or electronic payments. It is about enabling citizens to communicate with the government, participate in governanceespecially in policymaking and interact with one another, contributing to various governmental processes. Building public participation through e-government becomes a key element for expanding governance principles in public service delivery.

c. Transaction.

The Transaction stage is a more advanced phase in e-government implementation, where the public can carry out various service processes electronically. At this stage, public services go beyond simply providing information and communication and allow citizens to manage services online. Based on the research findings, the implementation of the Transaction stage in population administration services at the Population and Civil Registration Office of Gresik Regency has been realized through an online population administration service system. Through this system, the public can submit requests for

population documents, such as Family Cards, birth certificates, and other documents, via a digital platform.

The use of digital transaction services provides several benefits in improving public service efficiency. Document submission processes can be completed more quickly without having to visit the service office in person. In addition, the digital service system reduces queues at the service office, thereby enhancing convenience during the service process. Besides improving efficiency, the digital transaction system also contributes to increasing transparency and accountability in public services. Through the digital system, the document processing status can be monitored more clearly, allowing the public to track the progress of their service requests.

However, the research findings indicate that the implementation of the Transaction stage still faces several challenges, such as limitations in technological infrastructure and varying levels of digital literacy among citizens. Some residents still prefer in-person services because they are not yet accustomed to using digital service systems.

These findings align with the e-government development model proposed by Layne and Lee (2001), which states that e-government implementation progresses through four main stages: catalogue (presence), interaction, transaction, and transformation. At the Transaction stage, citizens are able to manage various population administration services online, such as submitting requests for population documents through the digital service system. This demonstrates that public service delivery has evolved beyond mere information provision to digital transaction services, enabling the public to carry out administrative processes electronically.

According to Heeks (2002), the success of e-government is highly influenced by the alignment between the technology system implemented and the conditions of the organization and the community that uses the services. He introduced the concept of the design–reality gap, which refers to the gap between the design of a technological system and the actual conditions in the field.

Based on the research findings, the implementation of e-government in population administration services at the Population and Civil Registration Office of Gresik Regency has provided various benefits in improving efficiency and transparency in public service delivery. The digital service system enables the public to access service information more quickly and manage population documents more easily. However, the study also identified several challenges in e-government, such as limitations in technological infrastructure, varying levels of digital literacy among citizens, and limited human resources for managing the digital system. These conditions indicate a gap between the design of digital service systems and the actual conditions of the service users. Therefore, for e-government to operate optimally, efforts are needed to reduce this gap by enhancing human resource capacity, strengthening technological infrastructure, and improving digital literacy among citizens.

According to Indrajit (2004), e-government is the utilization of information technology by the government to improve efficiency, effectiveness, transparency, and accountability in governance. Indrajit (2004) also emphasized that e-government implementation should provide added value for citizens as service users. Based on the research findings, the implementation of e-government–based public services at the Population and Civil Registration Office of Gresik Regency has provided numerous benefits for the public. Digitalization of services allows citizens to access services more quickly and easily without having to visit the service office in person.

In addition, the digital service system improves service transparency, as citizens can clearly understand the procedures and requirements for managing population documents. This aligns with Indrajit's (2004) concept of e-government, which emphasizes that the use of information technology in government must enhance the quality of public services. The success of e-government is determined not only by technology but also by organizational readiness, regulatory frameworks, and public participation in utilizing the digital services provided by the government. Therefore, the implementation of e-government needs to be supported by strong policies and the capacity building of government personnel in managing digital service systems.

5. Conclusion

Based on the research findings regarding Improving Public Services Based on E-Government at the Population and Civil Registration Office of Gresik Regency, it can be concluded that in the Presence dimension, the local government has provided digital

information media in the form of an official website and the Online Population Administration Registration Service Application, which are accessible to the public. Through these media, citizens can obtain various information related to population administration services, such as document requirements, service procedures, service times, and the types of services available. The existence of these digital information media demonstrates the government's efforts to increase transparency and facilitate access to public services for citizens.

In the Interaction dimension, communication between the public and the service agency has been facilitated through the digital population administration service application. This system allows citizens to submit questions, complaints, or requests for information related to population administration services quickly and easily. This indicates that the utilization of information technology has supported the development of two-way communication between citizens and public service providers.

In the Transaction dimension, the implementation of online population administration services allows citizens to submit requests for population documents online, such as Family Cards, birth certificates, and other administrative documents. This digital service system provides convenience for citizens because applications can be submitted without visiting the service office in person. Overall, the implementation of e-government in population administration services at the Population and Civil Registration Office of Gresik Regency has provided benefits in improving efficiency, transparency, and accessibility of public services. Service digitalization enables citizens to access information more quickly and simplifies the process of managing population documents more effectively.

The findings of this study contribute to the development of e-government research in the field of public administration, particularly in the context of population administration services at the local government level. This study reinforces the theoretical concept that public service digitalization not only serves as a medium for providing information but also as a platform for interaction and transaction between the government and citizens. Therefore, the findings can serve as empirical evidence showing that e-government implementation in population administration services can improve public service quality through the use of information technology.

Practically, this study provides several implications for managing population administration services in local governments. First, local governments need to continuously improve the quality of digital population administration service systems to provide more effective, efficient, and responsive services to meet public needs. Second, the development of digital service systems should be accompanied by improvements in information technology infrastructure, system security, and the capacity of human resources managing these services. Third, local governments also need to enhance public awareness and socialization regarding the use of digital population administration services so that their utilization can be maximized across all segments of society. Fourth, the integration of population administration service systems with other public service systems should continue to be developed to ensure that public services are delivered in a more integrated and efficient manner.

Although this study has attempted to examine Improving Public Services Based on E-Government in depth, there are several limitations that should be acknowledged as part of academic responsibility. First, this study was conducted at only one local government agency the Population and Civil Registration Office of Gresik Regency—so the findings cannot yet be generalized to other regions in Indonesia. Second, the study primarily focuses on analyzing the implementation of e-government stages in population administration services, so it does not examine other aspects in depth, such as citizen satisfaction, application effectiveness, or factors affecting the success of digital service implementation. Third, the study is limited in terms of research duration and the number of informants, so the data collected are restricted to conditions at the time the research was conducted.

Based on these limitations, several future research agendas are recommended to enrich the study of public administration, particularly in the field of digital governance. Therefore, future research is expected to examine e-government implementation in population administration services across a broader area and use a more comprehensive research approach, such as combining qualitative and quantitative methods, to obtain a deeper understanding of the effectiveness of digital service delivery.

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