

DIGITAL-BASED PUBLIC SERVICE TRANSFORMATION THROUGH THE IMPLEMENTATION OF THE PROBOLINGGO PORTAL: A STUDY AT THE DEPARTMENT OF COMMUNICATION AND INFORMATICS OF PROBOLINGGO REGENCY

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Abstrak

Transformasi digital dalam pelayanan publik menjadi agenda strategis dalam reformasi tata kelola pemerintahan, terutama melalui penerapan sistem berbasis teknologi informasi. Penelitian ini bertujuan untuk menganalisis implementasi Portal Probolinggo sebagai inovasi pelayanan publik berbasis digital di Kabupaten Probolinggo, dengan fokus pada peran Dinas Komunikasi dan Informatika sebagai pengelola utama. Pendekatan kualitatif deskriptif digunakan untuk memahami dinamika implementasi secara mendalam melalui wawancara, observasi, dan dokumentasi. Analisis dilakukan menggunakan kerangka implementasi kebijakan Edward III yang meliputi komunikasi, sumber daya, disposisi pelaksana, dan struktur birokrasi. Hasil penelitian menunjukkan Portal Probolinggo telah mampu mendorong efisiensi pelayanan, meningkatkan transparansi, serta memperluas akses masyarakat terhadap layanan publik. Di sisi lain, implementasi masih menghadapi tantangan pada aspek komunikasi yang belum sepenuhnya efektif, keterbatasan akses infrastruktur digital di beberapa wilayah, variasi tingkat literasi digital masyarakat, serta koordinasi lintas instansi yang belum optimal. Interaksi antar variabel implementasi menunjukkan adanya keterkaitan yang kuat dalam menentukan efektivitas kebijakan, di mana kelemahan pada satu dimensi dapat mempengaruhi kinerja dimensi lainnya. Temuan penelitian menegaskan keberhasilan implementasi pelayanan publik berbasis digital memerlukan pendekatan yang integratif, yang tidak hanya berfokus pada teknologi, melainkan juga pada penguatan kapasitas organisasi, strategi komunikasi yang adaptif, serta peningkatan inklusivitas layanan bagi masyarakat.

Kata Kunci: e-government, pelayanan publik, digitalisasi, implementasi kebijakan, Portal Probolinggo.

Abstract

This Digital transformation in public service delivery has become a strategic agenda in government reform, particularly through the adoption of information technology-based

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systems. This study aims to analyze the implementation of the Probolinggo Portal as a digital public service innovation in Probolinggo Regency, with a focus on the role of the Department of Communication and Informatics as the primary managing institution. A qualitative descriptive approach was employed to explore the implementation dynamics through in-depth interviews, observations, and documentation. The analysis was conducted using Edward III's policy implementation framework, which includes communication, resources, implementers' disposition, and bureaucratic structure. The findings indicate that the Probolinggo Portal has contributed to improving service efficiency, enhancing transparency, and expanding public access to government services. At the same time, several challenges remain, including limited communication effectiveness, uneven digital infrastructure, varying levels of digital literacy among citizens, and suboptimal inter-agency coordination. The interaction among implementation variables demonstrates a strong interdependence, where weaknesses in one dimension affect the overall effectiveness of the policy. The study highlights that successful digital public service implementation requires an integrative approach that goes beyond technological adoption, emphasizing organizational capacity building, adaptive communication strategies, and inclusive service accessibility for citizens.

Keywords: e-government, public service, digital transformation, policy implementation, Probolinggo Portal.

A. Introduction

Digital transformation in the public sector has shifted the orientation of government administration from a conventional administrative approach toward a technology-based system that is more adaptive and responsive to societal dynamics. This change not only reflects technological adoption, but also marks a paradigmatic shift in the relationship between the state and citizens, particularly in the context of public service delivery. Contemporary literature positions digitalization as a strategic instrument for improving service quality, expanding access, and strengthening transparency in government governance.¹

Within this framework, the concept of e-government has developed as an integrative approach that connects information technology with the practice of public administration. Indrajit defines e-government as the government's effort to utilize information technology to strengthen relationships among government, society, and the business sector.² This approach has subsequently been expanded in recent studies that emphasize the creation of public value through the use of digital technology in public service delivery, including improvements in operational efficiency and the quality

¹ Ines Mergel, Noella Edelmann, and Nathalie Haug, "Defining Digital Transformation: Results from Expert Interviews," *Government Information Quarterly* 36, no. 4 (2019): 101385.

² Richardus Eko Indrajit, *Electronic Government: Strategi Pembangunan dan Pengembangan Sistem Pelayanan Publik Berbasis Teknologi Digital* (Yogyakarta: Andi, 2006), 15.

of interaction between government and citizens.³ This trajectory also indicates that digitalization cannot be separated from the agenda of good governance, which demands accountability, transparency, and broader public participation.

Public service, as a primary function of the state, plays a central role in articulating increasingly complex societal needs. Law Number 25 of 2009 affirms that public service encompasses a series of activities aimed at fulfilling citizens' needs carried out in accordance with legal provisions.⁴ Empirical realities still reveal structural problems in public service delivery, such as lengthy bureaucratic procedures, limited access, and low transparency. Dwiyanto underscores the importance of technology-based innovation as a strategy to improve service quality while expanding the reach of public services to society.⁵

Probolinggo Regency has developed the Probolinggo Portal as a form of digital-based public service innovation managed by the Department of Communication and Informatics. This platform is designed as an integrated system that enables the public to access various public services online through a single channel. This initiative reflects the local government's effort to adopt more modern digital governance practices oriented toward the needs of service users. From an implementation perspective, the success of a digital system is determined not only by technological aspects, but also by the alignment between system design, organizational capacity, and the social conditions of user communities.⁶

Studies on public policy implementation provide an analytical foundation for understanding the dynamics of implementing such digital innovation. Edward III argues that policy implementation is influenced by four main variables: communication, resources, implementers' disposition, and bureaucratic structure. These four dimensions interact with one another in determining the effectiveness of policy implementation at the operational level.⁷ Meanwhile, Van Meter and Van Horn emphasize the importance of alignment between policy standards and the implementation environment, including social, economic, and political factors that influence the implementation process.⁸ In the context of digital governance, both

³ Antonio Cordella and Niccolò Tempini, "E-government and Organizational Change: Reappraising the Role of ICT and Bureaucracy in Public Service Delivery," *Government Information Quarterly* 32, no. 3 (2015): 279–286.

⁴ Republik Indonesia, Undang-Undang Nomor 25 Tahun 2009 tentang Pelayanan Publik.

⁵ Agus Dwiyanto, *Manajemen Pelayanan Publik: Peduli, Inklusif, dan Kolaboratif* (Yogyakarta: Gadjah Mada University Press, 2011), 45.

⁶ Richard Heeks, *Implementing and Managing e-Government: An International Text* (London: SAGE Publications, 2006), 78.

⁷ George C. Edward III, *Implementing Public Policy* (Washington, DC: Congressional Quarterly Press, 1980), 10–12.

⁸ Donald S. Van Meter and Carl E. Van Horn, "The Policy Implementation Process: A Conceptual Framework," *Administration & Society* 6, no. 4 (1975): 445–488.

approaches are relevant because technological implementation in the public sector involves complex interactions between technical systems and institutional actors.⁹

A number of recent studies indicate that the implementation of digital services at the local government level often faces multidimensional challenges. Limited technological infrastructure, digital literacy gaps, and low levels of public adoption remain recurring issues across various studies.¹⁰ This condition reveals a gap between digital policy design and the realities of implementation in the field, thereby requiring a deeper empirical analysis to understand these dynamics contextually.

This study employs a qualitative approach with a descriptive design to explore in depth the implementation of the Probolinggo Portal in the context of digital-based public service delivery. This approach enables the examination of experiences, perceptions, and practices occurring within the Department of Communication and Informatics of Probolinggo Regency as the managing institution. Moleong explains that qualitative research is oriented toward understanding social phenomena through the interpretation of meanings constructed by research subjects within their natural context.¹¹

The analysis focuses on four dimensions of policy implementation according to Edward III, namely communication, resources, implementers' disposition, and bureaucratic structure. Research data were obtained through in-depth interviews with purposively selected informants, direct observation of service practices, and documentation studies of relevant institutional documents. Data analysis was conducted using the interactive model of Miles, Huberman, and Saldaña, which includes data reduction, data display, and repeated thematic interpretation.¹² Data validity was maintained through source and method triangulation to ensure the consistency and credibility of the research findings.

Within this context, this study is directed at examining how the implementation of the Probolinggo Portal is carried out in public service practice and the factors that influence its effectiveness within the framework of digital transformation at the local government level.

B. Research Findings

⁹ Laurence J. O'Toole Jr., "Public Management and Policy Implementation," dalam *Handbook of Public Administration* (2017), 300.

¹⁰ Tomasz Janowski, "Digital Government Evolution: From Transformation to Contextualization," *Government Information Quarterly* 32, no. 3 (2015): 221–236; United Nations, *E-Government Survey 2022: The Future of Digital Government* (2022).

¹¹ Lexy J. Moleong, *Metodologi Penelitian Kualitatif* (Bandung: PT Remaja Rosdakarya, 2017), 6.

¹² Matthew B. Miles, A. Michael Huberman, and Johnny Saldaña, *Qualitative Data Analysis: A Methods Sourcebook*, 3rd ed. (Thousand Oaks: SAGE Publications, 2014), 31–33.

The findings indicate that digital transformation in the public sector cannot be understood merely as a process of technological adoption, but rather as a comprehensive reconstruction of how government interacts with society, manages information, and delivers services. In this context, the Probolinggo Portal does not solely function as an administrative tool, but also as an institutional medium representing a paradigm shift in public service delivery at the local level. The Department of Communication and Informatics of Probolinggo Regency plays a central role as a digital orchestrator, namely an actor that integrates technology, organization, and user needs into a coherent service ecosystem. This role aligns with the concept of digital-era governance, which emphasizes service integration, the elimination of bureaucratic barriers, and user-oriented approaches.¹³

The research findings show that the Probolinggo Portal is designed as an integrated platform that consolidates various public services into a single digital channel. This approach reflects a shift from a fragmented service model toward a digital-based one-stop service model. In practice, this integration is not only related to technical aspects, but also involves the harmonization of procedures, standardization of data, and coordination across local government agencies. This complexity demonstrates that portal implementation is not merely a technological project, but rather an institutional process involving the restructuring of public service governance.

From the perspective of policy implementation theory, this phenomenon can be interpreted through the framework of Edward III, which positions communication, resources, disposition, and bureaucratic structure as key variables determining implementation success.¹⁴ These four dimensions do not operate independently, but are interwoven in shaping the dynamics of implementation in practice. The findings indicate that the initial success of the Probolinggo Portal has been largely supported by organizational readiness to adopt technology, while external factors such as digital literacy and access inequality remain limiting variables.

From the standpoint of public value theory, the existence of the Probolinggo Portal can be positioned as an effort by the local government to create public value through improved service efficiency, information transparency, and ease of access for citizens. Cordella and Tempini emphasize that digital technology in the public sector must be evaluated based on its ability to generate value for society, rather than merely administrative efficiency.¹⁵ In this context, the portal has the potential to serve as a

¹³ Helen Margetts dan Patrick Dunleavy, "The Second Wave of Digital-Era Governance," *Philosophical Transactions of the Royal Society A* (2013); Ines Mergel, Sukumar Ganapati, dan Andrew B. Whitford, "Agile: A New Way of Governing," *Public Administration Review* 81, no. 1 (2021): 161–165.

¹⁴ George C. Edward III, *Implementing Public Policy* (Washington, DC: Congressional Quarterly Press, 1980), 10–12.

¹⁵ Antonio Cordella dan Niccolò Tempini, "E-government and Organizational Change: Reappraising the Role of ICT and Bureaucracy in Public Service Delivery," *Government Information Quarterly* 32, no. 3 (2015): 279–286.

strategic instrument for strengthening public trust in government, particularly when the services provided are able to respond to citizens' needs accurately and promptly.

Empirical findings in the field reveal a transformation in the pattern of interaction between society and government. Previously, citizens relied on face-to-face services that often required time, cost, and complex procedures. The presence of a digital portal enables disintermediation, whereby certain administrative processes can be carried out independently by citizens without the need for bureaucratic intermediaries. This phenomenon reflects a shift from bureaucratic-centric service toward citizen-centric service, which is one of the defining characteristics of digital transformation in the public sector.¹⁶

Although this transformation brings positive implications, the dynamics of implementation reveal tensions between technological innovation and social realities. Not all groups of society possess the same level of readiness to adopt digital services. Digital literacy gaps, limited internet access, and differences in educational levels influence the extent to which the portal is utilized. In the literature on digital divide, this condition is often understood as inequality in access and capability to use digital technology, which may lead to social exclusion in public service delivery.¹⁷

In the context of Probolinggo Regency, this gap is evident in the differences in portal usage between urban and rural communities. Citizens with stable internet access and prior experience with technology tend to adapt more quickly to digital services, while others continue to rely on conventional service mechanisms. This situation indicates that the success of portal implementation cannot be measured solely by the existence of the system, but also by its inclusivity in reaching all segments of society.

Furthermore, the implementation of the Probolinggo Portal also reveals internal organizational dynamics that are significant for analysis. The Department of Communication and Informatics, as the primary manager, is not only responsible for technical aspects, but also for building coordination among various agencies involved in service provision. This positions the department as a boundary spanner, namely an actor that bridges various organizational interests within an integrated service system. This role requires high coordination capacity, particularly in aligning service standards, data integration, and workflows across agencies.

In practice, cross-sector coordination often encounters structural challenges, such as differences in information systems, work procedures, and policy priorities among agencies. This condition reflects what is referred to as institutional fragmentation, a situation in which public organizations operate in isolated silos, thereby hindering

¹⁶ OECD, *Digital Government Index 2019 Results* (Paris: OECD, 2020), 45–47.

¹⁷ Jan van Dijk, *The Digital Divide* (Cambridge: Polity Press, 2020), 25–30.

service integration.¹⁸ Therefore, portal implementation requires not only technological readiness, but also institutional transformation that supports cross-sector collaboration.

From the perspective of service users, public perceptions of the Probolinggo Portal tend to be positive, particularly in terms of ease of access and time efficiency. Citizens who have utilized the portal perceive the service as more practical and transparent compared to conventional mechanisms. This perception aligns with findings in studies on e-government adoption, which show that ease of use and perceived usefulness are key factors driving technology adoption among citizens.¹⁹

Nevertheless, there are also groups of citizens who still demonstrate resistance toward the use of digital services. This resistance is not necessarily associated with rejection of technology, but rather with limited understanding and experience in using digital systems. In this context, approaches that are overly technology-oriented without considering social dimensions may hinder the success of policy implementation.

1. Communication Dimension: Information Fragmentation and Policy Translation Challenges

Communication in digital policy implementation is not merely related to the dissemination of information, but also concerns the process of translating policy into language that can be understood by society as end users. The research findings reveal that the Department of Communication and Informatics of Probolinggo Regency has utilized various formal communication channels, such as official websites, social media, and direct socialization activities. This diversification of channels reflects institutional awareness of the importance of information dissemination in encouraging the adoption of digital services.

On the other hand, communication effectiveness still faces challenges at the level of public understanding. Some members of society have not been able to fully interpret the information conveyed, particularly regarding portal usage procedures and the concrete benefits that can be obtained. This situation indicates the existence of a policy translation gap, namely a disparity between the technocratic language of policy and the heterogeneous capacity of public understanding. Within Edward III's framework, this condition shows that communication has not fully met the principles of clarity and consistency.²⁰

Studies in the field of digital government communication demonstrate that the success of digital policy communication is highly dependent on the government's ability

¹⁸ Tomasz Janowski, "Digital Government Evolution: From Transformation to Contextualization," *Government Information Quarterly* 32, no. 3 (2015): 221–236.

¹⁹ Viswanath Venkatesh, James Y. L. Thong, dan Xin Xu, "Unified Theory of Acceptance and Use of Technology: A Synthesis and the Road Ahead," *Journal of the Association for Information Systems* 17, no. 5 (2016): 328–376.

²⁰ George C. Edward III, *Implementing Public Policy* (Washington, DC: Congressional Quarterly Press, 1980), 10–12.

to adapt messages to the characteristics of its audience. Criado, Sandoval-Almazan, and Gil-García emphasize that effective digital communication requires a participatory approach, in which society is not only a recipient of information but also part of the interaction process.²¹ In this context, one-way communication approaches that are purely informative tend to be less effective than dialogical approaches that allow feedback from users.

Field findings also indicate that the intensity of socialization has not been fully accompanied by the quality of message delivery that is easily understood. The use of technical terminology in explaining digital services has become one of the factors hindering public comprehension. This reinforces the argument that digital policy communication requires a user-centered communication strategy, where language, media, and information formats are adjusted to the level of digital literacy of the public.²²

In the local context, communication effectiveness is also influenced by the diverse social structure of society. Groups with higher levels of education and access to technology tend to understand and utilize digital services more quickly, while others require more contextual approaches, such as through community leaders or community forums. This community-based approach becomes important in bridging information gaps and increasing the adoption rate of digital services more evenly.

2. Resource Dimension: Technological Capacity and Access Inequality

Resources in digital policy implementation encompass two main dimensions, namely technological capacity and human capacity. The research findings indicate that the Department of Communication and Informatics of Probolinggo Regency possesses adequate basic infrastructure to manage the Probolinggo Portal, including server systems, networks, and supporting software. From the human resource perspective, there are technical personnel with competencies in information system management, which constitute an essential prerequisite for portal operation.

Although internal capacity is relatively adequate, the main challenge arises in terms of accessibility at the community level. Unequal internet network distribution in several regions results in limited access to digital services. This condition reflects the presence of a structural digital divide, where geographical and infrastructural factors serve as primary determinants of technological access.²³ In this context, the implementation of the Probolinggo Portal has not yet fully reached all segments of society equally.

²¹ J. Ignacio Criado, Rodrigo Sandoval-Almazan, dan J. Ramon Gil-García, "Government Innovation through Social Media," *Government Information Quarterly* 30, no. 4 (2013): 319–326.

²² John Carlo Bertot, Elsa Estevez, dan Tomasz Janowski, "Universal and Contextualized Public Services: Digital Public Service Innovation Framework," *Government Information Quarterly* 33, no. 2 (2016): 211–222.

²³ Jan van Dijk, *The Digital Divide* (Cambridge: Polity Press, 2020), 25–30.

In addition to infrastructure, the quality of human resources also constitutes a crucial factor in the sustainability of implementation. Digital transformation demands continuous competency development, particularly in responding to rapid technological advancements. The OECD emphasizes that strengthening public sector capacity is a key element in digital government strategies, especially in aspects such as digital skills, data management, and service design.²⁴

The findings indicate that some personnel already possess adequate technical capabilities; however, capacity development still needs to be expanded, particularly in terms of service innovation and understanding user needs. This is important because digital services are not only concerned with system operation, but also with the ability to design services that meet public expectations. In the service design literature, a user-centered approach is considered a fundamental principle in the development of digital public services.²⁵

Resource limitations are also evident in the budgetary aspect, particularly in the development and maintenance of sustainable systems. The implementation of digital portals requires not only initial investment but also continuous funding to ensure that systems remain relevant and secure. In this context, the sustainability of implementation is highly dependent on the commitment of local governments to provide adequate budgetary support.

3. Disposition Dimension: Institutional Commitment and Innovation Orientation

The disposition of implementers reflects the attitudes, commitment, and orientation of officials in executing policy. The research findings demonstrate a strong commitment among the personnel of the Department of Communication and Informatics in developing and managing the Probolinggo Portal. This commitment is reflected in continuous efforts in system maintenance, service feature development, and the improvement of portal operational quality.

Orientation toward innovation represents a key characteristic in the disposition of implementers. Officials demonstrate openness to change and a willingness to adopt new technologies in improving service quality. In the perspective of policy implementation, a positive disposition is often associated with a higher level of success, as it reflects alignment between policy objectives and implementers' attitudes.²⁶

On the other hand, the findings also indicate challenges related to responsiveness to user needs. Digital services require speed and accuracy in responding to requests and public complaints. Slow or inconsistent responses may influence public perceptions of

²⁴ OECD, *Digital Government Index 2019 Results* (Paris: OECD, 2020), 50–55.

²⁵ Dennis Linders, "Public Sector Digital Service Design: The Role of User-Centered Approaches," *Government Information Quarterly* 36, no. 4 (2019): 101387.

²⁶ Donald S. Van Meter dan Carl E. Van Horn, "The Policy Implementation Process: A Conceptual Framework," *Administration & Society* 6, no. 4 (1975): 445–488.

service quality. In studies on digital service delivery, responsiveness constitutes one of the primary indicators for assessing the quality of digital public services.²⁷

Furthermore, there are indications that service orientation remains in a transitional stage from an administrative model toward a more user-oriented model. This transformation requires changes in organizational culture, where officials no longer act solely as policy implementers but also as service providers who are responsive to public needs. This cultural shift presents a distinct challenge, particularly in public organizations characterized by strong bureaucratic traditions.

4. Bureaucratic Structure Dimension: System Integration and Coordination Complexity

The bureaucratic structure in the implementation of the Probolinggo Portal demonstrates efforts to simplify service procedures through the integration of digital systems. The division of tasks and responsibilities within the Department of Communication and Informatics has been clearly designed, thereby supporting the systematic operationalization of the portal. An integrated digital system enables service processes to become more efficient and transparent.

Although the internal structure is relatively well-organized, the primary challenge arises in terms of inter-agency coordination. The Probolinggo Portal integrates various services originating from different regional government organizations, thus requiring synchronization of data, procedures, and service standards. In practice, this coordination does not always function optimally, particularly when there are differences in information systems or internal policies among agencies.

This phenomenon reflects the complexity of multi-level governance, in which policy implementation involves multiple actors with differing interests and capacities. Janowski emphasizes that digital transformation in government requires strong cross-sector integration to avoid service fragmentation.²⁸ Without effective coordination, system integration may result in inconsistencies in information and delays in service delivery.

In this context, the Department of Communication and Informatics functions as the primary connector in ensuring that system integration operates effectively. This role demands high coordination capacity, particularly in aligning service standards and working mechanisms across agencies. Therefore, strengthening coordination structures and developing system interoperability constitute important aspects in improving the effectiveness of portal implementation.

²⁷ Ines Mergel, Noella Edelman, dan Nathalie Haug, "Defining Digital Transformation: Results from Expert Interviews," *Government Information Quarterly* 36, no. 4 (2019): 101385.

²⁸ Tomasz Janowski, "Digital Government Evolution: From Transformation to Contextualization," *Government Information Quarterly* 32, no. 3 (2015): 221–236.

5. Dynamics of Implementation Impact: Reconstruction of Service Patterns and User Experience

The implementation of the Probolinggo Portal demonstrates a fundamental shift in public service patterns at the local level, particularly in terms of access mechanisms, interaction, and user experience. This transformation is not limited to the digitalization of administrative procedures, but also reflects a change in service logic from a model based on physical presence to one based on digital access. In practice, citizens are no longer entirely dependent on direct interaction with officials, but are able to access services independently through the available system.

The findings indicate that this transformation has contributed to increased efficiency in service processes. The time previously required to process services through direct interaction has been significantly reduced, particularly for administrative services. In addition, transaction costs borne by citizens have also decreased, both in terms of transportation expenses and other indirect costs. In digital government literature, such efficiency is often positioned as one of the primary indicators of successful technology-based service implementation.

In addition to efficiency, the dimension of transparency has also been strengthened through service digitalization. Information regarding procedures, requirements, and service status has become more easily accessible to the public. This condition expands opportunities for citizens to monitor and control the service process. Janssen and van den Hoven explain that digital transparency has the potential to enhance government accountability, particularly when information is presented openly and can be verified by the public.²⁹

Nevertheless, user experience is not homogeneous. Some citizens experience significant ease in using the portal, while others still encounter difficulties in accessing and understanding the system. This variation reflects differences in user experience influenced by levels of digital literacy, technological access, and prior experience in using digital services. Within the technology acceptance perspective, this condition is closely related to factors such as perceived ease of use and perceived usefulness among users.³⁰

C. Discussion

1. Interdependence of Implementation Variables: Dynamic Relations Across Dimensions

The analysis of the four implementation variables reveals the presence of interrelated influences among communication, resources, disposition, and bureaucratic

²⁹ Marijn Janssen dan Jeroen van den Hoven, "Big and Open Linked Data (BOLD) in Government: A Challenge to Transparency and Privacy?" *Government Information Quarterly* 32, no. 4 (2015): 363–368.

³⁰ Viswanath Venkatesh, James Y. L. Thong, dan Xin Xu, "Unified Theory of Acceptance and Use of Technology: A Synthesis and the Road Ahead," *Journal of the Association for Information Systems* 17, no. 5 (2016): 328–376.

structure. These variables do not operate independently, but rather form a dynamic system in determining the effectiveness of the Probolinggo Portal implementation.

Suboptimal communication, for instance, not only affects the level of public understanding, but also influences the utilization of available resources. Adequate technological infrastructure will not generate significant impact if citizens lack sufficient information to access services. In this context, communication functions as a bridge between technological capacity and the level of adoption among the public.

Limited resources, particularly in terms of internet access, also have implications for communication effectiveness. Information disseminated through digital media cannot be accessed evenly by all citizens, thereby creating disparities in information distribution. This condition demonstrates that the success of communication is highly dependent on the availability of supporting infrastructure.

The disposition of implementers also influences how communication and resources are utilized in practice. Officials with high levels of commitment tend to be more proactive in disseminating information and optimizing the use of available resources. Conversely, limitations in responsiveness may hinder service effectiveness, even when the system itself is adequate.

The bureaucratic structure serves as the framework that regulates the interaction among these variables. Suboptimal inter-agency coordination may obstruct information flow and reduce the efficiency of resource utilization. In this context, bureaucratic structure functions not only as a regulatory mechanism, but also as a determinant of integration quality in policy implementation.

This interdependent relationship indicates that the implementation of the Probolinggo Portal should be understood as a complex system, in which changes in one variable will influence other variables. A partial approach risks producing suboptimal policies, as it fails to consider the interconnections among implementation dimensions.

2. Theoretical Implications: Relevance of Implementation Models in the Context of Digital Governance

The findings of this study contribute to the development of policy implementation studies, particularly within the context of digital governance at the local level. The Edward III model used as an analytical framework demonstrates strong relevance in explaining the dynamics of Probolinggo Portal implementation.³¹ The four variables identified in the model are capable of capturing various aspects that influence implementation success, both from internal organizational and external perspectives.

At the same time, the findings also indicate that digital policy implementation possesses characteristics that are more complex than conventional policy

³¹ George C. Edward III, *Implementing Public Policy* (Washington, DC: Congressional Quarterly Press, 1980), 10–12.

implementation. The interaction between technology, organization, and society creates dynamics that require a more integrative analytical approach. In contemporary literature, the concept of digital-era governance emphasizes the importance of system integration, user orientation, and adaptation to technological change as key elements in public sector transformation.³²

In this context, classical policy implementation models can be enriched by incorporating technological dimensions and user experience as additional variables. This approach allows for a more comprehensive analysis of digital policy implementation, particularly in understanding how technology influences the interaction between government and society.

3. Practical Implications: Strengthening Digital Service Implementation Strategies

The findings of this study provide several practical implications for the development of digital-based public services at the local government level. First, communication strategies need to be directed toward more adaptive and user-based approaches, taking into account the social characteristics and levels of digital literacy among citizens. The use of simple language, accessible media, and community-based approaches constitutes important elements in improving the effectiveness of service dissemination.

Second, strengthening resources should be carried out simultaneously in terms of infrastructure and human capacity. Equitable internet access is a primary prerequisite for ensuring the inclusivity of digital services, while enhancing the competencies of public officials is necessary to support sustainable service innovation.

Third, improving service responsiveness is an aspect that requires attention in portal management. Fast feedback mechanisms and integrated response systems can enhance user experience and strengthen public trust in digital services.

Fourth, strengthening inter-agency coordination is key to improving the effectiveness of portal implementation. The integration of information systems, standardization of procedures, and the development of more flexible coordination mechanisms can support the creation of more integrated services.

C. Conclusion

The study on the implementation of the Probolinggo Portal as an instrument for digital-based public service transformation in Probolinggo Regency reveals a complex dynamic that is influenced not only by technological aspects, but also by the interaction among institutional factors, resource capacity, and the characteristics of user communities. The analysis, which is grounded in Edward III's policy implementation

³² Patrick Dunleavy, Helen Margetts, Simon Bastow, dan Jane Tinkler, "New Public Management Is Dead—Long Live Digital-Era Governance," *Journal of Public Administration Research and Theory* 16, no. 3 (2006): 467–494; Ines Mergel, Sukumar Ganapati, dan Andrew B. Whitford, "Agile: A New Way of Governing," *Public Administration Review* 81, no. 1 (2021): 161–165.

framework, indicates that the effectiveness of portal implementation is largely determined by the interrelationship among the dimensions of communication, resources, implementers' disposition, and bureaucratic structure, all of which operate simultaneously and influence one another.

Within the communication dimension, efforts to disseminate information through various channels have not fully reached all segments of society evenly. Variations in users' understanding of the portal's functions and mechanisms indicate the existence of a gap in translating policy into practical usage. This condition underscores the importance of adopting communication strategies that are more adaptive, contextual, and aligned with the social characteristics of service users.

From the perspective of resources, the availability of technological infrastructure and the competencies of personnel within the Department of Communication and Informatics provide a relatively strong foundation for supporting portal implementation. At the same time, limitations in internet access in several regions, along with the need for continuous human resource development, indicate that implementation success is not solely dependent on internal organizational readiness, but is also influenced by external conditions that affect service accessibility for citizens.

The disposition dimension reflects a relatively high level of institutional commitment in developing and managing the Probolinggo Portal. Openness to innovation and sustained system development serve as key factors reinforcing policy implementation. Nevertheless, responsiveness to user needs and feedback requires further strengthening, particularly in the context of digital services that demand speed and accuracy as essential indicators of service quality.

Within the bureaucratic structure dimension, the existence of structured working mechanisms and integrated digital systems has contributed to improving service efficiency. The main challenge lies in inter-agency coordination, which has not yet been fully optimized, considering that the portal integrates services from various regional government organizations with differing systems and procedures. This condition highlights the necessity of strengthening institutional integration and harmonizing information systems to support overall implementation effectiveness.

Empirically, the implementation of the Probolinggo Portal has produced tangible impacts in enhancing efficiency, transparency, and ease of access to public services. The transformation in the interaction pattern between citizens and government reflects a shift toward a more user-oriented service model. At the same time, variations in digital literacy levels and technological access among citizens indicate that service inclusivity remains a critical issue in the development of digital policies at the local level.

The findings of this study emphasize that the implementation of digital-based public services constitutes a multidimensional and continuous process, requiring synergy among technology, organization, and society. The analysis also demonstrates that the

success of digital transformation is not solely measured by the existence of systems, but by the extent to which those systems can be accessed, understood, and optimally utilized by citizens as service users.

Daftar Pustaka

- Bertot, J. C., Estevez, E., & Janowski, T. (2016). Universal and contextualized public services: Digital public service innovation framework. *Government Information Quarterly*, 33(2), 211–222. <https://doi.org/10.1016/j.giq.2016.05.004>
- Cordella, A., & Tempini, N. (2015). E-government and organizational change: Reappraising the role of ICT and bureaucracy in public service delivery. *Government Information Quarterly*, 32(3), 279–286. <https://doi.org/10.1016/j.giq.2015.03.005>
- Criado, J. I., Sandoval-Almazan, R., & Gil-García, J. R. (2013). Government innovation through social media. *Government Information Quarterly*, 30(4), 319–326. <https://doi.org/10.1016/j.giq.2013.10.003>
- Dunleavy, P., Margetts, H., Bastow, S., & Tinkler, J. (2006). New public management is dead—long live digital-era governance. *Journal of Public Administration Research and Theory*, 16(3), 467–494. <https://doi.org/10.1093/jopart/mui057>
- Dwiyanto, A. (2011). *Manajemen pelayanan publik: Peduli, inklusif, dan kolaboratif*. Gadjah Mada University Press.
- Edward III, G. C. (1980). *Implementing public policy*. Congressional Quarterly Press.
- Heeks, R. (2006). *Implementing and managing e-government: An international text*. SAGE Publications.
- Indrajit, R. E. (2006). *Electronic government: Strategi pembangunan dan pengembangan sistem pelayanan publik berbasis teknologi digital*. Andi.
- Janowski, T. (2015). Digital government evolution: From transformation to contextualization. *Government Information Quarterly*, 32(3), 221–236. <https://doi.org/10.1016/j.giq.2015.07.001>
- Janssen, M., & van den Hoven, J. (2015). Big and open linked data (BOLD) in government: A challenge to transparency and privacy? *Government Information Quarterly*, 32(4), 363–368. <https://doi.org/10.1016/j.giq.2015.11.007>
- Linders, D. (2019). Public sector digital service design: The role of user-centered approaches. *Government Information Quarterly*, 36(4), 101387. <https://doi.org/10.1016/j.giq.2019.101387>
- Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly*, 36(4), 101385. <https://doi.org/10.1016/j.giq.2019.06.002>
- Mergel, I., Ganapati, S., & Whitford, A. B. (2021). Agile: A new way of governing. *Public Administration Review*, 81(1), 161–165. <https://doi.org/10.1111/puar.13202>

- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE Publications.
- Moleong, L. J. (2017). *Metodologi penelitian kualitatif (Edisi revisi)*. PT Remaja Rosdakarya.
- OECD. (2020). *Digital government index 2019 results*. <https://www.oecd.org/gov/digital-government-index-2019-results.htm>
- Undang-Undang Republik Indonesia Nomor 25 Tahun 2009 tentang Pelayanan Publik. <https://peraturan.bpk.go.id/Home/Details/38748/uu-no-25-tahun-2009>
- United Nations. (2022). *E-government survey 2022: The future of digital government*. <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2022>
- Van Dijk, J. (2020). *The digital divide*. Polity Press.
- Van Meter, D. S., & Van Horn, C. E. (1975). The policy implementation process: A conceptual framework. *Administration & Society*, 6(4), 445–488. <https://doi.org/10.1177/009539977500600404>
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems*, 17(5), 328–376. <https://doi.org/10.17705/1jais.00428>.