

Digital Transformation of Public Services: An Analysis of the Effectiveness of Online Services at the Local Government Level

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Article information	Abstract
DOI : 10.25077/jds.1.2.92-101.2024 Correspondence : indranurindar@gmail.com	This study examines the effectiveness of online services at the local level (District) Office which sees the existence of E-Gov encouraging the government to create good governance in providing information needs and transparency to the community. The renewal of public services in the reform era is the main focus of the government as an effort to realize good governance. The research method used is qualitative. This research uses the concept proposed by Pedrosa et al (2022) which uses eight indicators of the effectiveness of digital public services: ease of use, usefulness, simplicity, reliability, availability, understandable, consistent, and fast. The results showed that online-based services at the agency were effective in several aspects, such as trust and availability, but there were still shortcomings in the aspects of simplicity and consistency. Online services are considered easy to find through familiar channels and have a fast response, less than an hour. Nevertheless, the implementation of online service SOPs still needs to be improved. This study concludes that online services have become an attractive asset in the effort to transform the digitalization of public services.
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INTRODUCTION

E-Government (E-Gov) has become a booming concern, as it is considered a way to make government smarter. It is an attempt to maximize service delivery and provide citizens with new ways and tools to interact with the government. Therefore, people can expect better, cheaper, faster, and more accessible services. Meanwhile, David McClure (2000) says that E-government refers to the government's use of technology, particularly web-based Internet applications to improve access and delivery of government information and services to citizens, business partners, employees, and others. The urgency encourages rapid development, which is in line with the advancement of information technology in multi-aspects by various organizational resources both government and private.

On one hand, the existence of E-Gov encourages the government to create good governance in providing information needs and transparency to the public. On the other hand, E-Gov also allows renewal of public services in the reform era which is the main focus of the government as an effort to realize good governance. One of the updates carried out is transforming traditional services towards those that are considered more modern using digital media. The assumption that E-Government is more modern with the use of digital technology has a responsibility in the process of improving effectiveness, efficiency, and service delivery (Forman, 2005). Adopting information and communication technology (ICT) has become essential in everyday life in the 21st century (Jonathan & Rusu, 2019). As a result of the widespread use of the Internet, governments around the world have adopted e-government services, and their use has grown rapidly. Thus, almost every government policy design must consider the public as users, so that policymakers can gain insight into citizen behavior by understanding their attitudes towards the adoption and non-adoption of e-government services (Iong & Phillips, 2023).

In the Global context, several studies provide an overview of successful e-government projects

revealing factors that influence the growth and maturity of e-government (Krishnan et al, 2017). E-gov in its development has been widely studied and researched with various focuses, such as Readiness Level, E-Gov Maturity Level, and Effectiveness of its implementation. The level of readiness as conducted by Pingali et al (2023) proposed a digital readiness model relating to small and medium enterprises by considering. They measure various indicators such as leadership factors, strategic focus factors, resource factors, customer factors, and market factors. The model assumes that the digital readiness construct consists of 3 elements: technology creation, agility, and new technology implementation. Other studies such as Silva, Saraiva, and Mamede (2022) encourage models to assess non-technological aspects of an organization that affect the readiness of small and medium enterprises to carry out successful digital transformation. In a corporate context, digital readiness was conducted by Brozzi & Matt (2023) who proposed a set of key indicators for corporate digital readiness relating to areas such as strategy, technology requirements, digital trend recognition, or employee competencies. In terms of developmental dynamics, Holopainen, Ukko and Saunila (2022) focus on different aspects. They point out a number of actions that companies should take to improve their level of digital readiness, such as: finding a balance between intuitive and data-driven decision-making, implementing new technologies and building the right culture, developing leadership capabilities to enable strategic development, finding a balance between readiness and willingness to use digital operations, and improving inter-organizational collaboration in the use of digital technologies.

Thus, maturity level has become one of the most commonly used tools to understand the level of digital readiness of companies (Felch et al., 2019). To assess digital maturity, organizations can rely on maturity models designed for the evaluation of the level of adoption and implementation of digital technologies (Schumacher et al., 2016), which are among the most common assessment tools and have received increasing interest from practitioners and academics (Mettler et al., 2010; Asdecker & Felch, 2018). These models are progressive models that help organizations achieve expected skills in certain dimensions such as culture, processes, and resources, through evaluating organizational readiness for digital transformation goals (Mittal et al., 2018).

Meanwhile, the effectiveness of E-Gov implementation is a broader and multidimensional concept. In general, the effectiveness of a public service is one of the determining factors for the success of the government in carrying out its role as an element of state administration. Concerning Digitalization or Electronic Government, efforts to transform services into the digital realm are tactical steps for the government to realize effective services. Effectiveness is defined as the perception of change that occurs, whereas efficacy refers to the extent of the goal to be achieved. Effectiveness plays a key role in producing desired social outcomes. It aims to guarantee practical results, as there is no point in having the most satisfactory results if it is impossible to realize the impact of the service on society. In this case, effectiveness is closely related to the search for user satisfaction (Førsund, 2017).

In the Indonesian context, the implementation of digital-based (online) services has been carried out by almost all government agencies because it has a compelling regulatory basis. This application is a tactical step by the government to realize bureaucratic reform and service innovation to improve the quality of public services. The classic bureaucratic model that is full of convoluted services, long and long procedures, the practice of nepotism, and the existence of illegal levies, can be massively reduced if the service mechanism is carried out through the internet network. More specifically, population administration services are one form of service that also uses digital means in its implementation. The institution that is the leading sector in this matter fully encourages the creation of online-based population administration services. Several policies, encourage every agency within the scope of population administration affairs to use electronic facilities in serving and processing community population documents. Meanwhile, from the local aspect, the Population and Civil Registration Office of Bantaeng Regency as an agency that covers population administration services at the regional (district) level has been organizing services through online facilities since 2020. The Local Government provides 9 types of population administration

document services through online means. In 2021, the number of people served through online means reached 9,067 people. They have utilized the online channels used by the agency in serving including the official website, WhatsApp Messenger application, and Google Mail (Gmail). Their shortcoming is that there is no independent platform created officially by the local government. Despite these shortcomings, the utilization of digital/electronic facilities and infrastructure in services still encourages the achievement of more proportional needs.

This research seeks to use a systematic approach to determine the level of effectiveness of online population administration services at the Population and Civil Registration Office of Bantaeng Regency. The level of effectiveness is measured through qualitative elaboration sourced from the narrative of relevant sources and observations at the research location. This research seeks to describe in-depth and thoroughly the aspects inherent in online services, where the study is not only limited to the interaction process between service providers and users but also other aspects that affect the service. To answer the above phenomenon, this research uses the concept of Pedrosa, et. al. (2020) which postulates indicators to evaluate the effectiveness of digital public services. This model consists of 8 (eight) indicators, namely ease of use, useful, simple, reliable, available, understandable, consistent, and fast.

The selection of these indicators aims to examine in a focused manner and produce a specific description of online-based services. The selection of this “special” concept is also based on a reflection on the assessment of the effectiveness of online services in some literature that uses concepts or theories of effectiveness that tend to be general. This implicitly or explicitly has implications for general conclusions as well. For this reason, by referring to the 8 (eight) indicators of the effectiveness of digital public services according to Pedrosa, et. al. (2020), the resulting conclusions can be more comprehensive on the level of effectiveness of online-based services.

There are many indicators or approaches that have been carried out in an effort to evaluate e-government, one of which is how Kearns (2004) focused his research on the performance of digital-based public services by considering the quality of public service delivery, outcomes, and trust. In addition, the Russian Federation in an article compiled by Golubeva (2007) assesses effectiveness through the level of public service quality, trust, and results. Meanwhile, according to Carrara (2007), France initiated a framework for evaluating information technology with a focus on the financial benefits of e-government projects. The point of the description of the differences in perspective above is how to evaluate and assess success, and become a new proposal compared to the assessment conducted by the private sector. This is believed to be due to the orientation of business and the state which has a different value perspective so that it has different concerns.

This research uses the effectiveness of digital public services concept proposed by Pedrosa, et. al. (2020). This concept contains an accumulation of indicators that are most commonly used in various studies on the effectiveness of digital public services. As a goal, programs seen from the perspective of Public Administration emphasize efforts to minimize waste so as to create effective public services. The proposed indicators are believed to be able to assess analyze a public service that can be understood as public value by the community at large. Furthermore, according to Bertot et al (2010), the indicators proposed in this study refer to the provision of services that are really needed and will be used. This approach provides a new way of thinking about the evaluation of government activities and a new conceptualization of public interest and social value creation. In a citizen-centered approach, developing services without considering user demands can lead to low levels of service use.

METHODS

To examine and interpret research problems, the method used as an approach is a qualitative method. According to John W. Creswell (2018: 51) in the book *Research Design*, qualitative research is one type of method to describe, explore, and understand the meaning in several individuals or a group

of people ascribed to social or humanitarian problems. Through a qualitative approach, this research seeks to describe in detail the phenomena inherent in online-based services at the Population and Civil Registration Office of Bantaeng Regency.

The research location is at the office of the Population and Civil Registration Office of Bantaeng Regency which is located in two different locations, namely at the Bantaeng Regency Public Service Mall and the office of the secretariat section of the Population and Civil Registration Office of Bantaeng Regency. Meanwhile, the informants who are the main data sources in this research consist of employees totaling 6 (six) and the community totaling 5 (five).

The majority of employee informants in this study are structural officials who head each field in the service agency, plus one online service operator. The determination of these informants is based on their competence so that they are able to provide more valid and comprehensive information. Meanwhile, the determination of the community as informants aims to obtain information from the perspective of service users.

RESULTS

Online-based services have been implemented by the Population and Civil Registration Office of Bantaeng Regency since 2020. Throughout the implementation of online-based services that lasted for less than three years, there were many changes in the methods and systems of public services provided. These changes require the ability to use digital facilities and infrastructure in the service process. In addition to the service process, digital facilities are also used in aspects of the management information system, such as population data management and presentation of information channels.

In detail, the following is a description of the effectiveness of online-based services based on the 8 (eight) effectiveness indicators used.

Ease of Use

Online services through the channels provided are easy to use by the community (service users), especially the main channel for online services, namely WhatsApp (WA). The utilization of WA as a service channel is fairly appropriate because WA is the easiest and most popular media used by the community.

Helpful

Online services are beneficial for service employees and the community. The benefits for employees are in the form of efficiency in time and energy, so that documents are completed more quickly and the number of people served can be more. As for the community, it is also beneficial in terms of time efficiency, where people can do other activities besides taking care of documents.

Simple

Online services do not meet the simple indicator. This can be seen from the accessibility of the community to online services which is not comprehensive. There are still residents who are unable to access online services, especially residents in rural areas. This is due to the lack of information obtained regarding online services and limited access to facilities such as gadgets and other electronic devices, as well as knowledge related to the use of technology.

On the other hand, for people who can access online services, the service process obtained can be said to be straightforward because it only goes through one operator (WhatsApp) to take care of population documents. The process of service interaction between employees and users is not difficult and long, so it can satisfy and facilitate users.

Reliable

Online services can be said to be trusted in terms of the security of the data of the people served.

This can be seen from the use of the Centralized SIAK application to manage data (inputting, storing, and controlling) of the population of Bantaeng Regency, which is a private and very closed application in terms of accessibility. Management and access to the Centralized SIAK application is only carried out by authorized employees, which refers to the Standard Operating Procedure (SOP).

Available

Online services are available to the community. Availability means that online services can reach and be accessed by people in all areas of Bantaeng Regency, which consists of 67 villages and sub-districts. This availability also means that online services can be accessed by the community without obstacles such as internet networks, limited technological devices (devices, computers, and so on), and stuttering in using information and communication technology media (WhatsApp, websites, and so on). This is due to the Village Authority-Based Administration Service (LABKD) provided by the Population and Civil Registration Office.

Understandable

Regarding the presentation of online service information, it can be concluded that the information is understandable. This conclusion is based on the statements of employees of the Population and Civil Registration Office and the people who receive services. Department employees stated about the provision of information through various channels, both online and offline.

The community confirms the presentation of information, where the community knows and understands information through explanations from employees or interactively via WhatsApp social media. The form of information needed is about the process of processing population administration documents. On the other hand, some people are unable to obtain information on each channel, especially online channels. This is due to technological stuttering.

Consistent

The consistent indicator, which relates to the maintenance and presentation of online service channels in terms of design, organization, and interactivity (interaction between humans and digital devices), has been met. The dissemination process related to online services through channels that are familiar to the public (WhatsApp and the internet) makes it easy to find. Then the available channels are well managed, in the sense that they are clearly designed, systematic, and always updated. The public as the accessing party can easily find everything related to online services and service agencies, such as Standard Operating Procedures (SOPs) for online services, service products, activities or agendas from the agency, and service complaint contacts. However, for special matters, interested parties are required to coordinate with the agency directly. Especially regarding the online service SOP, its embodiment in the field is still not consistent or following the reality of the service.

Fast

Online services can be said to be fast. This can be seen from the process which does not take days or even hours, but less than an hour for one document. Employees who handle services via WhatsApp quickly respond to requests for documents by the public. On the other hand, obstacles that have the potential to hinder fast service can be in the form of incomplete requirement files and disrupted internet networks.

DISCUSSION

One of the key indicators of effectiveness, ease of use, has been positively impacted by the use of WhatsApp (WA) as the primary service channel. This choice has facilitated wider acceptance and smoother interactions due to WA's popularity and ease of use among the community. As a result, service delivery has become more user-friendly and accessible for many residents. Research has consistently shown the positive impact of WhatsApp on service delivery and user satisfaction. Ansari (2017) found

that the use of WhatsApp in libraries improved alert services and user experience. Siswantini (2020) highlighted the effectiveness of WhatsApp in promoting zero waste literacy, particularly in facilitating communication and information sharing. Lastly, Issa (2024) noted the widespread use of WhatsApp in Tanzanian organizations, despite the lack of formal authorization, and its potential for improving public sector performance. These studies collectively underscore the role of WhatsApp in enhancing service delivery, user experience, and communication.

The shift to online services has also been highly beneficial for both employees and the community. Employees have experienced increased efficiency in terms of time and energy, leading to quicker document processing and the ability to serve more people. For the community, the time savings are significant, allowing them to engage in other activities while their documents are processed, demonstrating the helpfulness of the new system. The shift to online services has indeed brought about increased efficiency for employees and time savings for the community (Poissant, 2005; Arman, 2023). However, the benefits are not without their challenges, as the adoption of e-government can be influenced by factors such as trust, financial security, and information quality (Gilbert, 2004). Despite these challenges, the implementation of e-government has the potential to revitalize economic and social sectors (Joseph, 2015).

Despite the increasing availability of online services, digital inclusion remains a challenge, particularly for rural residents (Park, 2015). This is exacerbated by a perceived lack of benefits and trust in these services (Heponiemi, 2020). The digital divide is further widened by factors such as poor self-rated health, financial hardship, and social isolation (Heponiemi, 2020). These issues are compounded by a lack of access, skills, and negative attitudes towards online services (Heponiemi, 2021). To address these challenges, targeted efforts are needed to improve digital inclusion, particularly for hard-to-reach groups (Boeltzig, 2007). However, for those who can access the services, the process is straightforward and user-friendly, facilitating an efficient service experience. The reliability of online services is assured through the secure management of user data via the Centralized SIAK application. This system is accessible only to authorized employees following strict Standard Operating Procedures (SOPs), ensuring that data management is secure and controlled. This enhances trust in the online service system among the community.

Availability of online services theoretically extends across all areas of Bantaeng Regency, including its 67 villages and sub-districts. However, practical availability is sometimes hindered by issues such as internet connectivity, access to technological devices, and digital literacy (Maulidiyah, 2024; Wahanisa, 2021; Avianto, 2022). Initiatives like the Village Authority-Based Administration Service (LABKD) aim to address these issues, striving to make online services more accessible to all residents. However, the implementation of these initiatives requires a focus on community participation, responsiveness to societal changes, and cross-sectoral collaboration (Maulidiyah, 2024). The implementation of e-government systems can improve service quality and accessibility, but it requires a focus on internet access and digital literacy (Avianto, 2022). The competence of village officials in digital-based services is also crucial, requiring education, training, and support from local or central governments (Nangameka, 2023).

Regarding understandability, information about online services is generally well communicated through both online and offline channels. Department employees and the community have confirmed the effectiveness of information dissemination, particularly via WhatsApp. However, some community members still struggle with technological challenges that impede their understanding, indicating a need for ongoing support and education. Anuyah (2023) highlights data and knowledge management as a significant issue for community-based social service organizations. Witten (2018) underscores the need for education and mentoring in utilizing technology for health in remote communities. Ives (2008) discusses the use of technology to deliver social work education in isolated Indigenous communities, emphasizing the importance of ongoing support. Bagley (2015) further emphasizes the need for ongoing technological support and professional development in education. These studies collectively underscore the need for ongoing support and education to address the technological challenges faced by community

members.

The consistency of online service channels is maintained through well-designed, organized, and interactive platforms. Information about services, including SOPs and contact details for complaints, is systematically presented and regularly updated. The consistency and effectiveness of online service channels are crucial for customer satisfaction and successful transactions (Galdolage, 2021). Information richness, including relevance, timeliness, accuracy, clarity, consistency, sufficiency, and simplicity, is a key factor in this regard (Galdolage, 2021). Despite this, discrepancies between the SOPs and actual service delivery in the field suggest a need for improved consistency in practice. Finally, the speed of online services, particularly document processing, is a significant strength, with WhatsApp playing a key role in enhancing efficiency (Lian 2023, Ansari 2017). However, this speed can be hindered by incomplete requirements and internet disruptions (Mursak 2021). Despite these obstacles, the use of E-government services has been beneficial, particularly in Mauritius, where it has improved the provision of online services to the population (Sunassee 2017).

Despite the positive outcomes, several limitations should be noted. The findings are primarily based on the implementation of online services in Bantaeng Regency and may not be generalizable to other regions with different infrastructural and socio-economic conditions. The evaluation is also limited by the availability and reliability of data collected from service users and employees. Additionally, the rapid transition to online services due to the pandemic may have introduced temporary adaptations that do not reflect long-term practices. Future studies should focus on a broader and more diverse set of regions to validate the generalizability of these findings. Longitudinal studies could provide insights into the sustainability of the improvements seen in Bantaeng Regency. Research should also explore strategies to enhance digital inclusion, particularly in rural areas, and investigate the long-term impacts of online services on overall public satisfaction and service efficiency. Moreover, an in-depth analysis of the security measures and their effectiveness in protecting user data in different contexts would be beneficial.

CONCLUSION

Based on the analysis of the research results, it can be concluded that online services by the Population and Civil Registration Office of Bantaeng Regency have been running effectively. Measuring the effectiveness of online services is based on the eight indicators used. The effectiveness in question refers to service tools that are easy to use, interactivity processes (digital interactions between employees and the community) that are simple, fast, and understandable, guaranteed security of population data, services available throughout the district, and being able to improve the performance of department employees as seen from the number of services completed per day. Of course, this is an interesting capital and stepping stone in the transition and development of digitalization.

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