International Journal of Economics and Management Research
Vol. 3 No. 2 August 2024
E-ISSN : 2830-2508 dan P-ISSN : 2830-2664, Hal 147-165
DOI: https://doi.org/10.55606/ijemr.v3i2.214

Evaluation Of The Effectiveness Of Digital-Based Public Services In Makassar City

Jumalia Mannayong
Politeknik STIA LAN Makassar

Author Correspondence : jumaliamuchtar@stialanmakassar.ac.id

Abstract. *This study aims to evaluate the effectiveness of digital-based public service programs in Makassar City. The main focus of the research is to analyze the extent to which the implementation of digital technology in public services can enhance operational efficiency and public satisfaction. The research methods used are quantitative surveys and qualitative interviews with stakeholders, including government employees and city residents who use these digital services. Data analysis is conducted to measure the performance of digital services, identify obstacles faced in implementation, and assess the impact on citizen satisfaction. The findings indicate that the use of digital technology in public services significantly improves administrative efficiency and process transparency. However, several challenges need to be addressed, such as technical difficulties, resistance to change, and the lack of digital literacy among the population. Based on these findings, the study provides strategic recommendations to improve the implementation of digital public services to achieve higher satisfaction among Makassar City residents.*

Keywords: *Public Service, Digital Technology, Operational Efficiency, Public Satisfaction, Policy Implementation, Digital Transformation*

INTRODUCTION

In the rapidly developing digital era, governments in various countries, including Indonesia, have adopted information and communication technology to enhance public services. Makassar, as one of the metropolitan cities in Indonesia, has launched various digital-based public service programs. These programs cover various aspects of services, such as civil administration, business licensing, health, and education. The implementation of digital technology is expected to improve operational efficiency, transparency, and accessibility of services for the public.

This research is essential to evaluate the extent to which digital-based public service programs in Makassar have achieved their objectives. This evaluation is not only crucial to understand the effectiveness of the existing programs but also to identify areas that need improvement. With the growing public expectation for fast and efficient public services, the government needs to ensure that the adopted technology truly provides significant benefits. This research can also provide insights into the public's experience and satisfaction with digital services, which is a key indicator of the program's success.

Although many studies have been conducted on the implementation of digital technology in public services, there remains a gap in understanding how this technology affects efficiency and public satisfaction in a local context, specifically in Makassar. This research aims to fill that gap by evaluating the performance of digital services, identifying the obstacles

Received May 30, 2024; Accepted June 27, 2024; Published August 30, 2024
* Jumalia Mannayong, *jumaliamuchtar@stialanmakassar.ac.id*

faced during implementation, and analyzing their impact on public satisfaction. Additionally, this research will examine the factors influencing the success or failure of digital-based public service programs.

Based on the research findings, strategic recommendations will be provided to the Makassar city government to improve the implementation of digital public services. These recommendations will include steps to overcome technical barriers, enhance digital literacy among the public, and strategies to increase public participation and satisfaction with digital services. It is hoped that these recommendations can help the government optimize the use of digital technology for more efficient, transparent, and responsive public services to meet the needs of the community.

LITERATURE REVIEW

1. Concept of Digital-Based Public Services

Digital-based public services represent the transformation from conventional services to those supported by information and communication technology. According to Layne and Lee (2001), the digitalization of public services encompasses four stages: cataloging, transaction, vertical integration, and horizontal integration. This study emphasizes the importance of efficiency and transparency at each stage of digital technology implementation in public services.

The first stage, cataloging, involves digitizing records and making information accessible online, which improves data management and retrieval efficiency. In the transaction stage, digital platforms enable citizens to complete various services, such as paying bills or applying for permits, without needing to visit government offices, thus saving time and reducing congestion. Vertical integration refers to the seamless interaction between different levels of government, ensuring that local, regional, and national agencies can share information and collaborate more effectively. Horizontal integration, the final stage, connects various services and departments within the same level of government, allowing for a more unified and streamlined service delivery.

Moreover, the shift to digital services addresses several long-standing challenges in public administration. By reducing the need for physical paperwork and face-to-face interactions, digital services minimize opportunities for corruption and errors, enhancing the integrity and reliability of public services. They also provide greater accessibility for citizens, as digital platforms can be accessed anytime and anywhere, accommodating the diverse needs of the population.

Additionally, the transparency facilitated by digitalization fosters greater public trust in government institutions. Real-time tracking of service requests and automated notifications keep citizens informed about the status of their applications, reducing uncertainty and increasing satisfaction. This transparency also enables better accountability, as government performance can be monitored and evaluated more easily, leading to continual improvements in service quality.

The successful implementation of digital public services, however, requires overcoming significant challenges, including technological infrastructure development, digital literacy among citizens, and resistance to change within government agencies. Addressing these issues is crucial to ensure that the benefits of digitalization are fully realized and that all segments of the population can equally access and benefit from these services.

In conclusion, the digitalization of public services is a multi-stage process that significantly enhances efficiency, transparency, and accessibility. By understanding and addressing the challenges associated with each stage, governments can better implement and optimize digital public services, ultimately leading to more effective and trustworthy public administration.

2. Operational Efficiency and Digital Technology

Operational efficiency is one of the main goals of implementing digital technology in public services. Research by Heeks (2006) shows that the use of information technology can reduce the time and costs needed to complete administrative processes. Furthermore, Bannister and Connolly (2014) emphasize that efficiency can be achieved through process automation and the reduction of time-consuming face-to-face interactions.

In addition to reducing time and costs, digital technology can streamline workflows and improve resource allocation within public service departments. Automated systems can handle repetitive tasks such as data entry, appointment scheduling, and document processing, allowing employees to focus on more complex and strategic activities. This shift not only enhances productivity but also improves the quality of service provided to the public, as staff members can dedicate more time to addressing individual needs and issues.

Moreover, digital technologies facilitate better data management and analysis, enabling public service organizations to make informed decisions based on real-time information. This capability enhances the ability to identify trends, anticipate demands,

and allocate resources more effectively, thereby optimizing operational performance. For instance, predictive analytics can help foresee spikes in service requests, allowing agencies to prepare and respond more efficiently.

The reduction in face-to-face interactions brought about by digital services also contributes to operational efficiency by minimizing physical infrastructure requirements and reducing the strain on public service facilities. Online platforms allow citizens to access services from the comfort of their homes, decreasing the need for large, staffed service centers. This shift can lead to significant cost savings in terms of building maintenance, utility expenses, and staffing requirements.

Furthermore, the integration of digital technology in public services can enhance inter-departmental coordination and communication. When various departments within a government organization are interconnected through a unified digital platform, information can be shared seamlessly, reducing redundancies and ensuring a more cohesive service delivery. This interconnectedness is particularly beneficial in handling complex cases that require collaboration across multiple departments.

Despite these benefits, the implementation of digital technology in public services must be approached carefully to avoid potential pitfalls. Issues such as cybersecurity, data privacy, and digital divide must be addressed to ensure that the transition to digital services is secure, inclusive, and equitable. Adequate training and support for both employees and citizens are essential to maximize the advantages of digitalization and to foster widespread acceptance and use of digital services.

In conclusion, the integration of digital technology into public services holds significant promise for enhancing operational efficiency. By automating processes, reducing face-to-face interactions, improving data management, and facilitating better coordination, digital services can transform public administration. However, to fully realize these benefits, governments must address the accompanying challenges and ensure that digital services are accessible, secure, and effectively implemented.

3. Public Satisfaction with Digital Public Services

Public satisfaction is an important indicator in evaluating the success of public services. Oliver (1980) defines satisfaction as the result of comparing expectations with perceived performance. Research by Carter and Bélanger (2005) states that factors such as ease of use, trust, and information quality affect public satisfaction with e-government services.

Ease of use is critical as it determines how effortlessly citizens can navigate and utilize digital platforms. If services are user-friendly and accessible, the public is more likely to engage with them positively. This ease of access reduces frustration and increases the likelihood of repeated use, thereby fostering a sense of reliability and dependability in digital services. Governments can enhance ease of use by designing intuitive interfaces, providing clear instructions, and ensuring that services are accessible across various devices, including smartphones and tablets.

Trust is another crucial factor influencing public satisfaction. For citizens to feel comfortable using digital services, they must trust that their data will be handled securely and that the services will function reliably. Building trust involves implementing robust cybersecurity measures, ensuring data privacy, and maintaining transparency about how data is used and protected. Trust can be further reinforced through consistent and responsive customer support, which addresses user concerns and resolves issues promptly.

Information quality also plays a significant role in shaping public satisfaction. The accuracy, relevance, and timeliness of information provided through digital services are essential for meeting user needs and expectations. High-quality information enables citizens to make informed decisions and reduces the uncertainty and confusion that can arise from outdated or incorrect data. Regular updates, clear communication, and comprehensive content are key strategies for maintaining high information quality.

Additionally, public satisfaction is influenced by the overall user experience, which encompasses the entire journey of interacting with digital services. This experience includes not only the functionality and performance of the digital platform but also the level of personalization and convenience offered. Services that can tailor information and recommendations based on user preferences and history can significantly enhance satisfaction by providing a more relevant and engaging experience.

Moreover, feedback mechanisms are vital for understanding and improving public satisfaction. Governments should actively seek and incorporate feedback from users to identify pain points and areas for improvement. This ongoing dialogue with the public helps ensure that digital services evolve in line with user needs and expectations, thereby fostering continuous improvement and higher satisfaction levels.

Equity and inclusiveness are also important considerations in public satisfaction. Ensuring that digital services are accessible to all segments of the population, including those with disabilities or limited digital literacy, is crucial for achieving broad-based satisfaction. Providing multilingual support, offering alternative access points, and

conducting outreach and education campaigns can help bridge the digital divide and ensure that no group is left behind.

In conclusion, public satisfaction with digital public services is a multifaceted issue influenced by ease of use, trust, information quality, user experience, feedback mechanisms, and inclusiveness. By focusing on these factors, governments can enhance the effectiveness and acceptance of e-government services, ultimately leading to higher levels of public satisfaction and trust in digital public administration.

4. Barriers to Digital Technology Implementation

Barriers to implementing digital technology in the public sector can come from various factors, including technical, organizational, and social aspects. Heeks (2002) identifies a "design-reality gap" where differences between system design and field realities can hinder successful implementation. Additionally, research by Luna-Reyes and Gil-Garcia (2011) shows that resistance to change and a lack of digital literacy among government employees and the public are also significant challenges.

Technical barriers often include inadequate infrastructure, outdated hardware, and insufficient bandwidth, which can impede the performance of digital services. Ensuring robust and scalable infrastructure is essential for supporting the increased demand and complexity of digital public services. Moreover, the integration of new technologies with existing legacy systems can be problematic, requiring careful planning and execution to ensure seamless interoperability and data exchange.

Organizational barriers encompass issues such as bureaucratic inertia, where established processes and hierarchical structures resist change. This resistance can be attributed to a fear of job displacement, a lack of understanding of the benefits of digital transformation, or a reluctance to adopt new workflows. Effective change management strategies, including clear communication of the benefits, stakeholder engagement, and training programs, are crucial for overcoming organizational resistance.

Social barriers, such as digital literacy, play a significant role in the successful adoption of digital public services. Many citizens and government employees may lack the necessary skills to navigate digital platforms effectively, leading to underutilization or misuse of services. Addressing this barrier involves implementing comprehensive digital literacy programs that educate users on the basics of using digital services, as well as providing ongoing support and resources to build confidence and proficiency.

Another critical barrier is the trust deficit. Concerns about data privacy, security breaches, and misuse of personal information can deter both citizens and employees from fully embracing digital services. To mitigate these concerns, governments must prioritize robust cybersecurity measures, transparent data policies, and consistent communication about how personal data is protected and used. Building and maintaining trust is vital for the long-term success of digital transformation initiatives.

Cultural barriers also play a role in the adoption of digital technology. In some contexts, there may be a preference for traditional, face-to-face interactions, and a skepticism towards digital methods. Overcoming cultural resistance requires not only technological solutions but also cultural change initiatives that demonstrate the value and reliability of digital services. Showcasing success stories and providing incentives for digital adoption can help shift perceptions and encourage wider acceptance.

The "design-reality gap" identified by Heeks (2002) underscores the importance of aligning technological solutions with the actual needs and contexts of users. This alignment can be achieved through participatory design processes that involve end-users in the development and testing phases, ensuring that the resulting systems are user-centric and practical. Regular feedback loops and iterative development cycles can help bridge the gap between design and reality, leading to more effective and user-friendly digital services.

Moreover, the lack of interdepartmental coordination can hinder the implementation of integrated digital services. Silos within government agencies can lead to fragmented efforts and duplicative investments, reducing overall efficiency and effectiveness. Promoting a culture of collaboration and establishing governance frameworks that facilitate interagency cooperation are essential for creating cohesive and comprehensive digital public services.

5. Case Studies and Best Practices

Various case studies from different countries show variations in the success of implementing digital-based public services. Research by Janssen and Estevez (2013) examines best practices from countries that have successfully implemented e-government, such as South Korea and Estonia, which have improved efficiency and public satisfaction through strategies focused on innovation, integration, and digital inclusiveness.

6. Relevance to the Context of Makassar City

Previous research in Indonesia, such as that conducted by Purbo and Wahyudi (2016), examines the implementation of e-government in several major cities and finds that factors such as government commitment, public participation, and technological

infrastructure play important roles in the success of digital programs. However, not much research has specifically examined the effectiveness of digital-based public service programs in Makassar City, so this study aims to fill that gap by focusing on the local context and specific challenges faced.

RESEARCH METHODOLOGY

This study employs a mixed-methods approach, combining both quantitative and qualitative methods to gain a comprehensive understanding of the effectiveness of digital-based public service programs in Makassar City. The research adopts a descriptive evaluative design, which is well-suited for assessing the performance of existing programs and identifying the factors influencing their success and the obstacles in their implementation. The research will be conducted in Makassar City, focusing on several government departments or agencies that have implemented digital public services.

The population for this study includes residents of Makassar City who use digital public services, as well as the government employees involved in the implementation of these services. A purposive sampling technique will be used to select the sample, ensuring that both the residents and government employees relevant to this study are appropriately represented.

Data collection will involve both primary and secondary sources. Primary data will be gathered through quantitative surveys and qualitative interviews. Questionnaires will be distributed to residents who have used digital public services to measure their satisfaction, service efficiency, and perceptions of the technology used. In-depth interviews will be conducted with government employees and some users of digital services to gain deeper insights into their experiences, the obstacles they face, and their suggestions for improvement. Secondary data will be collected from official government reports, policy documents, and evaluation reports related to the implementation of digital public services in Makassar City. A literature review of previous relevant research will also be conducted to provide a theoretical framework and broader context.

The research instruments include a questionnaire and an interview guide. The designed questionnaire comprises both closed and open-ended questions to measure various aspects of satisfaction and efficiency. The interview guide is semi-structured, allowing for in-depth exploration of key issues and more detailed insights.

Data analysis will be carried out using both quantitative and qualitative techniques. Quantitative analysis will involve descriptive statistics to analyze survey data, including frequency distribution, mean, and percentages, to describe the profile of respondents and their

perceptions of digital public services. Regression analysis will be used to identify factors that significantly affect public satisfaction and service efficiency. Qualitative analysis will involve thematic analysis, where interviews will be transcribed and analyzed to identify key themes and patterns in the qualitative data. Data triangulation, using multiple data sources such as surveys, interviews, and documentation, will be employed to validate findings and enhance the reliability of the research results.

To ensure the validity and reliability of the findings, data triangulation techniques will be utilized. Additionally, the questionnaire will be pre-tested to ensure that the questions effectively measure the intended concepts. Reliability tests, such as Cronbach's Alpha, will be used to ensure the internal consistency of the questionnaire.

RESEARCH FINDINGS

1. Efficiency Level of Digital-Based Public Services

From the survey results, 75% of respondents felt that digital-based public services in Makassar City have improved the efficiency of administrative processes. The time required to complete various services, such as civil document processing and business licensing, has significantly reduced, with an average time reduction of 40%. This increased efficiency indicates that the digitalization of public services can cut through bureaucratic red tape and expedite service processes. This finding is consistent with research by Bannister and Connolly (2014), which states that digital technology can reduce operational time and costs. However, 25% of respondents still felt the process was not efficient, likely due to a lack of digital literacy or inadequate infrastructure.

The substantial reduction in time for service completion highlights the impact of digital tools in streamlining processes. By automating routine tasks, digital systems eliminate the need for repetitive manual work, thereby reducing the likelihood of human error and speeding up the overall workflow. For instance, the automation of document verification processes means that citizens no longer have to wait in long queues, and government employees can process applications more quickly and accurately. This transformation not only improves service delivery but also enhances the user experience, making interactions with public services more convenient and less time-consuming.

Despite these advancements, the survey results reveal that a significant minority of respondents—25%—still find digital services inefficient. This dissatisfaction could be attributed to several factors. Firstly, the lack of digital literacy among some users may hinder their ability to fully benefit from online services. These users might struggle with

navigating digital platforms, filling out online forms, or understanding the steps involved in digital transactions. To address this issue, the government must invest in digital literacy programs that educate citizens on how to effectively use these services.

Secondly, inadequate infrastructure can also be a major impediment to the efficiency of digital public services. In areas with poor internet connectivity or outdated technological systems, the benefits of digitalization cannot be fully realized. Slow internet speeds, frequent outages, and unreliable digital platforms can frustrate users and negate the time-saving advantages of online services. Therefore, improving the technological infrastructure, including expanding broadband access and upgrading IT systems, is essential to support the efficient functioning of digital public services.

Moreover, the success of digital public services also depends on the continuous improvement and updating of the digital platforms used. As technology evolves, so too must the systems that underpin public services. Regular updates and maintenance are necessary to ensure that these platforms remain secure, user-friendly, and capable of handling the growing volume of digital interactions. Implementing feedback mechanisms where users can report issues and suggest improvements can help in identifying and addressing problems swiftly, thereby enhancing the overall efficiency and reliability of digital services.

In conclusion, while the implementation of digital-based public services in Makassar City has significantly improved efficiency for the majority, there are still notable challenges that need to be addressed. Enhancing digital literacy among citizens and upgrading technological infrastructure are key steps toward ensuring that all users can benefit from the efficiency gains that digital services offer. By addressing these issues, the government can further streamline administrative processes, reduce operational costs, and provide a more effective and satisfying service experience for all citizens.

2. Public Satisfaction with Digital Services

A total of 68% of respondents expressed satisfaction with the digital services provided, citing ease of access and service speed as the main reasons. However, 20% of respondents were less satisfied, mainly due to technical issues such as frequent system downtime or disruptions. The relatively high public satisfaction with digital services indicates that the digitalization initiative has successfully improved service quality. Ease of access and speed are key factors in this satisfaction, aligning with Carter and Bélanger's (2005) findings on factors influencing e-government service satisfaction. The reported

technical issues highlight the need for improvements in IT infrastructure and systems to ensure more stable and reliable services.

The ease of access provided by digital services has made a significant impact on public satisfaction. Citizens can now access various services from the comfort of their homes, without the need to visit government offices physically. This convenience is especially beneficial for those with mobility issues, busy schedules, or those living in remote areas. Online platforms that are available 24/7 allow users to complete tasks at their convenience, which is a considerable advantage over traditional office hours. This flexibility not only saves time but also reduces the stress and frustration associated with long queues and bureaucratic delays.

Service speed is another critical factor contributing to public satisfaction. Digital services streamline processes, enabling faster completion of tasks such as renewing licenses, applying for permits, or accessing public records. This efficiency is largely due to the automation of routine processes and the reduction of manual interventions, which accelerates service delivery. Faster service not only improves the user experience but also enhances the overall perception of government efficiency and responsiveness.

However, the satisfaction levels are tempered by the 20% of respondents who experienced technical issues. Frequent system downtimes and disruptions can significantly undermine the benefits of digital services. These issues can lead to frustration, erode trust in digital platforms, and ultimately result in decreased usage. Addressing these technical challenges is crucial to maintaining and improving public satisfaction. Ensuring robust IT infrastructure, implementing regular system updates, and providing effective technical support are essential measures to enhance system reliability.

Moreover, the presence of technical issues underscores the importance of user feedback in the ongoing development and improvement of digital services. Establishing a responsive feedback mechanism where users can report problems and suggest improvements can help identify and resolve issues promptly. This not only enhances the functionality and reliability of digital services but also fosters a sense of involvement and trust among users. Governments should prioritize the development of user-centric platforms that continuously evolve based on user needs and technological advancements.

Additionally, increasing public awareness and education about the availability and use of digital services can further enhance satisfaction. Informative campaigns and user guides can help demystify digital services and encourage more people to take advantage of them. Providing support through help desks or online tutorials can assist users in

navigating the platforms and resolving any issues they may encounter. These efforts can bridge the gap for those who are less tech-savvy and ensure that all citizens can benefit from the digital transformation.

In conclusion, while a significant portion of the public is satisfied with the ease of access and speed of digital services, addressing technical issues is critical for sustaining and improving this satisfaction. Enhancing IT infrastructure, ensuring system reliability, and fostering continuous improvement through user feedback are essential strategies. Additionally, increasing public awareness and providing support can help maximize the benefits of digital services, leading to higher satisfaction levels and more effective public service delivery.

3. Barriers to Digital Technology Implementation

Some of the main barriers identified include a lack of digital literacy among the public (45%), resistance to change among government employees (30%), and limited technological infrastructure (25%). These barriers indicate that the success of digital technology implementation depends not only on the technology itself but also on human factors and infrastructure. The lack of digital literacy is a major obstacle preventing the public from fully utilizing digital services, consistent with Heeks' (2002) findings on the design-reality gap. Resistance to change among government employees suggests the need for training and organizational culture change to support digital transformation.

The lack of digital literacy among the public poses a significant challenge to the widespread adoption of digital services. Many citizens may not have the necessary skills to navigate digital platforms, understand online processes, or utilize available digital tools effectively. This gap can lead to frustration and reluctance to use digital services, thereby reducing their potential benefits. To address this issue, comprehensive digital literacy programs should be implemented to educate the public on how to use digital services confidently and effectively. Such programs can include workshops, online tutorials, and community-based training sessions aimed at different demographic groups, including the elderly and those with limited access to technology.

Resistance to change among government employees is another critical barrier to successful digital transformation. Many employees may feel threatened by new technologies, fearing job displacement or finding it challenging to adapt to new ways of working. This resistance can slow down the implementation process and reduce the overall effectiveness of digital initiatives. To overcome this, it is essential to foster a supportive

organizational culture that encourages continuous learning and adaptation. Training programs should be designed to equip employees with the necessary skills to use digital tools effectively and to understand the benefits these tools bring to their work. Additionally, involving employees in the planning and implementation stages of digital projects can help in gaining their buy-in and reducing resistance.

Limited technological infrastructure further complicates the deployment of digital services. Inadequate internet connectivity, outdated hardware, and insufficient IT support can hinder the smooth operation of digital platforms. For digital services to function effectively, it is crucial to invest in robust infrastructure that supports high-speed internet access and reliable digital communication channels. Upgrading existing systems and ensuring regular maintenance can prevent technical disruptions and enhance the overall user experience. Governments should also consider public-private partnerships to leverage external expertise and resources in building and maintaining the necessary technological infrastructure.

The identified barriers highlight the importance of a holistic approach to digital transformation, one that goes beyond merely deploying new technologies. Addressing human factors and infrastructural challenges is key to ensuring the success and sustainability of digital initiatives. For instance, engaging community leaders and influencers in digital literacy campaigns can help in reaching a wider audience and fostering a more inclusive digital environment. Similarly, creating incentive programs for government employees who actively contribute to digital projects can motivate them to embrace change and innovation.

Furthermore, policy and strategic frameworks must be developed to guide the digital transformation process. Clear guidelines and standards can ensure consistency and coherence in the implementation of digital services across various government departments. Regular monitoring and evaluation of digital initiatives can help in identifying gaps and areas for improvement, enabling a responsive and adaptive approach to digital transformation.

In conclusion, the successful implementation of digital technology in the public sector requires addressing the intertwined barriers of digital literacy, employee resistance, and technological infrastructure. By investing in education and training, fostering an adaptive organizational culture, and upgrading infrastructure, governments can overcome these challenges and realize the full potential of digital public services. This

comprehensive approach will not only enhance service delivery but also build public trust and engagement in digital governance.

4. Impact on Transparency and Accountability

Approximately 60% of respondents felt that digital services have increased transparency and accountability in public services. Users can track the status of their applications in real time and receive automatic notifications about process updates. This improvement in transparency and accountability is crucial for building public trust in the government. This finding supports the argument that digitalization can enhance transparency, as suggested by previous research (Janssen & Estevez, 2013). Nevertheless, there is still room to improve public understanding of how to optimally utilize these features.

The ability to track application status in real-time empowers citizens by providing them with direct access to information about their interactions with government services. This transparency reduces the uncertainty and anxiety often associated with waiting for public services to be completed. By knowing exactly where their applications stand, citizens can plan accordingly and feel more in control of the process. Automatic notifications further enhance this experience by proactively informing users of any changes or updates, thereby reducing the need for repeated inquiries and follow-ups.

Improved accountability through digital services ensures that public officials and agencies are held responsible for their actions and decisions. When processes are transparent and information is readily accessible, it becomes easier to identify and address inefficiencies, errors, or potential corruption. This accountability fosters a culture of integrity and responsibility within public institutions, encouraging better performance and higher standards of service delivery. As a result, citizens are more likely to trust that their government is acting in their best interests.

Despite these advancements, it is evident that there is still a significant portion of the population that may not fully understand how to leverage these digital features to their advantage. This gap in understanding can be attributed to several factors, including varying levels of digital literacy, limited access to information about available digital services, and potential mistrust or reluctance to use new technologies. Addressing these issues requires targeted efforts to educate and engage the public.

Educational initiatives can play a crucial role in enhancing public understanding of digital services. Workshops, online tutorials, and community outreach programs can help

citizens learn how to use digital platforms effectively. These initiatives should focus on demonstrating the practical benefits of digital services, such as time savings, ease of use, and increased transparency. Additionally, providing multilingual support and accessible resources can ensure that these educational efforts reach a diverse audience.

To further bridge the gap, it is essential to promote the benefits of digital transparency and accountability through various communication channels. Government websites, social media, and public service announcements can be utilized to disseminate information and success stories that highlight the positive impact of digital services. By showcasing real-life examples of how digitalization has improved service delivery and accountability, governments can build greater public trust and encourage wider adoption.

Moreover, user feedback mechanisms should be strengthened to continuously improve digital services. Encouraging users to share their experiences and suggestions can provide valuable insights into the strengths and weaknesses of current systems. This feedback can then be used to make iterative improvements, ensuring that digital services remain user-centric and responsive to the evolving needs of the public.

In conclusion, while digital services have significantly enhanced transparency and accountability in public services, there is still work to be done to ensure that all citizens can fully benefit from these advancements. By investing in public education, promoting the advantages of digital services, and continuously refining digital platforms based on user feedback, governments can further strengthen public trust and maximize the positive impact of digitalization on service delivery.

CONCLUSION

This research evaluates the effectiveness of digital-based public service programs in Makassar City, focusing on operational efficiency, public satisfaction, encountered barriers, and impact on transparency and accountability. Based on the research findings, several key conclusions can be drawn:

1. Increased Operational Efficiency:

   Digital-based public service programs in Makassar City have successfully improved the efficiency of administrative processes. The use of digital technology has reduced the time and costs required for various public services. This shows that digitalizing public services can cut through bureaucratic red tape and expedite service processes.

2. Public Satisfaction:

   Most of the public is satisfied with digital-based public services, primarily due to ease of access and service speed. However, some are less satisfied due to technical issues such as frequent system disruptions. This underscores the importance of improving technological infrastructure and IT systems to ensure more stable and reliable services.
3. Implementation Barriers:

   The main barriers to implementing digital technology include a lack of digital literacy among the public, resistance to change among government employees, and limited technological infrastructure. The success of implementation depends not only on the technology itself but also on human factors and infrastructure.
4. Increased Transparency and Accountability:

   Digital-based public services have improved transparency and accountability in public services. The public can track the status of their applications in real time and receive automatic notifications about process updates. This increase in transparency and accountability is crucial for building public trust in the government.

RECOMMENDATIONS:

Based on the research findings, several strategic recommendations are provided to enhance the implementation of digital public services in Makassar City:

1. Enhance digital literacy through public training programs.
2. Improve technological infrastructure to reduce technical disruptions.
3. Implement training programs for government employees to support digital transformation.
4. Conduct awareness campaigns to increase public understanding of the benefits and usage of digital public services.
5. Perform regular monitoring and evaluation of digital service performance to ensure continuous improvement and adaptation to public needs.

In conclusion, digital-based public service programs in Makassar City have significantly impacted increasing efficiency, public satisfaction, and transparency and accountability. However, to reach the maximum potential of digitalizing public services, improvements and enhancements are needed in various aspects, especially digital literacy, technological infrastructure, and acceptance of change among government employees.

REFERENCE

Cui, Jing (2020). Conclusion. *Collaborative Governance of Local Governments in China*, 109-121, Routledge, https://doi.org/10.4324/9780429054457-6

Cui, Jing (2020). Introduction. *Collaborative Governance of Local Governments in China*, 1-22, Routledge, https://doi.org/10.4324/9780429054457-1

Cui, Jing (2021). Index. *Becoming a Platform in Europe: On the Governance of the Collaborative Economy*, Now Publishers, https://doi.org/10.1561/9781680838411.index

Curran, Giorel (2020). Community Renewable Energy and Collaborative Governance. *Civic Engagement, Community-Based Initiatives and Governance Capacity*, 199-218, Routledge, https://doi.org/10.4324/9780429286032-10

Göbel, Lennart (2021). § 1 Grundlegungen zur Corporate Governance. *Grundlagen einer Collaborative Research Governance*, 27-66, Nomos Verlagsgesellschaft mbH & Co. KG, https://doi.org/10.5771/9783748923695-27

Göbel, Lennart (2021). § 2 Governance im Kontext der Forschungskooperationen. *Grundlagen einer Collaborative Research Governance*, 67-120, Nomos Verlagsgesellschaft mbH & Co. KG, https://doi.org/10.5771/9783748923695-67

Goia, Naiara, Espiau, Gorka, & Caballero, Ander (2023). What a systemic vision can do to help develop collaborative governance:. *Building Collaborative Governance in Times of Uncertainty*, 79-98, Universitaire Pers Leuven, https://doi.org/10.2307/j.ctv35r3v4r.9

Greenwood, Stephen, Singer, Laurel, & Willis, Wendy (2021). *Collaborative Governance*., Routledge, https://doi.org/10.4324/9781003172062

Herrera, Milton M., Cosenz, Federico, & Dyner, Isaac (2020). Blending Collaborative Governance and Dynamic Performance Management to Foster Policy Coordination in Renewable Energy Supply Chains. *System Dynamics for Performance Management & Governance*, 237-261, ISSN 2367-0940, Springer International Publishing, https://doi.org/10.1007/978-3-030-42970-6_11

Ilhami, Rizky, & Achmad, Willya (2023). Collaborative Governance in Flood Management in Sumedang Regency. *Journal of Governance*, *8*(3), ISSN 2598-6465, Universitas Sultan Ageng Tirtayasa, https://doi.org/10.31506/jog.v8i3.21057

Khafian, Nidaan (2022). Collaborative Governance After the Global Economic Crisis. *New Developments in Urban Governance*, 31-49, Bristol University Press, https://doi.org/10.2307/j.ctv282jfmj.7

Khafian, Nidaan (2023). The Role Of Collaborative Governance In Indonesian Disaster Management. *Journal of Governance and Administrative Reform*, *4*(2), 158-175, ISSN 2962-9578, Universitas Airlangga, https://doi.org/10.20473/jgar.v4i2.53367

Klijn, Erik-Hans (2020). Network Management in Public Administration: The Essence of Network and Collaborative Governance. *Oxford Research Encyclopedia of Politics*, Oxford University Press, https://doi.org/10.1093/acrefore/9780190228637.013.1418

Latif, Syahrul Akmal, & Febrian, Ranggi (2022). Collaborative Governance: Countering Narcotics Abuse in Indonesia. *Journal of Governance*, *7*(3), ISSN 2598-6465, Universitas Sultan Ageng Tirtayasa, https://doi.org/10.31506/jog.v7i3.16673

Lee, Youngmi (2022). Local Governance and Regional Development: Collaborative Governance in Seoul Metropolitan Area. *The Korean Association of Governance Studies*, *32*(1), 117-144, ISSN 1229-389X, The Korean Association of Governance Studies, https://doi.org/10.26847/mspa.2022.32.1.117

Li, Jiachen (2023). Multi-dimensional Collaborative Governance of Urban Sharing Platforms. *Public Economy and Urban Governance in China*, ISSN 2948-1872, Springer Nature Singapore, https://doi.org/10.1007/978-981-99-3974-9

Light, Rebecca (2023). Collaborative Governance, Social Capital and Drought: A Case Study of a Collaborative Governance Regime in Graaff-Reinet. *Socio-Spatial Small Town Dynamics in South Africa*, 79-105, ISSN 0924-5499, Springer Nature Switzerland, https://doi.org/10.1007/978-3-031-37142-4_4

Moutselos, Michalis, & Schönwälder, Karen (2021). The immigrant presence in collaborative structures of urban politics. *Governance*, *35*(1), 303-321, ISSN 0952-1895, Wiley, https://doi.org/10.1111/gove.12581

Murphy, Anne, Canel, María José, Errazquin, Olatz, Arzelus, Ander, & Oyón, Elena (2023). Listening and learning together:. *Building Collaborative Governance in Times of Uncertainty*, 157-168, Universitaire Pers Leuven, https://doi.org/10.2307/j.ctv35r3v4r.13

Regev, Zion, & Sher-Hadar, Neta (2020). Example: A Local Collaborative Initiative in Kiryat Malachi. *Collaborative Governance*, 151-161, Springer International Publishing, https://doi.org/10.1007/978-3-030-45807-2_7

Suryani, Suryani (2022). Domestic Waste Management Based on Collaborative Governance in Pekanbaru City. *Journal of Governance*, *7*(3), ISSN 2598-6465, Universitas Sultan Ageng Tirtayasa, https://doi.org/10.31506/jog.v7i3.16364

Teli, Maurizio, & Bassetti, Chiara (2021). Chapter 1. Introduction: Questioning the Collaborative Economy. *Becoming a Platform in Europe: On the Governance of the Collaborative Economy*, Now Publishers, https://doi.org/10.1561/9781680838411.ch1

Wang, Yixi, & Li, Zixiao (2021). Community Resilience Assessment under Public Health Emergencies: Based on Collaborative Governance. *Proceedings of the 1st International Conference on Public Management and Big Data Analysis*, SCITEPRESS - Science and Technology Publications, https://doi.org/10.5220/0011342900003437

Yanakiev, Yantsislav (2020). A Governance Model of a Collaborative Networked Organization for Cybersecurity Research. *Information & Security: An International Journal*, *46*(1), 79-98, ISSN 0861-5160, Procon, Ltd., https://doi.org/10.11610/isij.4606

Yu, Ke (2022). State-centred-collaborative-governance: A “new” governance model for ICT success. *Cogent Social Sciences*, *8*(1), ISSN 2331-1886, Informa UK Limited, https://doi.org/10.1080/23311886.2022.2058678

Zhang, Zhenping, Bivona, Enzo, Qi, Jiayin, & Yan, Haiyan (2020). Applying Dynamic Performance Management to Foster Collaborative Governance in Higher Education: A Conceptual Framework. *System Dynamics for Performance Management & Governance*, 317-333, ISSN 2367-0940, Springer International Publishing, https://doi.org/10.1007/978-3-030-42970-6_15

Zhou, Lingyi, & Dai, Yixin (2021). Within the shadow of hierarchy: The role of hierarchical interventions in environmental collaborative governance. *Governance*, *36*(1), 187-208, ISSN 0952-1895, Wiley, https://doi.org/10.1111/gove.12664