RECESS SERVICE INNOVATION THROUGH THE ERO'TA APPLICATION: CHARACTERISTICS, IMPLEMENTATION, AND CONSTRAINTS IN THE MAKASSAR CITY DPRD

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ARTICLE INFORMATION	ABSTRACT

Effective and participatory public services are the key to realizing good governance, especially in the current era of digitalization. This article discusses recess service innovations through the eRO'TA (e-Recess By Us) application at the Makassar City DPRD, which is designed to improve access and transparency in the delivery of people's aspirations. This study aims to analyze the characteristics, implementation, and constraints of the application as a legislative digital innovation model. Using a qualitative approach with a case study design, data was collected through in-depth interviews, participatory observations, and document analysis from 12 key informants. The results of the study show that eRO'TA meets four characteristics of innovation according to Robbins, namely peculiarity, elements of novelty, planned processes, and clear goals. This application has succeeded in increasing the efficiency and accountability of recess services through digital transformation. However, challenges in the form of technical disruptions, lack of socialization, and low digital literacy still hinder widespread adoption. These obstacles have implications for the lack of optimal aspiration databases as the basis for development planning. This study emphasizes that the success of digital innovation in the public sector requires technology integration, institutional readiness, and community empowerment as a prerequisite for participatory and adaptive governance.

A. INTRODUCTION

The era of digitalization has fundamentally revolutionized the paradigm of public services. The community is now demanding faster, more transparent, and accountable services, encouraging the government to switch from a conventional service model to an information technology-based system (Tasyah et al., 2021). The development of digital technology in public services is no longer an option, but an inevitability that must be adopted to increase efficiency and responsiveness. (Haug et al., 2024; Widyawati et al., 2021). Therefore, digital transformation is a strategic need for the government in facing contemporary crises and challenges, while meeting public expectations for adaptive and reliable services (Luna-Reyes & Gil-Garcia, 2023).

The phenomenon of digital transformation that occurs in the public sector involves two main dimensions of change: incremental change and transformational change, where the emergence of new technologies such as digital platforms and software innovations motivates decision-makers in public administration to experiment and adopt new technologies (Cordella & Paletti, 2019). Recent research shows that digital transformation can improve government efficiency through a production network model that analyzes how digital transformation affects different sectors in government (Liang et al., 2024; Pertiwi & Susanti, 2024). In the context of Indonesia, the digitalization of public services has become a strategic priority of the government as part of efforts to reform bureaucracy and increase the nation's competitiveness in the global era, in line with the target of Indonesia Digital 2045 which makes digital transformation one of the main pillars of long-term national development.

Although research on digital transformation in the public sector has grown rapidly, there is a significant research gap in the area of digital legislative service innovation. Most studies of digital government are still focused on executive services, while research examining innovation at the legislative level is still very limited (Mergel et al., 2018). A systematic literature review conducted on the Web of Science and Scopus databases showed that of the 41 articles found related to digital government transformation, only a small percentage discussed legislative service innovation (Luna-Reyes & Gil-Garcia, 2023). This creates a significant empirical gap in understanding how digital transformation can be effectively implemented in the context of local democratic services. Moreover, existing studies tend to implicitly assume that the adoption of digital platforms inherently enhances transparency and citizen participation; however, this assumption has been increasingly questioned in the digital governance literature, particularly in relation to institutional capacity and contextual constraints within public sector organizations (Bannister & Connolly, 2014; Luna-Reyes & Gil-Garcia, 2023; Richard, 2010).

Systematic analysis of *digital tools* for citizen participation shows the great potential of participatory digital platforms in facilitating the flow of information from the community to the government through the use of advanced technology (Rask et al., 2024). However, there are still shortcomings in terms of delivering accountability information to the public, especially related to the process of making, implementing, and evaluating policies. These limitations indicate that the effectiveness of digital participation platforms is not solely determined by technological sophistication, but is closely linked to governance arrangements, institutional capacity, and the ability of public organizations to translate digital inputs into accountable policy processes (Luna-Reyes & Gil-Garcia, 2023; Richard, 2010).

In this context, the concept of Digital Parliament *or* ParlTech (Parliamentary Technology) is still in the early stages of development. Most of the e-participation platforms developed are ad-hoc and have not been systematically integrated to involve citizens in various levels of the legislative decision-making process. Furthermore, *a* meta-review *of* digital transformation revealed that of the 262 manuscripts that combined the terms "digital transformation" and "systematic literature review", none specifically addressed digital legislative innovation at the local level (Vitale et al., 2023). This is reinforced by a bibliometric analysis of *Web of* Science-based digital governance research which shows that the majority of research still focuses on the perspective of e-government *in* general, with limited attention to innovative legislative services(Lin & Yaakop, 2024). This condition reflects broader institutional challenges within legislative bodies, including limited organizational readiness, coordination mechanisms, and regulatory frameworks necessary to sustain digital participation beyond symbolic or experimental initiatives (Bannister & Connolly, 2014; Mergel et al., 2018).

This condition is even more relevant when it is associated with the strategic role of the Regional People's Representative Council (DPRD) as a representative institution in the Indonesian democratic system, especially in carrying out its three main functions: legislation, budgeting, and supervision at the regional level. In the context of e-governance, the role of the DPRD is inseparable from efforts to strengthen government functions involving the participation of citizens, political parties, community organizations, as well as the role of legislative and judicial institutions. Digital transformation through various technology platforms and devices has shown a significant impact in increasing citizen engagement (Lin & Yaakop, 2024). In this case, electronic participation tools (e-participation) serve as an innovative medium that allows people to be directly involved in the government's decision-making process, which is an essential element in democracy (Shin et al., 2024). Over the past few decades, e-participation initiatives have grown significantly in various countries, and many governments are beginning to realize the importance of using technology to expand the reach and quality of public participation in governance.

Recess as a mechanism for absorbing the aspirations of the community is a democratic instrument mandated in Law Number 23 of 2014 concerning Regional Government, especially in Article 161 letters i, j, and k. Recess activities are not only administrative routines, but a concrete manifestation of the principles of political accountability and responsiveness to the needs of their constituents (Kurniasih & Rusfiana , 2021). Through recess, DPRD members have the obligation to periodically go down to their respective constituencies to listen directly to the aspirations, complaints, and expectations of the community. However, the implementation of conventional recesses often faces various limitations in terms of reach, time, and accessibility that can hinder the optimization of aspirational absorption functions.

The study conducted by Azzahri & Andri (2021) found that the effectiveness of recess fund utilization by DPRD members has not been optimal due to several effectiveness measurement criteria that have yet to be fulfilled. This limitation becomes more apparent in the context of large geographic areas with heterogeneous population distribution, where not all citizens have equal opportunities to participate in conventional recess activities.

Facing these structural challenges, technology and global digital trends have made online work more inevitable, and the COVID-19 pandemic has increased the pace of these trends and helped open eyes to future possibilities to improve collaborative working, communication, and citizen engagement(Valentine et al., 2024). This condition creates a timely momentum to develop digital innovations in recess services that can overcome the limitations of conventional systems while optimizing available resources. The Society 5.0 era, which emphasizes the integration of technology into various aspects of societal life, demands a deep understanding of how digital innovation can enhance the quality of democracy and public participation.

In this context, the Makassar City Regional House of Representatives (DPRD) has developed a digital innovation in recess services through the eRO'TA (e-Reses Oleh Kita) application, which was launched in 2022 as a response to the growing need for digitalizing public aspiration services. The eRO'TA application is a digital platform that enables citizens to submit their aspirations online without being limited by the time and location constraints of conventional recess sessions (Andi Nur Isman, 2022). This innovation was developed as an effort to address the challenges of the digital era while enhancing public accessibility in communicating their aspirations to elected representatives. The development of eRO'TA was driven by the vision of Makassar City to become a "Sombere and Smart City," emphasizing the use of information technology in various aspects of governance and public service delivery (Dahyal, 2022). eRO'TA is designed as an integrated system based on electoral districts, facilitating the categorization and management of aspirations according to each DPRD member's area of representation. As an innovation, eRO'TA functions not only as a medium for submitting aspirations but also as a tool for ensuring transparency and public accountability through its tracking and monitoring features, which allow citizens to follow up on the status and response to their submissions. The application is designed with a user-friendly interface and is accessible via Android smartphones, taking into account the high penetration of mobile technology in society. Its integration with the local government system enables eRO'TA to serve not only as an input platform but also as a monitoring and evaluation tool for responsive governance.

This innovation represents a significant breakthrough in legislative digital services, an area that has received limited academic attention. eRO'TA is one of the first digital recess applications in Indonesia specifically designed for city-level DPRD institutions, offering a unique empirical contribution to the literature on e-government and legislative innovation. This study develops a new conceptual framework to analyze the characteristics of digital recess innovation using Robbins' theory, which has not previously been applied in the context of legislative digital services. The study directly addresses the gap between digital transformation theory and its implementation at the legislative level, particularly within the context of developing countries such as Indonesia. Beyond its empirical significance, this case provides a theoretically informative setting to examine whether dominant assumptions in digital governance and e-participation literature particularly the notion that digital platforms inherently enhance transparency and participation hold when applied to local legislative institutions characterized by uneven institutional capacity and digital readiness.

The scientific novelty of this research lies in its analytical approach to digital recess service innovation within local legislative institutions. Unlike most previous studies that focus on the digitalization of executive services or macro-level policies, this study specifically examines the eRO'TA application within the Makassar City DPRD as a model of legislative digital innovation, utilizing

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Robbins' framework in analyzing public sector innovation. By applying Robbins' innovation framework within a legislative digital service context, this study not only extends the applicability of the framework beyond its conventional administrative settings, but also contributes to broader theoretical debates on digital governance by highlighting the central role of institutional capacity in shaping the outcomes of public sector innovation.

The urgency of this study is further supported by the potential for its findings to be replicated as best practices by other DPRD institutions across Indonesia to enhance the quality of services and responsiveness to public aspirations. The results also offer valuable insights for developing national policies on public service innovation, particularly in promoting broader adoption of digital technologies in legislative services. The sustainability and scalability aspects of the eRO'TA innovation are critical in efforts to strengthen local democracy and improve governance quality in Indonesia. In an era marked by rapid technological change, public sector organizations face an urgent need to implement efficient digital transformation programs to achieve effective digital governance(Valentine et al., 2024). Considering the contextual relevance and the lack of scholarly inquiry into the digitalization of legislative recess services at the local level, this study aims to offer both conceptual and empirical contributions to the development of technology-based legislative services.

Accordingly, this study is positioned to engage directly with ongoing debates in digital governance and e-participation literature by examining digital recess service innovation within a local legislative institution. Rather than treating digital innovation as a purely technological intervention, this research emphasizes the role of institutional capacity, organizational readiness, and governance arrangements in shaping the outcomes of digital participation initiatives. In doing so, the study is designed to assess how empirical evidence from the eRO'TA case may reinforce existing insights on the potential of digital platforms to enhance citizen participation, while also modifying and challenging prevailing assumptions that technological adoption alone is sufficient to achieve transparency and accountability in legislative services.

Based on the identified research gap, this study seeks to answer the main research question: "What are the characteristics, implementation processes, and challenges of the eRO'TA application as a model of legislative digital innovation in enhancing public participation and the effectiveness of recess services in the Makassar City DPRD?" The specific objectives of this research are: first, to identify and analyze the characteristics of eRO'TA based on the dimensions of digital public service innovation; second, to examine the implementation process of the eRO'TA application in the context of organizational change within the Makassar City DPRD; and third, to identify the challenges encountered during implementation and the strategies developed to address them, with particular attention to how these challenges reflect broader issues of institutional capacity and governance in legislative digital innovation.

This research is expected to make a significant contribution both theoretically and practically to the development of public administration, particularly in the area of digital public service innovation and the strengthening of local democracy through information technology. The theoretical contribution lies in clarifying how digital legislative service innovations operate as governance processes rather than merely technological interventions, thereby reinforcing, modifying, and challenging existing digital governance and e-participation literature particularly the implicit assumption that digital platforms automatically enhance transparency and participation, which has predominantly focused on executive institutions.The development of a conceptual framework on digital recess innovation characteristics is also expected to serve as a reference for future research in this area. Practically, this study may offer policy recommendations for stakeholders to design effective and sustainable digital public service innovations. Its findings may also serve as a best practice model for other DPRDs seeking to enhance the quality of service and responsiveness to public aspirations, ultimately contributing to the strengthening of local democracy and improved governance in Indonesia.

B.   METHOD

This study employed a qualitative approach with a case study design to gain an in-depth understanding of digital recess service innovation through the eRO'TA application implemented by the Makassar City Regional House of Representatives (DPRD). This approach was chosen because it is suitable for exploring complex contemporary phenomena within real-life contexts (Yin, 2017), requires

comprehensive understanding of stakeholder experiences (Creswell, 2013), and aims to develop a theoretical framework in a field that remains underexplored in academic literature.

The research was conducted at the Secretariat of the Makassar City DPRD, South Sulawesi, as the site of the application's development and implementation. This location was selected due to ease of access to key informants and availability of relevant data. Data collection took place from January to March 2024, adjusted to coincide with the DPRD's recess cycle.

Participants were selected using purposive sampling, based on criteria of direct involvement in the development, implementation, or use of the eRO'TA application for a minimum of one year. A total of 12 informants were involved: 3 DPRD officials (Chairperson, Secretary, and Head of the Public Relations Division), 3 DPRD members from different political factions, 2 IT technical staff, and 4 citizens who actively use the application.

Data collection was conducted using three primary techniques:

1. In-depth semi-structured interviews, guided by an interview protocol developed based on dimensions of public service innovation and validated by two public administration experts. All interviews were recorded and fully transcribed for analysis.
2. Participant observation, aimed at directly observing the use of the application and the interactions between the public and the system. Observations were systematically recorded in field journals.
3. Document analysis, which included reviewing DPRD archives, application development reports, usage statistics, and relevant regulations.

Data analysis followed a thematic approach using the model of Miles, Huberman, and Saldana, consisting of three stages: data reduction, data display, and conclusion drawing. To enhance validity, several triangulation strategies were applied:

- Source triangulation, by comparing information from different categories of informants;
- Method triangulation, by comparing results from interviews, observations, and document analysis;
- Member checking, by presenting preliminary findings to participants to verify interpretative accuracy.

Researcher reflexivity was maintained through peer debriefing with two academic colleagues with backgrounds in public administration. These discussions focused on thematic findings and interpretations to ensure objectivity and reduce researcher bias in conclusion drawing.

This study has several limitations. As a single case study, its findings are not broadly generalizable, though transferability can be achieved through rich, contextualized description. Additionally, the three-month data collection period may not fully capture long-term impacts and the evolutionary dynamics of eRO'TA implementation.

Other limitations include restricted access to sensitive documents and high-level stakeholders due to administrative barriers, as well as the potential for social desirability bias, particularly among public officials. To mitigate these biases, the researcher employed a combination of method and source triangulation, along with reflective peer discussion, to maintain analytical rigor and objectivity.

C. RESULTS AND DISCUSSION

1. Characteristics of eRO'TA Application Innovation

Innovation in public service is not merely about introducing change, but must possess fundamental characteristics that significantly distinguish it from previous practices. Robbins (1994) outlines four key characteristics that underpin the success of an innovation: uniqueness, novelty, a well-planned process, and clear objectives. *Uniqueness* refers to distinctive features that set an innovation apart from prior approaches, *novelty* relates to its ability to offer solutions relevant to contemporary challenges, while a *well-planned process* ensures systematic and efficient implementation. *Clear objectives* provide direction and coherence throughout each phase of execution.

These four characteristics serve as the primary analytical framework for evaluating the eRO'TA application as a digital innovation in legislative services at the Makassar City DPRD. The research findings indicate that eRO'TA consistently meets all of these indicators, demonstrating its capacity to integrate digital technology into the traditionally face-to-face recess system. More importantly, the application not only enhances public accessibility in submitting aspirations but also represents an

institutional response to the evolving demands of local democracy, which increasingly requires broader and more inclusive public participation.

In this regard, the findings reinforce existing digital governance literature that conceptualizes digital transformation as a governance process rather than a purely technological intervention (Cordella & Paletti, 2019; Haug et al., 2024). The case of eRO'TA confirms that the effectiveness of digital innovation in the public sector depends on institutional arrangements, organizational commitment, and governance capacity. This evidence supports critiques of technological determinism in digital government implementation, which argue that technology alone does not automatically lead to improved transparency and participation. Accordingly, eRO'TA demonstrates that legislative digital innovation must be embedded within adaptive governance structures to meaningfully enhance public participation and accountability.

Peculiarities

Based on Robbins' theory of innovation characteristics, distinctiveness is a critical element that differentiates an innovation from pre-existing practices. In this context, the eRO'TA application exhibits several distinctive features. The research findings indicate that its primary advantage lies in facilitating the digital submission of public aspirations through smartphone-based platforms, enabling two-way interaction that is not constrained by time or location.

These peculiarities reflect original institutional thinking developed by the Makassar City DPRD Secretariat. Rather than replicating existing digital platforms, eRO'TA was specifically designed to address persistent challenges in public participation within legislative recess activities. This approach is consistent with Robbins' emphasis that innovation must embody originality and avoid merely reproducing established practices.

Furthermore, eRO'TA is designed with a high degree of flexibility, allowing citizens to convey their aspirations in real time from various locations. This feature represents a significant departure from conventional recess mechanisms, which are typically conducted only a few times a year and require physical presence. Such flexibility not only reduces time and cost barriers but also broadens opportunities for more equitable participation in local political processes.

Taken together, these findings confirm that the peculiarities of eRO'TA constitute a form of strategic differentiation that reflects the innovative capacity of regional legislative institutions in responding to the challenges of citizen participation in the digital era. Beyond its technical distinctiveness, however, eRO'TA also represents a form of institutional innovation within local legislative governance. Unlike many digital participation platforms that replicate executive-oriented service models, eRO'TA is specifically designed to support the representative and oversight functions of a legislative institution. This finding challenges the prevailing tendency in digital government literature to generalize innovation models across institutional contexts without sufficiently accounting for the unique governance roles of legislative bodies (Mergel et al., 2018; Lin & Yaakop, 2024).

Novelty Element

The novelty element in innovation refers to the introduction of new components that were previously absent from existing systems. In this regard, the eRO'TA application introduces a continuous recess mechanism that enables citizens to submit their aspirations at any time, unconstrained by formal recess schedules. In addition, the application incorporates transparency features that allow the public to access previous recess outcomes, follow-up actions, and information on council members' profiles and track records, thereby fostering closer relationships and stronger accountability between constituents and their representatives.

This novelty signifies a fundamental shift from the episodic nature of traditional recess systems toward a more sustainable and transparent digital platform. Such a transformation aligns with the concept of public service digitalization articulated by Mauni (2025), which emphasizes the role of information technology in enhancing efficiency, accountability, and citizen participation. In this context, eRO'TA illustrates how digital tools can be leveraged not merely to digitize existing procedures, but to redesign service mechanisms in ways that better accommodate democratic participation.

Importantly, the novelty of eRO'TA is not limited to its technical features but extends to its substantive governance implications. The application expands the scope of legislative representation by creating a new, more open channel of communication between citizens and council members. As a result, eRO'TA does not simply modify existing recess procedures; rather, it introduces a new participatory system that reshapes the relationship between citizens and legislative institutions.

This transformation from an episodic, event-based recess mechanism to a continuous digital participation platform challenges prevailing assumptions in e-participation literature, which often conceptualize citizen engagement as temporally bounded and administratively segmented activities (Shin et al., 2024; Rask et al., 2024). The eRO'TA case suggests that digital legislative services can reconfigure participation as an ongoing governance process, thereby extending the analytical scope of digital participation frameworks within democratic institutions.

Planned Process

The development of the eRO'TA application is carried out through a series of structured and planned stages. Based on the results of the research, the planning process includes eight main stages as seen in the following figure:
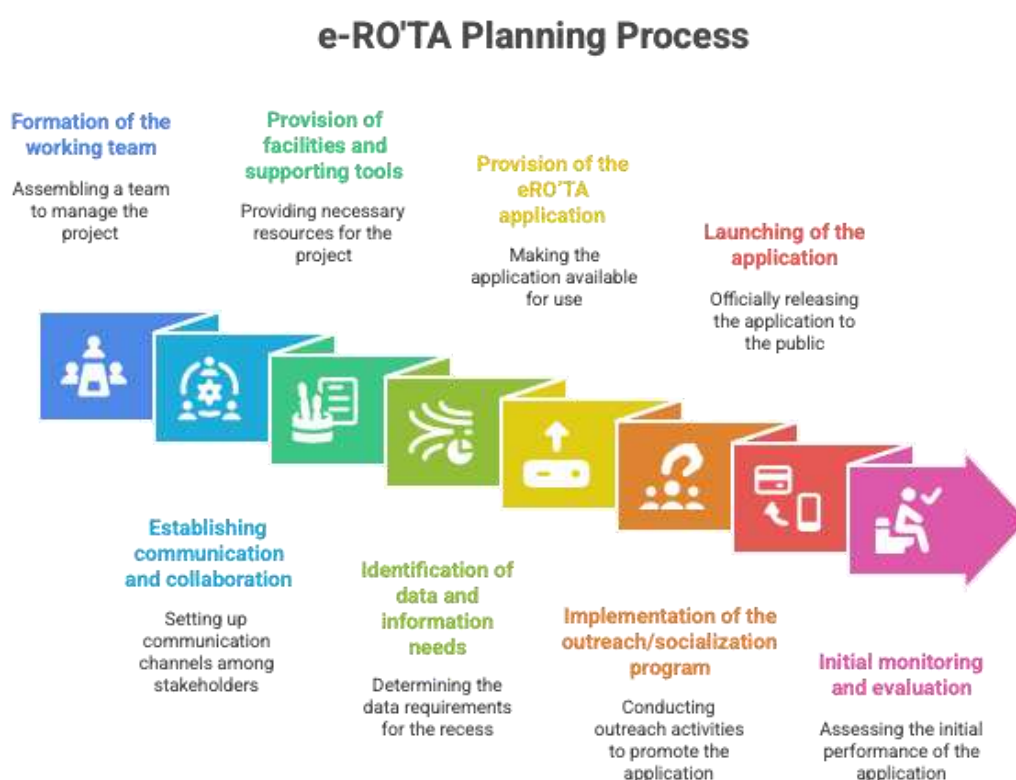

Figure 1. eRO'TA Planning Process
Source : Makassar City DPRD

Comprehensive planning undertaken by the Makassar City DPRD in developing this public service innovation reflects a strong institutional commitment to improving service quality and responsiveness. Each stage in the planning process was systematically designed to ensure that the application operates effectively and responds to user needs. As emphasized in the digital public sector literature, successful innovation requires a structured and sustainable approach to achieving meaningful transformation in public services (Edelmann & Virkar , 2023; Storozhenko et al., 2024). Careful planning is therefore a critical prerequisite for ensuring that digital technologies deliver responsive, efficient, and citizen-oriented services.

Furthermore, the implementation of eRO'TA is expected to generate tangible public value by accelerating access to services while enhancing transparency and accountability. As noted by Layne & Lee (2001) , the evolution of e-government unfolds through successive stages from cataloguing and transaction to vertical and horizontal integration each of which requires deliberate strategic planning. In this respect, the eRO'TA planning process demonstrates an awareness that digital transformation involves not only technological development but also the redesign of organizational processes that support service sustainability and effectiveness.

The clarity of objectives embedded in the eRO'TA innovation further underscores the importance of institutional capacity in sustaining digital legislative services. Consistent with Bryson (2018) and Bevir (2010), the findings indicate that strategic vision, organizational alignment, and policy integration are essential governance prerequisites for digital innovation. This evidence reinforces the argument that successful digital transformation in the public sector is contingent upon institutional readiness and governance capability, rather than the mere availability of digital tools.

Clear Purpose

The eRO'TA application has clear and measurable goals, both in the short, medium, and long term. The short-term goal is the realization of an aspiration database to become a development planning policy material that is integrated with relevant stakeholders. This phased approach is in line with the principles of strategic management in the public sector which emphasize the importance of systematic and measurable planning (Bryson, 2018).

The medium-term goal is the collection of aspiration databases which are real data from the community and endorsement by council members as the main points of thought in regional development planning. The integration of community aspirations in the development planning process is an implementation of the participatory governance concept which has been proven to increase the legitimacy and effectiveness of public policies (Fung, 2015).

The long-term goal is the integration of an aspiration database as one of the requirements for regional development planning documents. These three levels of objectives reflect a strategic vision to realize *good governance* through increased transparency, responsiveness, and public participation in the policy-making process. According to Bevir (2010) *good governance* in the modern context requires mechanisms that allow for the active participation of the community in the decision-making process, which can be facilitated through *digital platforms* such as eRO'TA. The implementation of this kind of integrated system also supports the achievement of sustainable development goals, especially in the aspect of strong and inclusive institutions. Aclear proposal in the implementation of eRO'TA is the basis for the sustainability of the program and strengthens the legitimacy and effectiveness of development planning. The clarity of this goal direction is an indicator that legislative digital innovation can be strategically structured to support inclusive and participatory development.

2. Implementation of the eRO'TA Application at the Makassar City DPRD

The implementation of the eRO'TA application has been carried out systematically and integrated with the formal recess process of the Makassar City DPRD. The application serves as a complement to the conventional recess system, providing digital features that enable the automatic, classified, and efficient management of public aspirations. When citizens submit their aspirations through the application, the system automatically routes them to the relevant DPRD members based on their respective electoral districts (dapil).

Figure 2. eRO'TA System Flow
Source: Makassar City DPRD eRO'TA WEBSITE

The implementation mechanism of the eRO'TA application consists of several stages, as illustrated in Figure 2 above. Citizens can access the application via the PlayStore or the official website. After creating an account and completing the verification process, users may select a council member corresponding to their electoral district (dapil) and submit their aspirations. Submitted aspirations are then verified by the DPRD's Information and Documentation Management Officer (PPID) and forwarded to the relevant Regional Apparatus Organizations (OPD) and council members. Verified submissions are subsequently discussed in recess forums as part of the legislative and oversight agenda.

The DPRD Secretariat, particularly the Public Relations and Protocol Division, plays a central role in managing the application. Their responsibilities include socialization, technical maintenance, and coordination with stakeholders. They are also tasked with verifying and channeling aspirations according to each council member's jurisdiction. Council members act as end users who receive, respond to, and follow up on public input. One DPRD member stated that the system improves the efficiency of representative functions and enables more responsive engagement with constituents.

From an efficiency perspective, the implementation of eRO'TA significantly reduces operational costs associated with conventional recess sessions and saves both time and resources for legislators and the public. Participation is no longer limited by location or specific schedules, thereby increasing outreach and public engagement. Moreover, digital documentation via the application allows for more transparent and accountable tracking, while facilitating analysis of community aspiration trends based on the collected data.

The adoption of eRO'TA reflects an organizational change within the Makassar City DPRD. This legislative body has begun to embrace a digital approach that necessitates role restructuring, workflow adjustments, and strengthening of IT capabilities to support public service functions. This transition marks a shift from traditional bureaucratic culture toward a more transparent, participatory, and responsive model of digital governance aligned with contemporary societal needs.

This transition marks a shift from a traditional bureaucratic culture toward a more transparent, participatory, and responsive model of digital governance. However, the findings also indicate that such transformation is neither automatic nor purely technology-driven. Instead, it requires deliberate organizational change, inter-unit coordination, and strengthened institutional capacity, thereby reinforcing and refining digital governance literature that emphasizes governance arrangements as central to successful digital transformation (Luna-Reyes & Gil-Garcia, 2023; Valentine et al., 2024).

3. Obstacles and Challenges in the Implementation of eRO'TA
Technical Barriers to Society

The implementation of the eRO'TA application has encountered several technical and institutional challenges that directly affect user experience and overall system reliability. One of the most significant issues reported by the Secretariat of the Makassar City DPRD relates to system disruptions caused by virus attacks. This condition indicates persistent weaknesses in cybersecurity protection within local-level digital government systems, particularly those managed by legislative institutions.

These digital security challenges are consistent with findings by Hasan & Rahman (2023) and Rhogust (2024) who argue that Indonesia continues to face structural vulnerabilities in cybersecurity governance amid the rapid expansion of digital public services. Weak regulatory frameworks, limited technical capacity, and fragmented inter-agency coordination exacerbate the exposure of e-government platforms to cyber threats. In addition, inadequate system maintenance routines and uneven internet infrastructure, especially in peripheral areas, further undermine the stability and performance of digital government applications (Jubaedah, 2020).

Beyond infrastructure related issues, the limited capacity of the system to anticipate, detect, and mitigate digital threats also contributes to its vulnerability. Local public service applications are often not supported by robust cybersecurity mechanisms such as advanced firewalls, updated antivirus systems, or real-time data traffic monitoring. As a result, applications like eRO'TA remain susceptible to external attacks and operational disruptions. This condition underscores the urgency of developing adaptive and responsive cybersecurity frameworks within local governments, particularly for digital platforms that support participatory public services.

Moreover, technical challenges are compounded by low levels of cybersecurity literacy among civil servants responsible for managing and operating the system. As highlighted by Nurhidayat et al. (2024), many obstacles in Indonesia's e-government implementation arise not solely from technological constraints but also from managerial weaknesses and human resource limitations. Insufficient preparedness in responding to cyber incidents, combined with the absence of standardized operational procedures, significantly increases the risk of system failure and data loss. Consequently, strengthening technical competence and cybersecurity awareness among system administrators is a critical prerequisite for ensuring the secure and sustainable operation of the eRO'TA application.

From a governance perspective, cybersecurity challenges in the implementation of eRO'TA should not be interpreted merely as isolated technical deficiencies. Instead, they reflect broader issues related to institutional capacity, regulatory readiness, and risk governance within local legislative bodies. As emphasized by Hasan & Rahman (2023) and Rhogust (2024), weak cybersecurity practices in the public sector often stem from fragmented governance arrangements and insufficient investment in human capital. The eRO'TA case therefore challenges the implicit assumption that digital platforms automatically enhance transparency and accountability. Without adequate institutional safeguards and governance mechanisms, digital innovation may instead introduce new forms of vulnerability and governance risk.

Lack of Socialization and Digital Literacy

Insufficient public socialization represents one of the major obstacles in the utilization of the eRO'TA application. Interview findings reveal that a large proportion of citizens are unaware of the existence of this platform, as reflected in the relatively low number of active users recorded up to 2023. Limited dissemination and promotion through formal public information channels have constrained the visibility of the application, particularly among citizens who do not have direct or routine engagement with legislative activities. As a result, eRO'TA has not yet functioned as an inclusive digital participation platform for the broader public.

This condition is closely linked to the persistence of low digital literacy levels within segments of the community. As noted by Silva-López et al. (2023), disparities in digital skills significantly affect technology adoption, including in the context of electronic government. In the case of eRO'TA, limited digital competencies hinder citizens' ability to access, comprehend, and independently utilize application features. These challenges are particularly pronounced among individuals with lower educational backgrounds and elderly groups who are less familiar with digital technologies, thereby reinforcing patterns of exclusion in digital participation.

Furthermore, studies by Isabella et al. (2024) and Kartanegara et al. (2024) emphasize that generational and educational inequalities constitute key determinants of digital literacy gaps. This observation is reinforced by Indahri et al. (2024), who argue that digital literacy initiatives in Indonesia

have often been fragmented, incidental, and insufficiently integrated into systematic community empowerment frameworks. Consequently, the effectiveness of digital platforms such as eRO'TA is highly contingent upon the presence of structured, continuous, and targeted outreach strategies that are responsive to the demographic and socio-cultural characteristics of intended users.

Importantly, low public awareness and limited digital literacy should not be interpreted solely as individual-level shortcomings. Rather, they reflect constraints in institutional communication strategies and the absence of sustained public learning mechanisms within the DPRD. Consistent with the arguments advanced by Isabella et al. (2024) and Indahri et al. (2024), the findings indicate that meaningful digital participation requires deliberate and long-term institutional efforts to cultivate digital citizenship. In this regard, the digital literacy challenges associated with eRO'TA point to broader issues of governance capacity and policy design, rather than merely societal limitations.

Challenges in Technology Adoption and the Digital Divide

Challenges in adopting digital technology remain a tangible barrier, particularly for communities lacking basic skills in using online-based applications. Some citizens have expressed difficulty in navigating the eRO'TA application interface and highlighted the need for simple, practical guidance. These obstacles underscore the importance of designing user-friendly systems and the need for technical support in the form of training and assistance for users from diverse social backgrounds.

This issue becomes even more complex when viewed in the context of the persistent digital divide in Indonesia. Apriliyanti et al. (2021) note that this divide encompasses not only access to devices and networks but also the ability of individuals to use technology productively. In other words, owning a device does not necessarily guarantee the user's ability to utilize it optimally especially within the framework of electronic government services that require an understanding of applications, data governance, and digital procedures.

To address these challenges, Utomo et al. (2024) emphasize the importance of a collaborative approach involving the government, private sector, and civil society in building an inclusive digital literacy ecosystem. This approach goes beyond infrastructure provision by focusing on enhancing public capacity through continuous education. Consequently, the challenges of technology adoption and the digital divide can be progressively mitigated, enabling broader and more active public participation in digital innovations such as eRO'TA.

Implications of Constraints on Achieving Innovation Goals

The various challenges encountered in the implementation of the eRO'TA application have had a direct impact on the effectiveness of achieving its innovation objectives, particularly the short and medium-term targets. Systemic technical disruptions such as vulnerability to cyberattacks and the limited readiness of human resources in system management have hindered the smooth operation of the application. Coupled with low digital literacy and insufficient public outreach, the application has yet to reach a broad and diverse user base as envisioned in its original mission.

One tangible consequence of these obstacles is the failure to develop a comprehensive database of community aspirations. The low adoption rate means that the collected input does not yet reflect the needs of all segments of Makassar City's population in a representative manner. The database, which remains limited both quantitatively and qualitatively, reduces the potential of eRO'TA to function as a credible planning tool rooted in public participation.

In the medium term, data limitations and weak community engagement also affect the quality of regional development planning. Arief (2023) emphasizes that weaknesses in system integration and inter-agency coordination are major barriers to delivering efficient digital public services. Without strong institutional coordination and standardized workflows, the information gathered through eRO'TA cannot be optimally transformed into targeted policies or development programs.

Therefore, strategies to overcome these barriers must be comprehensive covering improvements to digital infrastructure, the enhancement of human resource capacity, and the development of more targeted and sustainable digital literacy policies. Capacity building programs for both the general public and government officials can no longer be incidental; they must become an integral part of regional digital transformation policy.

As emphasized by Natasya (2021), the success of digital innovation in the public sector heavily depends on the integration of technological, social, and institutional dimensions. This means that

applications such as eRO'TA will only be effective if supported by sufficient institutional readiness, active public engagement as users, and a productive and conducive digital environment. If left unaddressed, these challenges not only threaten the sustainability of the innovation but may also erode public trust in the effectiveness of technology based legislative services.

Overall, the challenges identified in the implementation of eRO'TA modify and challenge prevailing digital governance and e-participation literature that implicitly assumes digital platforms automatically enhance transparency, inclusiveness, and public participation. The empirical findings demonstrate that digital legislative innovation is deeply contingent upon institutional capacity, governance coordination, and sustained public engagement. Without addressing these governance dimensions, digital platforms risk becoming symbolic innovations rather than effective instruments of democratic governance (Bannister & Connolly, 2014; Luna-Reyes & Gil-Garcia, 2023; Richard, 2010)

D. CONCLUSIONS AND RECOMMENDATIONS

Conclusion

This study concludes that the eRO'TA application represents a substantive form of legislative digital innovation that has successfully integrated digital technology into the recess services of the Makassar City DPRD. Empirically, eRO'TA fulfills the four core characteristics of innovation as conceptualized by Robbins distinctiveness, novelty, a planned implementation process, and clear objectives demonstrating that legislative institutions can actively adapt to the demands of digital governance. The implementation of eRO'TA has contributed to increased efficiency and transparency in the process of collecting public aspirations, while also signaling an organizational shift toward more open and participatory legislative governance.

Nevertheless, this research also identifies several structural challenges that limit the optimal functioning of the innovation. These include technical disruptions arising from weak cybersecurity capacity, insufficient public socialization, low levels of digital literacy among segments of the population, and uneven adoption of digital technology. Such constraints have resulted in limited public participation and reduced integration of aspiration data into regional development planning processes. These findings underscore that the success of legislative digital innovation cannot be attributed solely to technological availability, but is fundamentally shaped by institutional readiness, governance capacity, and the broader socio-digital context. In this regard, the eRO'TA case challenges deterministic assumptions in digital governance literature that equate digitalization with automatic gains in transparency and participation, emphasizing instead the central role of institutions and governance arrangements.

Recommendations

Based on the findings, several strategic recommendations are proposed to enhance the functionality and sustainability of the eRO'TA application. First, the Makassar City DPRD and local government should prioritize the strengthening of cybersecurity governance by upgrading digital infrastructure, establishing standardized security protocols, and enhancing the technical capacity of civil servants responsible for system management. Second, comprehensive and continuous public socialization strategies are required to ensure broader awareness and use of the application, particularly among groups that are vulnerable to the digital divide. Third, multi-stakeholder collaboration involving the DPRD, local government agencies, private sector actors, and civil society organizations should be institutionalized to support systematic and inclusive digital literacy programs. Such collaboration is essential to fostering digital citizenship and ensuring meaningful public participation in legislative processes. Fourth, regulatory frameworks and standardized procedures for aspiration data governance should be strengthened to ensure that information collected through eRO'TA is effectively integrated into development planning and accountability mechanisms.

Finally, future research is encouraged to examine the replication and adaptation of the eRO'TA model in other regional legislative contexts. Comparative and longitudinal studies would be particularly valuable in deepening theoretical and empirical understanding of legislative digital innovation and its implications for democratic governance in Indonesia and other developing country settings.

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