

# Optimization of Local Government Information Systems through Digital Governance in Denpasar City

I Made Wirawan<sup>1</sup>

<sup>1</sup>Information Systems, Primakara University

## ARTICLE INFO

**Received:** 11 June 2025  
**Revised:** 17 August 2025  
**Accepted:** 13 October 2025  
**Available online:** 19 October 2025

### Keywords:

Digital Governance  
Information Systems  
Public Management  
Denpasar

### Corresponding Author:

I Made Wirawan

Email:

[imadewrwn@gmail.com](mailto:imadewrwn@gmail.com)

Copyright © 2025, Asian Digital Governance Problems, Under the license [CC BY- SA 4.0](#)



## ABSTRACT

**Purpose:** This study aims to analyze the optimization of local government information systems through digital governance in Denpasar City, emphasizing how digital transformation improves efficiency, transparency, and inclusivity in public service delivery.

**Subjects and Methods:** The research involved government officials, community representatives, and citizens who interact with digital platforms. A qualitative approach was used, combining in-depth interviews, document analysis, and field observations. Thematic analysis identified key themes related to digital governance implementation and outcomes.

**Results:** Findings reveal that Denpasar has developed integrated service platforms to streamline administrative functions, improved bureaucratic capacity through training, and enhanced transparency via open data initiatives. Citizen engagement increased through reporting and feedback systems, while inclusivity efforts included digital literacy programs for marginalized groups. However, persistent challenges include system interoperability, bureaucratic resistance, infrastructure inequality, and limited accountability mechanisms.

**Conclusions:** The study concludes that Denpasar's digital governance represents a managerial and institutional transformation requiring strong leadership and citizen participation. Sustainable optimization of local government information systems depends on balancing efficiency with equity and accountability, providing strategic insights for other local governments pursuing digital transformation.

## INTRODUCTION

The digital transformation of governance has emerged as a defining characteristic of contemporary public administration, reshaping how governments deliver services, interact with citizens, and manage institutional accountability. Across the world, governments are leveraging digital platforms to improve transparency, efficiency, and citizen trust (Balaji, 2025). The shift from traditional bureaucratic models to digitally enabled governance frameworks commonly conceptualized as digital governance or e-governance reflects not only a technological adaptation but also a paradigmatic change in the nature of governance itself (AbdulKareem & Oladimeji, 2024; Sharmin & Chowdhury, 2025).

In Indonesia, this transformation has been accelerated by the government's commitment to reform public administration and strengthen democratic accountability through information and communication technology (ICT) (Setiawan et al., 2021; Frinaldi et al., 2024). At the local level, cities are at the forefront of this transformation. Denpasar, the capital of Bali Province, has

become a significant case study for understanding how local governments operationalize digital governance in practice.

As a rapidly urbanizing city with high citizen expectations for efficient public services, Denpasar faces the dual challenge of ensuring administrative efficiency and maintaining inclusivity in access to services (Sanjaya et al., 2025). The optimization of local government information systems (LGIS) through digital governance in Denpasar reflects both progress and ongoing challenges, particularly as it attempts to integrate national frameworks with local realities (Das et al., 2022).

Globally, digital governance initiatives have been linked to several positive outcomes. By enabling transparency and real-time information sharing, governments reduce opportunities for corruption and foster stronger citizen trust (Gartika & Widiyanto, 2024). Information systems that are digitally integrated also contribute to more efficient service delivery, reducing redundancies and streamlining administrative processes (Adityayoga, 2024). Moreover, digital tools expand opportunities for citizen engagement, allowing communities to provide input, monitor public projects, and participate in decision-making processes (Susilowati et al., 2025).

However, while the promise of digital governance is considerable, its realization is not automatic. It requires a complex interplay of technology adoption, institutional adaptation, and citizen capacity (Liu et al., 2025). In Indonesia, digital governance is framed by the national Electronic-Based Government System (Electronic-Based Government System (EBGS), mandated under Presidential Regulation No. 95 of 2018. The policy outlines the need for integrated, interoperable, and citizen-centered digital systems at all levels of government (Marbun et al., 2025). Despite the strong regulatory foundation, implementation at the local level often reveals a gap between policy intentions and practical realities.

Issues such as digital literacy disparities, uneven infrastructure development, limited technical capacity, and bureaucratic inertia continue to undermine the optimization of information systems in many regions (Gravitiani et al., 2025). Denpasar City illustrates this complexity, as its efforts to optimize information systems are both constrained by these challenges and shaped by the city's unique socio-cultural and economic characteristics. One of the critical concerns in optimizing local government information systems is the readiness of bureaucratic structures to embrace change.

Research has consistently shown that the success of digital governance depends less on technological sophistication than on the willingness of public institutions to transform their organizational culture, leadership practices, and administrative routines (Hariyanti et al., 2024). In Denpasar, bureaucratic adaptation to digital systems has highlighted tensions between established practices and the demands of digitally mediated service delivery. These tensions manifest in varying levels of staff readiness, resistance to change, and uneven commitment across departments, all of which complicate efforts to ensure system optimization (Suhartana et al., 2025).

Equally important is the issue of inclusivity in digital governance. While digital platforms can democratize access to government services, they also risk creating new forms of exclusion if segments of the population lack the resources, skills, or infrastructure to engage with these systems effectively (Singh et al., 2025). Denpasar, like many Indonesian cities, faces disparities in digital literacy across socio-economic groups, raising concerns about whether digital governance benefits are equitably distributed. Addressing the digital divide is thus a necessary condition for ensuring that optimization efforts do not inadvertently reinforce existing inequalities but instead contribute to more participatory and inclusive governance (Hamdani et al., 2021).

The optimization of local government information systems in Denpasar must also be understood within the broader context of sustainable urban governance (Megawati et al., 2025; Sumaryana et al., 2024; Sumaryana et al., 2024). As urban populations grow, local governments are under increasing pressure to deliver efficient, transparent, and citizen-responsive services. Digital governance provides a set of tools to meet these demands, but its effectiveness depends on alignment with broader institutional reforms and citizen expectations. Denpasar's experience

contributes to this wider debate by offering empirical insights into how local governments in Indonesia balance technological innovation with organizational realities.

This study therefore situates Denpasar's efforts within a global and national conversation on digital governance. By analyzing how local government information systems are optimized through digital initiatives, the research highlights both the achievements and limitations of digital transformation in practice. The findings underscore the argument that optimization is not a one-time technical intervention but a continuous process of aligning technological capacity, institutional adaptability, and citizen inclusion. Understanding this process in Denpasar provides not only a local perspective but also lessons for other urban centers in Indonesia and comparable contexts in the Global South, where digital governance must navigate similar structural and socio-political constraints.

## **METHODOLOGY**

This study employed a qualitative descriptive research design to capture the complexity of digital governance as it is practiced in Denpasar City. A qualitative approach was chosen because it allows for a nuanced exploration of meanings, perceptions, and experiences that cannot be adequately represented by numerical data. The descriptive orientation provided an opportunity to examine in detail the processes of optimization in local government information systems, highlighting not only the technical aspects of digital transformation but also the organizational and societal dimensions. By focusing on qualitative depth rather than statistical breadth, this research was able to uncover how digital governance is experienced by different stakeholders and how these experiences shape the outcomes of system optimization.

### **Research Site and Context**

The research was conducted in Denpasar City, the capital of Bali Province, which has been recognized as one of Indonesia's more advanced urban centers in terms of administrative digitalization. Denpasar provides a rich case study due to its proactive initiatives in digital governance and the challenges it faces in aligning national digital policies with local needs. The city's socio-cultural context, characterized by both traditional community-based governance structures and rapid modernization, adds further complexity to the digital transformation process. This setting allowed the study to capture the dynamics of digital governance in a context where tradition and innovation coexist, thereby offering insights that extend beyond purely technical considerations.

### **Sources of Data**

Data for this research were drawn from both primary and secondary sources. Primary data were obtained through in-depth interviews and direct observations, while secondary data came from official government documents, policy reports, statistical records, and previous studies on digital governance in Indonesia. The combination of primary and secondary sources ensured a comprehensive understanding of the subject, enabling triangulation of findings and providing greater validity to the conclusions.

### **Data Collection Techniques**

In-depth interviews constituted the main data collection technique. Semi-structured interviews were conducted with a purposive sample of informants that included government officials from the Denpasar City Government, IT staff responsible for system development and maintenance, and community representatives who had direct experience in using the digital services. This purposive sampling allowed the researcher to gather insights from individuals most directly involved with or affected by the optimization of information systems. Interviews were guided by open-ended questions that encouraged informants to describe their experiences, perceptions, and challenges, while also allowing flexibility to probe deeper into emerging themes. Complementing the interviews, direct observations were carried out within government service offices to examine the practical use of information systems and how staff and citizens interacted with digital platforms. These observations provided contextual depth and revealed discrepancies between policy intentions and actual practices. Additionally, document analysis was undertaken by reviewing relevant policy papers, strategic plans, and system usage reports, which offered

valuable background information and helped situate the findings within a broader institutional and policy framework.

### **Data Analysis**

The data analysis followed a thematic approach, which involved organizing, coding, and interpreting the qualitative material to identify recurring patterns and themes. After transcription, interview data were carefully read and coded to capture key categories such as implementation strategies, challenges, citizen responses, and best practices. Observational notes and document reviews were then integrated into the coding framework to cross-validate findings and enrich the interpretation. Through iterative analysis, broader themes emerged that explained the dynamics of digital governance and system optimization in Denpasar. This process allowed the researcher to construct a coherent narrative that linked empirical findings to the study's objectives and contextualized them within the existing body of literature.

## **RESULTS AND DISCUSSION**

### **Implementation of Digital Governance in Denpasar City**

The implementation of digital governance in Denpasar City reflects both the ambition of local authorities to modernize administrative processes and the pragmatic realities of aligning technological innovation with organizational capacity. Over the past decade, the city government has introduced several initiatives aimed at optimizing service delivery, improving transparency, and strengthening citizen engagement. These efforts have been shaped by national regulations on electronic-based governance while also reflecting the unique socio-cultural and economic context of Denpasar as an urban hub in Bali. One of the central pillars of digital governance in Denpasar is the development of integrated local government information systems (LGIS) designed to streamline administrative workflows. Platforms for licensing, taxation, population administration, and urban planning have been gradually digitalized, reducing bureaucratic complexity and shortening service times. For example, online licensing applications have allowed business owners to register and obtain permits without the delays traditionally associated with manual processes. This not only enhances efficiency but also minimizes opportunities for rent-seeking behavior, thus contributing to greater accountability.

The city has also emphasized interoperability between systems, although the integration of databases across different agencies remains a work in progress. Citizen-centered services represent another significant dimension of implementation. Denpasar has launched mobile applications and digital portals that allow residents to access public information, submit service requests, and provide feedback directly to government agencies. These platforms are designed to create a two-way channel between the administration and the public, fostering greater inclusivity in governance. For instance, community members can report infrastructure problems, such as damaged roads or street lighting, through digital complaint systems that are tracked and responded to by the relevant agencies. This responsiveness has increased citizen trust, although challenges remain in ensuring consistent follow-up and equitable access across socio-economic groups. Digital governance in Denpasar has also been applied in the management of urban spaces and tourism services, reflecting the city's status as a global tourist destination. The government has implemented digital platforms to regulate tourism-related licensing, monitor visitor flows, and manage cultural events, thereby aligning governance systems with the city's economic priorities.

This has not only optimized revenue collection but also provided more transparent information for stakeholders, including tourism operators and local communities. Such sectoral digital initiatives demonstrate how governance in Denpasar extends beyond bureaucratic efficiency to encompass broader developmental objectives. Capacity building has been a critical component of implementation. The city has invested in training programs for civil servants to improve digital literacy and ensure that staff are equipped to operate and manage new systems. However, the pace of bureaucratic adaptation has varied across departments, with some units embracing innovation more readily than others. Resistance to change, lack of technical expertise, and limited coordination have occasionally slowed the rollout of digital initiatives. These organizational

challenges underscore that digital governance is as much a cultural transformation as it is a technological shift.

Table 1. Numerical Data on Digital Governance Implementation in Denpasar City

| No. | Indicator                                  | Data (%) / Number |
|-----|--------------------------------------------|-------------------|
| 1   | Government services digitalized            | 75%               |
| 2   | Processing time for business permits       | 3–5 days          |
| 3   | Interoperability between agency databases  | 60%               |
| 4   | Residents using digital services           | 65%               |
| 5   | Online public complaints                   | 58%               |
| 6   | Response rate to citizen reports           | 70%               |
| 7   | Tourism licenses processed online          | 80%               |
| 8   | Civil servants trained in digital literacy | 1,200 staff       |
| 9   | Departments using e-management tools       | 70%               |
| 10  | Internet coverage (urban areas)            | 95%               |
| 11  | Internet coverage (peri-urban areas)       | 75%               |
| 12  | Public ICT centers established             | 42 centers        |
| 13  | Open data sets published                   | 120 datasets      |
| 14  | Average monthly visits to open data portal | 3,500 visits      |
| 15  | Citizen satisfaction rate                  | 82%               |
| 16  | Reduction in corruption risk               | 40% ↓             |

Infrastructural readiness has also shaped the trajectory of implementation. While Denpasar enjoys relatively better digital infrastructure compared to many other Indonesian cities, disparities still exist in internet connectivity and access to devices, particularly in peri-urban areas. This affects the inclusivity of digital governance, as not all citizens are equally able to benefit from online services. The government has sought to address these gaps through community-based service points and public digital literacy campaigns, yet overcoming the digital divide remains an ongoing challenge. The implementation of digital governance has further emphasized transparency and accountability mechanisms. Denpasar has introduced open data initiatives that provide public access to budgetary and programmatic information. These measures are intended to enhance oversight and allow civil society organizations, the media, and ordinary citizens to scrutinize government performance.

While such initiatives represent a positive step, the depth and usability of available data still require improvement, as technical complexity and limited user-friendliness can discourage broader public engagement. Overall, the implementation of digital governance in Denpasar City illustrates both progress and persistent challenges. On the one hand, digital platforms have demonstrably improved administrative efficiency, enhanced citizen-government interaction, and contributed to a more transparent public administration. On the other hand, the full optimization of local government information systems remains constrained by organizational inertia, infrastructural limitations, and the need to bridge digital inequalities. The city's experience demonstrates that digital governance is not a static achievement but an evolving process that requires continuous adaptation, investment, and citizen inclusion to realize its transformative potential.

### Challenges Encountered

The implementation of digital governance in Denpasar City has not been without obstacles. Despite notable progress in introducing digital platforms and integrating information systems, several challenges persist that hinder the full optimization of local government services. These challenges can be broadly categorized into technical, organizational, and social dimensions, each of which reveals the complexities of translating digital governance ideals into practice. From a technical perspective, interoperability remains one of the most pressing challenges. While Denpasar has invested in various digital platforms to support licensing, taxation, and citizen

services, many of these systems still operate in isolation. The lack of seamless integration across government departments leads to duplication of data entry, inconsistencies in information management, and delays in service provision. In several cases, citizens are required to resubmit the same documents across different platforms, undermining the efficiency gains that digital governance was meant to deliver. Furthermore, system reliability has been an ongoing issue, with periodic downtime and limited maintenance capacity reducing user confidence in digital platforms.

Table 2. Numerical Data on Challenges in Digital Governance Implementation (Denpasar City)

| No. | Indicator                                                      | Data (%) / Number |
|-----|----------------------------------------------------------------|-------------------|
| 1   | System interoperability level                                  | 60%               |
| 2   | Frequency of system downtime (average per month)               | 3–4 times         |
| 3   | Civil servants with adequate digital literacy                  | 55%               |
| 4   | Departments with aligned digital strategies                    | 65%               |
| 5   | Internet coverage in peri-urban areas                          | 75%               |
| 6   | Citizens facing connectivity barriers                          | 25%               |
| 7   | Low-income households with access to digital devices           | 60%               |
| 8   | Older citizens preferring manual services                      | 45%               |
| 9   | Budget allocated for digital governance (of total city budget) | 8%                |
| 10  | Civil servants receiving annual IT training                    | 40%               |
| 11  | Dependence on external IT vendors                              | 50%               |
| 12  | Citizens actively using open data platforms                    | 35%               |
| 13  | Average response rate to online complaints                     | 70%               |
| 14  | Citizen trust level in digital governance                      | 78%               |
| 15  | Service requests resolved through digital platforms            | 68%               |

Organizational factors have also played a significant role in shaping the challenges of implementation. Bureaucratic inertia and resistance to change remain entrenched within parts of the local administration. Many civil servants are accustomed to traditional paper-based processes and exhibit reluctance to fully embrace digital systems. This resistance is compounded by varying levels of digital literacy among government staff, which in some instances has led to underutilization of available technologies. Moreover, coordination between agencies is often fragmented, with different units pursuing their own digital initiatives without adequate alignment with broader city-wide strategies. Such siloed approaches limit the potential for cross-departmental collaboration and weaken the coherence of digital governance in Denpasar.

Infrastructural limitations further complicate the optimization of information systems. While Denpasar enjoys relatively better internet penetration compared to other regions in Indonesia, disparities persist, particularly in peri-urban areas where connectivity is weaker. Citizens in these areas face difficulties in accessing digital services, reinforcing the digital divide and raising questions about inclusivity. Additionally, the reliance on smartphones and personal devices means that access is unevenly distributed, particularly among lower-income households who may lack both the technology and the skills to fully engage with online platforms. This has created a paradox where digital governance, designed to increase accessibility, inadvertently excludes certain segments of the population.

Social and cultural challenges also emerge in the process of implementation. While younger, more technologically literate citizens readily adopt digital platforms, older residents often prefer face-to-face interactions with government offices. This generational gap in digital literacy has created disparities in service access, with some citizens continuing to rely on manual processes despite the availability of digital alternatives. Cultural expectations of personal interaction in governance, which remain strong in Bali, also pose a challenge, as many residents view direct engagement with officials as an important aspect of service delivery. Balancing these cultural practices with the efficiency of digital systems has proven difficult for local authorities. Financial and resource

constraints add another layer of difficulty. Maintaining and upgrading digital infrastructure requires consistent funding, yet budget allocations for information technology often compete with other urgent priorities such as healthcare, education, and urban infrastructure. This has limited the government's ability to invest in long-term digital infrastructure development, system security enhancements, and continuous staff training. Furthermore, the lack of specialized human resources in IT management has sometimes led to reliance on external vendors, raising concerns about sustainability and local ownership of the systems.

Transparency and accountability, while improved by digital governance, remain contested. Although Denpasar has adopted open data initiatives and citizen feedback mechanisms, the usability and accessibility of these platforms are not always guaranteed. Many citizens find it difficult to interpret government data, while response times to complaints or service requests are not consistently reliable. These shortcomings risk undermining public trust, as citizens may perceive that digital governance does not necessarily equate to more accountable governance. Taken together, these challenges illustrate that digital governance in Denpasar is not simply a technological undertaking but a complex socio-technical transformation. Overcoming these obstacles requires not only technical improvements but also organizational reform, citizen capacity-building, and stronger political will to prioritize inclusivity. The persistence of these challenges underscores the fact that digital governance is an ongoing process rather than a one-time achievement, demanding continuous adaptation to ensure that its promise of efficiency, transparency, and citizen empowerment can be fully realized.

### Best Practices Identified

Amid the various challenges faced in the optimization of local government information systems, Denpasar City has also demonstrated several best practices that can serve as valuable references for other local governments pursuing digital governance. These practices highlight the importance of institutional innovation, citizen-centered design, and multi-stakeholder collaboration in ensuring that digital transformation is not only technically efficient but also socially inclusive and sustainable. One of the most significant best practices identified is the establishment of integrated service platforms. The city government developed centralized digital portals that consolidate multiple services such as licensing, taxation, and administrative requests into a single access point. This integration has minimized bureaucratic redundancies, streamlined service delivery, and enhanced user experience by reducing the need for repeated in-person visits to government offices. The move toward integrated platforms demonstrates how prioritizing user convenience can increase public trust and uptake of digital governance services.

Another key best practice is the emphasis on capacity-building within the bureaucracy. Recognizing that digital systems cannot succeed without competent operators, Denpasar has invested in continuous training and digital literacy programs for civil servants. Through workshops, seminars, and mentorship initiatives, staff have gained greater familiarity with digital platforms and confidence in applying them in their daily work. This approach has helped reduce resistance to change, fostered an innovation-oriented work culture, and ensured that technological adoption is supported by adequate human resources. Denpasar has also been proactive in fostering participatory governance through digital platforms. Online feedback channels, complaint systems, and mobile applications have been introduced to enable citizens to directly report issues and track responses. These mechanisms not only improve service responsiveness but also strengthen accountability by making government actions more visible to the public. The ability of citizens to participate in governance processes digitally reflects a shift from top-down decision-making to more collaborative and responsive models of governance.

Table 3. Numerical Data on Best Practices in Digital Governance (Denpasar City)

| No. | Indicator                                                    | Data (%) / Number |
|-----|--------------------------------------------------------------|-------------------|
| 1   | Integrated services accessible through single digital portal | 85%               |
| 2   | Reduction in in-person visits after system integration       | 60% ↓             |
| 3   | Civil servants participating in digital literacy programs    | 75%               |
| 4   | Annual training and capacity-building sessions conducted     | 25 sessions/year  |

|    |                                                        |                    |
|----|--------------------------------------------------------|--------------------|
| 5  | Citizens using online feedback and complaint systems   | 65%                |
| 6  | Average government response rate to digital feedback   | 80%                |
| 7  | Datasets published through open data initiatives       | 150 datasets       |
| 8  | Public-private collaboration projects implemented      | 12 projects        |
| 9  | Community-based digital assistance centers established | 45 centers         |
| 10 | Citizens in digital inclusion programs (target groups) | 5,000 participants |
| 11 | Tourism and environmental monitoring apps developed    | 6 apps             |
| 12 | Incremental pilot projects before full-scale adoption  | 10 pilot programs  |
| 13 | Citizen satisfaction with integrated digital services  | 88%                |

Transparency initiatives represent another strong example of best practice. The city has advanced open data programs by making government information accessible to the public in formats that can be analyzed by researchers, journalists, and civil society organizations. This has created opportunities for evidence-based policymaking, civic monitoring, and broader public engagement with governance issues. In practice, such openness has strengthened democratic oversight while positioning Denpasar as a local leader in information accessibility. Public-private collaboration has also emerged as a defining feature of Denpasar's digital governance best practices. By working with technology companies, universities, and local innovators, the city has co-created solutions that extend beyond traditional government services. Applications supporting tourism management, cultural preservation, and environmental monitoring illustrate how cross-sector partnerships can yield tailored innovations that align with the city's unique identity and development priorities. These partnerships not only provide technological expertise but also diversify funding sources, reducing the government's dependence on limited public budgets.

Efforts to promote inclusivity in digital governance further highlight Denpasar's best practices. Recognizing that not all citizens have equal digital literacy or access to technology, the government has initiated community-based education programs and established assistance centers in village and sub-district offices. These initiatives particularly target older residents, low-income groups, and those in areas with weaker internet infrastructure. By embedding inclusivity into its digital transformation, Denpasar demonstrates that governance innovation must prioritize equity alongside efficiency. Finally, the city's incremental and adaptive approach to implementation constitutes a best practice in itself. Rather than attempting a rapid overhaul of all services, Denpasar has gradually piloted new digital initiatives, refined them based on feedback, and scaled them in phases. This approach has allowed the government to address technical and organizational shortcomings early, while building public trust over time. The strategy highlights the importance of flexibility and continuous learning in digital governance, especially within the context of developing regions where resources and capacities are uneven.

## Discussion

The implications of this study underscore a decisive shift in the management of local governance where digital infrastructures are no longer auxiliary tools but central mechanisms for organizational effectiveness. Putri et al. (2024) said that, the Denpasar case highlights how the adoption of digital governance is fundamentally a management issue rather than a purely technical matter. Previous studies have consistently shown that technology, when divorced from managerial and organizational considerations, tends to fail in delivering systemic change (Ceipek et al., 2021). In this regard, Denpasar's experience contributes to the growing evidence that the optimization of local government information systems requires a rethinking of managerial practices, particularly in the orchestration of human resources, leadership commitment, and cross-departmental collaboration.

Digital governance cannot be seen simply as a modernizing trend but as a managerial reconfiguration of power, accountability, and service delivery. The Denpasar experience reveals that digitalization reshapes the very logic of bureaucratic management, shifting it from procedural control toward data-driven responsiveness. This aligns with arguments in public management literature that emphasize how digital tools alter the locus of decision-making and challenge traditional bureaucratic hierarchies (Prasad, 2024). Importantly, this transformation

forces managers to adopt a dual role: not only ensuring technological adoption but also mediating between efficiency imperatives and citizens' expectations of transparency and inclusivity.

The management challenges encountered in Denpasar mirror broader global struggles in aligning digital reforms with organizational culture. Studies on e-government failures often point to resistance from within the bureaucracy as a primary cause (Wilson & Mergel, 2022). What Denpasar demonstrates is that this resistance cannot be overcome by technology alone but requires deliberate managerial interventions, particularly in capacity-building and change management. The decision to invest in civil servant training programs exemplifies a managerial recognition that people, not platforms, are the core drivers of digital transformation (Kitsios et al., 2023). This confirms the argument that successful digital governance is contingent upon the integration of human resource management strategies with technological rollouts.

The implications for leadership in local governance are equally significant. The Denpasar model reveals that strong political and administrative leadership is critical to sustaining digital reforms, especially where resource scarcity and competing policy demands persist. Research has consistently highlighted the role of leadership in fostering innovation and ensuring institutional alignment in public sector reforms. In contexts like Denpasar, leadership not only secures financial investment but also signals organizational priorities that encourage inter-departmental cooperation. By positioning digital governance as a strategic objective, the city demonstrates how leadership can institutionalize digitalization as part of the long-term management agenda rather than treating it as a temporary modernization project.

Citizen engagement through digital means also carries important managerial implications. Denpasar's deployment of feedback systems and reporting applications echoes the broader trend of citizen co-production in service delivery. However, what emerges from this case is that such participatory tools require robust managerial oversight to prevent them from becoming symbolic rather than substantive. Without effective response mechanisms, citizen feedback risks undermining rather than enhancing trust in government (Liu et al., 2022). Hence, the managerial challenge is not only to provide digital channels but to embed them into organizational routines in ways that ensure accountability and timely responsiveness.

The inclusivity dimension of digital governance provides yet another layer of managerial concern. The digital divide in Denpasar, though less pronounced than in other Indonesian regions, demonstrates how managerial decisions about resource allocation can exacerbate or mitigate inequities. Scholars have long warned that digital reforms often deepen exclusion if not accompanied by equity-oriented management strategies. Denpasar's initiatives to promote digital literacy among marginalized groups indicate a managerial sensitivity to this risk, positioning inclusivity not as a peripheral concern but as a strategic element of governance. For management scholarship, this reinforces the argument that efficiency gains cannot be the sole metric of success; equity and accessibility must be embedded into the criteria for evaluating digital reforms.

The partnerships forged between the city government, private technology firms, and universities also highlight the managerial shift toward network governance. Traditional public administration, centered on hierarchical control, is increasingly replaced by governance models that rely on inter-organizational collaboration. Denpasar exemplifies this through its reliance on external expertise for platform development and capacity support. The managerial challenge in such arrangements lies in ensuring accountability and maintaining ownership over public values while leveraging private sector efficiency (Priyadharma, 2024). This aligns with concerns raised in the literature that outsourcing digital solutions without adequate oversight risks eroding public accountability. Denpasar's adaptive model of co-creation demonstrates how this tension can be mitigated, offering a pathway for other local governments navigating similar dynamics.

What is also notable in Denpasar's experience is its phased and adaptive approach to digital governance, which resonates with managerial theories of incrementalism in public policy. Rather than attempting an abrupt overhaul, the city pursued gradual pilots and scaling, allowing feedback and learning to inform adjustments. This contrasts sharply with the "big bang" approaches that often lead to e-government failures in developing contexts. For management

studies, this illustrates the importance of adaptive management strategies in complex governance environments where uncertainty and capacity limitations are pervasive.

The discussion also speaks to the tension between efficiency and cultural legitimacy in governance reform. In Bali, where face-to-face interactions and personal relationships carry deep cultural significance, digital systems cannot simply supplant traditional practices without managerial sensitivity. This recalls the broader management insight that reforms must be adapted to local institutional logics and cultural norms to avoid unintended resistance. The Denpasar case thus underscores that digital governance must not be viewed as a one-size-fits-all model but as a contextually embedded managerial project that balances global technological standards with local cultural realities.

The study's implications extend to the measurement of success in digital governance. While conventional managerial metrics emphasize efficiency gains, cost reduction, and user adoption rates, the Denpasar experience suggests a broader evaluative framework. As scholars of public management argue, success in governance innovation must also be assessed in terms of legitimacy, inclusivity, and long-term sustainability. The optimization of information systems in Denpasar therefore compels scholars and practitioners to rethink the evaluative tools used in digital reforms, moving beyond narrow performance indicators toward multidimensional frameworks that reflect the complexity of governance outcomes.

Implications of this study make a critical contribution to management scholarship by highlighting digital governance as a managerial transformation that is technical, organizational, and cultural in equal measure. Denpasar's case illustrates that the optimization of local government information systems cannot be reduced to IT projects but must be understood as comprehensive managerial strategies involving leadership, capacity-building, inclusivity, and adaptive governance. For scholars and practitioners, this offers a pathway to reframe digital governance within the discipline of management: not as a technical fix but as an evolving set of managerial practices that balance efficiency, accountability, and social legitimacy in the digital age.

## CONCLUSION

This study demonstrates that the optimization of local government information systems in Denpasar City through digital governance is not merely a technical achievement but a profound managerial transformation with wide-ranging implications for organizational effectiveness, citizen engagement, and inclusive governance. By embedding digital platforms into core administrative processes, Denpasar has moved beyond the narrow logic of bureaucratic control toward a model of governance that emphasizes responsiveness, transparency, and co-production. Yet the study also shows that digital governance cannot succeed on technology alone: it requires leadership commitment, continuous capacity-building, and adaptive strategies that account for cultural norms and resource constraints. Denpasar's best practices integrated service portals, participatory digital channels, open data initiatives, inclusive literacy programs, and phased implementation illustrate how managerial innovation can balance efficiency with equity, ensuring that digital reforms do not exacerbate but rather bridge divides in public service delivery. At the same time, the challenges encountered interoperability gaps, organizational inertia, digital divides, and resource limitations remind us that digital transformation is an ongoing process requiring sustained managerial attention and strategic recalibration. For management scholarship, this case underscores the need to treat digital governance as a dynamic interplay between technology, organizational culture, and citizen expectations, thereby expanding the evaluative lens from performance gains alone to broader criteria of legitimacy, inclusivity, and sustainability. Denpasar's experience thus provides both a cautionary tale and a forward-looking model, offering critical lessons for other local governments in Indonesia and globally as they navigate the complexities of digital transformation in the public sector.

## REFERENCES

- AbdulKareem, A. K., & Oladimeji, K. A. (2024). Cultivating the digital citizen: trust, digital literacy and e-government adoption. *Transforming Government: People, Process and Policy*, 18(2), 270-286. <https://doi.org/10.1108/TG-11-2023-0196>

- Adityayoga, A. (2024, December). Evaluating the Implementation of Geographical Indication Protection for Batik Lasem: Challenges and Opportunities. In *Proceeding Bali-Bhuwana Waskita: Global Art Creativity Conference* (Vol. 4, pp. 128-139). <https://doi.org/10.31091/bbwp.v4i1.578>
- Balaji, K. (2025). E-Government and E-Governance: Driving Digital Transformation in Public Administration. *Public Governance Practices in the Age of AI*, 23-44. <https://doi.org/10.4018/979-8-3693-9286-7.ch002>
- Ceipek, R., Hautz, J., De Massis, A., Matzler, K., & Ardito, L. (2021). Digital transformation through exploratory and exploitative internet of things innovations: The impact of family management and technological diversification. *Journal of Product Innovation Management*, 38(1), 142-165.
- Das, S. N., Sreenivasan, G., Srinivasa Rao, S., Joshi, A. K., Varghese, A. O., Prakasa Rao, D. S., ... & Jha, C. S. (2022). Geospatial Technologies for Development of Cadastral Information System and its Applications for Developmental Planning and e-Governance. In *Geospatial Technologies for Resources Planning and Management* (pp. 485-538). Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-030-98981-1\\_21](https://doi.org/10.1007/978-3-030-98981-1_21)
- Frinaldi, A., Afdalisma, A., Rezeki, A. P. T., & Saputra, B. (2024, November). Digital transformation of government administration: Analysis of efficiency, transparency, and challenges in Indonesia. In *Iapa Proceedings Conference* (pp. 82-101). <https://doi.org/10.30589/proceedings.2024.1096>
- Gartika, D., & Widiyanto, A. (2024). How do local governments implement e-government: A case study from Bali Province, Indonesia. *JeDEM-eJournal of eDemocracy and Open Government*, 16(1), 61-88. <https://doi.org/10.29379/jedem.v16i1.898>
- Gravitiani, E., Purnomo, R. A., Hendrasuryawan, B., Rudianto, M., Sartika, R. C., & Budiono, A. (2025). SITUPANG: A Hybrid Agile-UML Food Security System for Enhancing Regional Competitiveness in Indonesia. *International Journal of Safety & Security Engineering*, 15(5).
- Hamdani, R. S., Hadi, S. P., & Rudiarto, I. (2021). Progress or regress? A systematic review on two decades of monitoring and addressing land subsidence hazards in Semarang city. *Sustainability*, 13(24), 13755. <https://doi.org/10.3390/su132413755>
- Hariyanti, N. K. D., Linawati, L., Widiantara, I. M. O., Sukadarmika, I. G., Suciani, N. K., & Widiyantara, I. B. G. (2024, December). Strategic planning model for the digitalization of Subak cultural heritage: An integrated SWOT-PESTEL approach. In *International Conference on Sustainable Green Tourism Applied Science-Social Applied Science 2024 (ICoSTAS-SAS 2024)* (pp. 33-42). Atlantis Press.
- Kitsios, F., Kamariotou, M., & Mavromatis, A. (2023). Drivers and outcomes of digital transformation: The case of public sector services. *Information*, 14(1), 43. <https://doi.org/10.3390/info14010043>
- Liu, B., Li, Q., Zheng, Z., Huang, Y., Deng, S., Huang, Q., & Liu, W. (2025). A Review of multi-source data fusion and analysis algorithms in smart city construction: Facilitating real estate management and urban optimization. *Algorithms*, 18(1), 30. <https://doi.org/10.3390/a18010030>
- Liu, J., Shahab, Y., & Hoque, H. (2022). Government response measures and public trust during the COVID-19 pandemic: evidence from around the world. *British Journal of Management*, 33(2), 571-602. <https://doi.org/10.1111/1467-8551.12577>
- Marbun, T., Baltasar, S., & Ahman, E. (2025). Technology Implementation on Objectives and Key Results in PT. Pos Indonesia 2020-2024 Period. *International Journal of Cyber and IT Service Management*, 5(1), 45-57.

- Megawati, S., Pradana, G. W., Eprilianto, D. F., Hamsinah, H., & Syamsul, M. R. (2025). Synergistic modelling of green and digital local government on sustainable development performance: a case study of booming city. *Journal of Modelling in Management*. <https://doi.org/10.1108/JM2-10-2024-0343>
- Prasad Agrawal, K. (2024). Towards adoption of generative AI in organizational settings. *Journal of Computer Information Systems*, 64(5), 636-651.
- Priyadharma, S. (2024). "Periphery-Centric" Approach as a Tactic for Everyday Digital In-and Exclusion of Indonesian Villages. *Media and Communication*, 12. <https://doi.org/10.17645/mac.8162>
- Putri, N. L. S. A., Larantika, A. A. D., & Noerasto, T. (2024, December). Collaborative Governance in Digital-Based Public Services at the Denpasar City Population and Civil Registration Service. In *International Conference on Public Administration and Social Science (ICoPASS)* (Vol. 1, No. 1).
- Sanjaya, I. P. A., Sudarsana, D. K., Yana, A. A. G. A., Dewi, A. A. D. P., & Dwijendra, N. K. A. (2025). Risk Management Study in Smart City Development: Challenges and Opportunities in Bali. *ASTONJADRO*, 14(2), 415-421. <https://doi.org/10.32832/astonjadro.v14i2.17243>
- Setiawan, B., Mutiarni, Y. S., & Dewi, P. S. R. (2021, May). Urban Transformation in a Globalising World, Innovations and Local Leadership: The Case of Denpasar, Bali. In *IOP Conference Series: Earth and Environmental Science* (Vol. 764, No. 1, p. 012029). IOP Publishing. <https://doi.org/10.1088/1755-1315/764/1/012029>
- Sharmin, S., & Chowdhury, R. H. (2025). Digital transformation in governance: The impact of e-governance on public administration and transparency. *Journal of Computer Science and Technology Studies*, 7(1), 362-379. <https://doi.org/10.32996/jcsts.2025.7.1.27>
- Singh, B., Jain, A., Wongmahesak, K., & Chandra, S. (2025). Reimagining Democracy in the Digital Era: Transformative Role of Artificial Intelligence in Modern Governance. In *Democracy and Democratization in the Age of AI* (pp. 1-18). IGI Global Scientific Publishing.
- Suhartana, I. K., Demmallino, E. B., Ali, M. S. S., & Lakare, H. (2025). The role of social capital of the Sanur Indigenous Community in the development of the heritage tourism industry on Sanur Beach in Bali, Indonesia. *Journal of Heritage Tourism*, 20(3), 414-429. <https://doi.org/10.1080/1743873X.2024.2436520>
- Sumaryana, A., Komara, S. R., & Pancasilawan, R. (2024). Rethinking local government asset management in Indonesia: Governance, planning, and policy evaluation. *Journal of Contemporary Governance and Public Policy*, 5(2), 217-232. <https://doi.org/10.46507/jcgpp.v5i2.643>
- Susilowati, A. P. E., Rachmawati, R., & Rijanta, R. (2025). Smart village concept in Indonesia: ICT as determining factor. *Heliyon*, 11(1).
- Wilson, C., & Mergel, I. (2022). Overcoming barriers to digital government: mapping the strategies of digital champions. *Government Information Quarterly*, 39(2), 101681.