Opportunities of E-Governance in Dhangadi Sub-Metropolitan City: Enhancing Efficiency and Effectiveness of Municipal Administration and Staff

Bed Prakash Sharma

Lecturer of Political Science
Center for Nepal and Asian Studies, Tribhuvan University
Email: sharmabedprakash21@gmail.com
Doi: https://doi.org/10.3126/pragya.v14i1.90697

Abstract

This article examines the significant opportunities presented by e-governance in enhancing the efficiency and effectiveness of municipal administration and staff within Dhangadi Sub-Metropolitan City, Nepal. Drawing upon empirical findings from a recent study by Sharma (2025), this analysis highlights key areas where digital transformation has demonstrably improved operational capabilities, service delivery mechanisms, and overall administrative performance. Specifically, the article explores the positive impacts of robust ICT infrastructure, the strategic utilization of official websites and email systems, the successful integration of various software solutions, and the notable improvements in service delivery and communication. While acknowledging the nascent stage of e-governance in Nepal, the findings underscore the transformative potential of digital tools to streamline processes, reduce costs, improve communication, and foster greater accountability, thereby creating a more responsive and effective municipal government for its citizens.

Introduction

In an increasingly digitized global landscape, e-governance has emerged as a pivotal paradigm for modernizing public administration and improving the interface between governments and their citizens (Twizeyimana&Andersson, 2019). The integration of Information and Communication Technologies (ICT) into governmental processes promises to enhance service delivery, foster transparency, and promote efficiency, ultimately contributing to good governance (Ahmad et al., 2013; Sarikas, 2021). Nepal, a developing

nation, has also embarked on this digital journey, recognizing ICT as a fundamental tool for achieving a paperless governance system and ensuring citizen-centric administration (National Cybersecurity Policy, 2016).

Within Nepal's federal structure, municipalities serve as critical frontline institutions, directly interacting with the public for service delivery. As such, the successful adoption of e-governance at the local level is paramount for realizing national digital transformation goals. This article specifically focuses on Dhangadi Sub-Metropolitan City, examining the opportunities that e-governance provides for enhancing the efficiency and effectiveness of its municipal administration and staff. By delving into the empirical findings of a recent case study (Sharma, 2025), this paper aims to delineate the specific avenues through which digital initiatives have positively impacted the operational capabilities and service delivery mechanisms within this particular local government entity.

The adoption of e-governance is not merely about technological implementation; it encompasses a broader shift towards streamlined processes, improved resource management, and strengthened inter-institutional collaboration (OECD, 2012). It holds the potential to curb corruption by digitizing administrative processes, thereby reducing human intervention and limiting opportunities for malpractices (Kim, Kim, & Lee, 2009). For developing economies like Nepal, e-government is viewed as a crucial mechanism for ensuring high-quality, sustainable, and citizen-centric public services (Mia & Subramaniam, 2023). This article, drawing from the detailed analysis presented in the "Opportunities and Challenges of E-Governance in Nepal (A Case Study of Dhangadi Sub-metropolitan City)" by Bed Prakash Sharma (2025), will systematically explore how e-governance tools and initiatives have created tangible opportunities for efficiency and effectiveness within Dhangadi's municipal context.

Methodology

This article synthesizes findings from a comprehensive research study that employed a positivist paradigm and a quantitative research method to examine e-governance issues in Dhangadi Sub-Metropolitan City (Sharma, 2025). The original study utilized a descriptive research design to assess the application status of e-governance and its effects on public service delivery. Primary data were systematically collected from municipal staff through structured questionnaires, primarily employing Likert scale measurements to quantify perceptions and levels of agreement. A total of 130 samples were selected for the study based on a simple random sampling method. This approach facilitated the identification of patterns and trends related to the adoption and impact of e-governance tools within the

municipality. Secondary data was sourced from relevant published and unpublished literature, including government reports and academic articles. While the original study provided a holistic view of both opportunities and challenges, this article specifically extracts and expands upon empirical evidence about the *opportunities* of e-governance, thereby focusing on how digital initiatives enhance the efficiency and effectiveness of municipal administration and staff in Dhangadi. The data presented in the subsequent sections are directly derived from the statistical analyses and mean values reported in the original thesis, reflecting the perceptions of the surveyed municipal employees.

Opportunities Provided by E-Governance in Dhangadi Sub-Metropolitan City

The empirical findings from the study in Dhangadi Sub-Metropolitan City reveal several significant opportunities created by the application of e-governance tools, directly contributing to enhanced efficiency and effectiveness within the municipal administration and among its staff (Sharma, 2025). These opportunities are multidimensional, spanning from foundational ICT infrastructure to the strategic implementation of various software solutions and their tangible impacts on service delivery and communication.

Robust ICT Infrastructure as a Foundation for Efficiency

A fundamental prerequisite for successful e-governance implementation is the availability of adequate ICT infrastructure (Gupta et al., 2020). In Dhangadi, the study indicates a strong foundation in this regard. The "Availability of computers for municipal operations" scored a mean value of 3.6, with a significant number of respondents (70) indicating moderate agreement and a combined 60 respondents agreeing or highly agreeing that computers are readily available for official work (Sharma, 2025, p. 40). This high mean value suggests that municipal staff generally have access to the basic computational tools necessary for digital operations.

Furthermore, the aspect of "Regular maintenance and technical support for computer systems" also received a positive mean score of 3.4 (Sharma, 2025, p. 40). This indicates a commendable level of ongoing support, which is critical for ensuring the smooth functioning of digital tools, minimizing downtime, and addressing technical glitches promptly. Effective maintenance directly translates to enhanced operational efficiency by preventing disruptions and ensuring staff can consistently utilize their digital resources. The presence of a "Backup system in place to ensure data security and recovery" (mean value 3.3) further reinforces the robustness of the ICT environment, providing a layer of data protection that is essential for effective and reliable governance (Sharma, 2025, p. 40). A reliable backup system minimizes the risk of data loss, ensuring business continuity and

maintaining the integrity of municipal records, which is crucial for effective administration. The presence of "application servers, file servers, and printer servers for efficient digital operations" (mean value 3.2) indicates a moderately developed server infrastructure that supports centralized digital operations, file sharing, and networked printing, further enhancing operational efficiency within the municipal offices (Sharma, 2025, p. 40). These infrastructural elements together form a stable digital backbone, enabling municipal staff to conduct their duties with greater speed and reliability, thereby boosting their overall effectiveness.

Official Websites and Email Systems for Enhanced Communication and Transparency

The digital interface of a government body, primarily its official website and email systems, serves as a crucial channel for communication and service delivery (Rodriguez et al., 2020). Dhangadi Sub-Metropolitan City has made significant strides in establishing these foundational digital communication channels, presenting clear opportunities for enhanced transparency and efficient information exchange.

Remarkably, the study revealed a unanimous positive response regarding the municipality's official email system and website presence (Sharma, 2025, p. 41). Both "The municipality operates an official email system under the 'gov.np' domain" and "It maintains official websites for public communication and services" received a perfect mean score of 5.0, with all 130 respondents indicating "Highly Agree" (Sharma, 2025, p. 41). This indicates that Dhangadi has successfully established the basic digital infrastructure for formal communication and public information dissemination. The use of a ".gov.np" domain not only lends credibility and authenticity to official communications but also centralizes digital identity, making it easier for citizens and other government bodies to identify and interact with the municipality reliably.

Official websites serve as repositories of public information, enabling citizens to access details about municipal services, policies, and updates without the need for physical visits. This enhances transparency by making governmental operations more accessible to the public. For municipal staff, standardized email systems streamline internal and external correspondence, fostering faster decision-making and reducing reliance on traditional, slower communication methods. While the overall "key features of new websites" received a lower mean of 2.6, suggesting room for improvement in advanced functionalities like content management systems or instant search (Sharma, 2025, p. 41), the mere existence and widespread acknowledgment of these fundamental digital platforms signify a strong opportunity. They provide the necessary channels through which future e-governance

initiatives can be built, ensuring a continuous flow of information that is vital for an effective and responsive administration.

Strategic Software Utilization for Streamlined Operations and Improved Service Delivery

The adoption and effective utilization of specialized software solutions are pivotal for automating processes, managing data, and enhancing the efficiency of municipal operations. Dhangadi Sub-Metropolitan City has leveraged various software systems to its advantage, creating significant opportunities for improved administration and service delivery. The study highlights several areas where software implementation has yielded positive outcomes (Sharma, 2025, p. 43).

One of the most impactful implementations is the "Municipal Accounting System (SUTRA)," which scored a high mean value of 4.2 (Sharma, 2025, p. 43). This indicates that the municipality utilizes a robust digital system for its financial management, which is critical for accuracy, transparency, and efficient resource allocation. Digital accounting systems minimize manual errors, speed up financial reporting, and provide real-time insights into fiscal health, thereby enhancing the effectiveness of financial administration.

Similarly, the "E-Procurement Platform" (mean value 4.0) and "Vital Registration System (Online System of Ministry)" (mean value 4.0) demonstrate the municipality's commitment to digitizing core services (Sharma, 2025, p. 43). E-procurement introduces transparency and efficiency into the tendering process, reducing opportunities for corruption and ensuring fair competition. Online vital registration streamlines the process of birth, death, and marriage registrations, making these essential services more accessible and less cumbersome for citizens, directly translating into improved service effectiveness.

Other highly-rated software implementations include the "Social Security (Online System of Ministry)" (mean value 3.8), "Digital Revenue and Tax Collection System" (mean value 3.8), and "Ward-Level Accounting System" (mean value 3.6) (Sharma, 2025, p. 43). These systems directly contribute to enhancing efficiency by automating previously manual processes, reducing queues, and ensuring accurate record-keeping. For instance, digital tax collection simplifies the payment process for citizens and improves revenue management for the municipality. Ward-level accounting systems decentralize financial tracking, enabling more granular oversight and responsiveness at the local administrative units.

Furthermore, specialized software for urban planning and development also shows positive adoption. The "Mapping and Electronic Building Permit System (EBPS)" received a mean

value of 4.0, and "Digital Drawing and Structural Analysis System" scored 3.6 (Sharma, 2025, p. 43). These applications enable more precise urban planning, faster processing of building permits, and better management of construction projects. By digitizing these complex processes, the municipality enhances its effectiveness in urban development, ensures compliance, and provides more efficient services to builders and citizens. The positive perception of these diverse software applications indicates a significant opportunity for Dhangadi to continue its digital transformation, leveraging automation and data management to achieve higher levels of administrative efficiency and service effectiveness.

Tangible Improvements in Service Delivery and Communication

Beyond the mere availability of infrastructure and software, the study indicates that e-governance has yielded tangible improvements in service delivery and communication, which are direct measures of enhanced efficiency and effectiveness (Sharma, 2025). Several aspects related to performance and service delivery show positive perceptions among municipal employees.

The e-governance initiatives are perceived to have "Assisted in service delivery" (mean value 3.6), indicating a general improvement in how services reach citizens (Sharma, 2025, p. 64). This assistance often manifests in faster processing times, reduced bureaucratic hurdles, and greater accessibility for the public. Closely related to this, the systems have "Helped save time" for both staff and citizens (mean value 3.6), a critical indicator of efficiency gains (Sharma, 2025, p. 64). Reduced time spent on administrative tasks or waiting in queues frees up resources that can be reallocated to other essential functions.

Moreover, e-governance has "Improved efficiency in service delivery" (mean value 3.2) and "Contributed to cost savings" (mean value 3.2) (Sharma, 2025, p. 64). Digital processes often require fewer paper resources, less physical infrastructure, and optimized workflows, all contributing to operational cost reductions. These savings can then be reinvested in further improving public services or digital infrastructure, creating a virtuous cycle of development. The "Increased satisfaction with service delivery" (mean value 3.4) points to a positive citizen experience, which is a key outcome of effective governance (Sharma, 2025, p. 64). When citizens are satisfied, it builds trust in governmental institutions and encourages greater engagement with digital platforms.

"Improved communication" (mean value 3.4) further highlights the positive impact of e-governance (Sharma, 2025, p. 64). Digital channels enable quicker and more targeted communication, both internally within the municipality and externally with citizens. This enhanced communication facilitates better coordination among departments, faster

dissemination of information, and more responsive feedback mechanisms, all contributing to overall administrative effectiveness. While the perceived impact on "Reduced corruption in accessing services" (mean value 2.2) and "Enhanced performance at the municipality" (mean value 2.4) shows room for improvement, the overall positive trends in efficiency, time-saving, cost-saving, and communication underscore the significant opportunities that e-governance has already brought to Dhangadi's municipal operations.

Leveraging Social Media for Public Outreach

In the contemporary digital age, social media platforms have become indispensable tools for public engagement and information dissemination. Dhangadi Sub-Metropolitan City has recognized this potential, particularly through the effective use of its official Facebook page, which presents a valuable opportunity for public outreach and dynamic communication (Sharma, 2025).

The "Official Facebook page for sharing information" scored a mean value of 3.6 (Sharma, 2025, p. 47). This positive response suggests that the municipality is successfully utilizing Facebook as a platform to disseminate important updates, announcements, and general information to its citizens. A well-managed social media presence can significantly enhance the municipality's reach, allowing for direct and rapid communication with a broad segment of the population. This contrasts with other social media platforms like Twitter and YouTube, which were found to be underutilized (mean values of 1.0 and 1.2 respectively), and Facebook's effectiveness for grievance handling which also scored low (mean value 1.4) (Sharma, 2025, p. 47).

The active use of Facebook for information sharing offers several opportunities for enhanced effectiveness. It enables the municipality to broadcast public service announcements, provide updates on local initiatives, and promote civic engagement. This direct channel of communication can build stronger community ties, increase public awareness of municipal services, and foster a sense of transparency. By leveraging a widely used platform like Facebook, Dhangadi can ensure that information reaches citizens in a timely and accessible manner, which is crucial for a responsive and effective local government. This existing strength in social media utilization can be further expanded upon to explore more interactive forms of engagement, transforming passive information sharing into active citizen participation.

Facilitating Conditions: IT Infrastructure and Service Standardization

The presence of robust IT infrastructure and the capability to standardize services are critical facilitating conditions that amplify the opportunities presented by e-governance. These elements collectively lay the groundwork for scalable and consistent digital service delivery, directly impacting the efficiency and effectiveness of municipal administration (Sharma, 2025).

The perception of "Adequate I.T infrastructure for Application of e-governance" received a strong mean value of 4.0 (Sharma, 2025, p. 69). This high level of agreement among respondents underscores that Dhangadi has a commendable digital backbone, which is essential for supporting all e-governance applications. An adequate infrastructure ensures that digital services can be deployed reliably, accessed efficiently, and scaled as demand grows, thereby underpinning the overall effectiveness of the e-governance ecosystem.

Furthermore, a significant opportunity lies in the ability of e-governance to "standardize services," as evidenced by a high mean value of 4.2 (Sharma, 2025, p. 69). Standardization ensures uniformity and consistency in how services are delivered across different departments or administrative units. This leads to predictable processes, reduced variations, and improved quality control, which are hallmarks of an effective administration. For municipal staff, standardized procedures simplify their work, reduce training requirements, and minimize errors, thereby increasing operational efficiency. For citizens, standardized services mean clarity, equity, and reliability, enhancing their trust and satisfaction with municipal offerings. The positive perception of standardization indicates that e-governance is effectively being used to create coherent and streamlined service delivery models within Dhangadi. These strong facilitating conditions provide a fertile ground for further e-governance expansion, allowing the municipality to build upon its digital strengths and continuously enhance its operational effectiveness.

Specific Website Functionalities for Citizen Convenience

While the overall assessment of new website features showed room for improvement, the study identified specific functionalities that are already well-received and present clear opportunities for enhancing citizen convenience and administrative efficiency (Sharma, 2025). These targeted strengths can be further developed to maximize the utility of the municipal website as a core e-governance tool.

"Web Search Functionality" with a mean value of 4.5, and "Downloadable Forms" with an impressive mean value of 4.7 (Sharma, 2025, p. 55). The high scores for these features

indicate that users find it easy to locate information on the website and readily access necessary documents.

The presence of effective web search functionality significantly enhances the efficiency of information retrieval for both citizens and municipal staff. Instead of navigating complex menu structures or visiting physical offices, users can quickly find the specific information they need. This reduces the burden on administrative staff who might otherwise spend time answering routine queries, allowing them to focus on more complex tasks.

Similarly, readily "Downloadable Forms" streamline many administrative processes. Citizens can access and complete official forms from the convenience of their homes or offices, eliminating the need for physical visits to municipal buildings. This not only saves time for citizens but also reduces foot traffic in municipal offices, allowing staff to manage inquiries and submissions more efficiently. For municipal staff, having standardized, easily accessible forms ensures consistency in applications and simplifies processing. These highly functional aspects of the municipal website demonstrate a clear opportunity to continue investing in user-centric design and content management, further improving citizen access to services and enhancing the overall efficiency of municipal interactions.

Discussion

The detailed examination of e-governance implementation in Dhangadi Sub-Metropolitan City, drawing from Sharma's (2025) thesis, unequivocally highlights a robust set of opportunities for enhancing the efficiency and effectiveness of municipal administration and staff. These opportunities are not merely theoretical constructs but are substantiated by empirical data reflecting the positive perceptions of the municipal employees themselves. The findings align strongly with the theoretical underpinnings of e-governance, which posit that the strategic application of ICT can fundamentally transform governmental operations and service delivery (Ahmad et al., 2013; Twizeyimana & Andersson, 2019).

The presence of a well-established ICT infrastructure, characterized by available computers, regular maintenance, and functional backup systems, forms the bedrock upon which effective e-governance is built. This echoes the broader literature emphasizing infrastructure readiness as a crucial determinant of e-governance success in developing countries (Heeks, 2002; UNESCAP, 2020). Such a foundation ensures reliability and reduces operational bottlenecks, directly translating into greater efficiency for staff who depend on these tools for their daily tasks. The unanimous adoption of official email and websites, particularly under the ".gov.np" domain, signifies a commitment to formal digital communication and transparency, which are hallmarks of good governance (Sharma, 2025). These platforms

facilitate seamless information dissemination, a cornerstone for both internal coordination and external citizen engagement, thereby enhancing administrative effectiveness.

Perhaps the most compelling evidence of opportunities lies in the successful implementation and positive perception of various software solutions. Systems for municipal accounting (SUTRA), vital registration, e-procurement, revenue collection, and urban planning (EBPS) have demonstrably streamlined complex administrative processes, reduced manual interventions, and improved data accuracy (Sharma, 2025). This automation directly contributes to the efficiency of municipal staff, freeing them from repetitive tasks and allowing them to focus on higher-value activities. Furthermore, the positive impact on service delivery—manifesting in saved time, reduced costs, and increased citizen satisfaction—underscores the transformative potential of these digital tools (Sharma, 2025). These outcomes resonate with the broader arguments that e-governance fosters citizen-centric, high-quality, and sustainable public services (Mia & Subramaniam, 2023).

The effective utilization of social media, particularly Facebook, for information sharing presents a significant opportunity for enhancing public outreach and transparency. In an age where digital communication is pervasive, leveraging such platforms ensures that municipal information reaches citizens promptly and through familiar channels, contributing to a more responsive and effective administration (Sharma, 2025). This proactive engagement can build public trust and foster a more collaborative relationship between the government and its constituents.

Moreover, the perceived adequacy of IT infrastructure as a facilitating condition and the high degree of service standardization through e-governance are pivotal. These elements create a consistent and reliable environment for digital operations, which is crucial for scalability and sustained improvements in service quality (Sharma, 2025). Standardized services not only enhance efficiency by simplifying processes for staff but also improve the user experience for citizens, making interactions with the municipality more predictable and accessible. Specific website functionalities like robust search capabilities and downloadable forms further amplify citizen convenience and reduce the burden on administrative staff, highlighting targeted areas of strength within the municipality's digital offerings (Sharma, 2025).

While the study also identifies challenges—such as the need for more training, better policy prioritization, and enhanced budget allocation—the focus of this article has been on the existing and emerging opportunities. The strong foundation in ICT infrastructure, the successful deployment of key software applications, and the visible improvements in

service delivery and communication collectively indicate that Dhangadi Sub-Metropolitan City is well-positioned to further leverage e-governance. By building on these strengths and strategically addressing the identified gaps, the municipality can significantly advance its journey towards truly efficient, effective, and citizen-centric digital administration.

Conclusion

The analysis of e-governance initiatives in Dhangadi Sub-Metropolitan City reveals a significant landscape of opportunities for enhancing the efficiency and effectiveness of its municipal administration and staff. The empirical evidence underscores that a robust ICT infrastructure, coupled with the strategic implementation of various software solutions, has already begun to transform traditional administrative processes. From the widespread availability of computers and reliable maintenance systems to the successful deployment of digital accounting, vital registration, and e-procurement platforms, Dhangadi is actively harnessing the power of technology to streamline operations.

These digital advancements have translated into tangible benefits, including improved service delivery, reduced processing times, enhanced cost savings, and more effective communication channels. The municipality's proactive use of official websites and email systems, alongside its established Facebook page for public outreach, demonstrates a commitment to transparency and citizen engagement. Furthermore, the perceived adequacy of IT infrastructure and the positive impact of e-governance on standardizing services lay a strong foundation for future digital growth.

In essence, Dhangadi Sub-Metropolitan City stands at a promising juncture in its e-governance journey. By strategically building upon these identified opportunities—leveraging its existing digital strengths, expanding successful software implementations, and continuously refining its digital communication strategies—the municipality can further enhance its administrative efficiency and deliver public services with greater effectiveness. This trajectory not only benefits the municipal staff through streamlined workflows but also significantly improves the overall experience and satisfaction of the citizens, fostering a more responsive, transparent, and ultimately, more effective local government.

References

Ahmad, M.O.; Markkula, J. &Oivo, M. (2013). Factors affecting e-government adoption in Pakistan: A citizen's perspective. *Transform. Gov. People rocess Policy*, *7*(3), 225–239.

Gupta, B., Dasgupta, S., & Gupta, A. (2020). Adoption of ICT in government organizations: Digital divide issues and initiatives. *Government Information Quarterly*, *37*(3), 101-126.

Heeks, R. (2002). E-Government in Africa: Promise and practice. *Information Polity*, *7*(2-3), 97-114.

Kim, S.; Kim, H.J. & Lee, H. (2009). An institutional analysis of an e-government system for anti-corruption: The case of OPEN. *Gov. Inf. Q.*, *26*(3), 42–50.

Mia, L. and Subramaniam, N. (2023). Impact of E-Government initiatives to combat corruption. *Sustainability*, *5*(2), 26-58.

National Cybersecurity Policy, (2016). Ministry of Information and Technology, Kathmandu, Nepal.

OECD. (2012). *Digital Government Review: Enhancing the Digital Transformation of Public Sectors*. OECD Publishing.

Rodriguez-Hevía, L.F.; Navío-Marco, J. & Ruiz-Gómez, L.M. (2020). Citizens' involvement in E-Government in the European Union: The Rising Importance of the Digital Skills. *Sustainability*, *12*(1), 68-07.

Sarikas, M. T. (2021). Thoughts on e-government. *The Journal of Enterprise Information*, 508-510.

Sharma, B. P. (2025). *Opportunities and Challenges of E-Governance in Nepal (A Case Study of Dhangadi Sub-metropolitan City)* (Unpublished master's thesis). Tribhuvan University, Nepal.

Twizeyimana, J.D. &Andersson, A. (2019). The public value of E-Government—A literature review. *Gov. Inf. Q.*, *36*(2), 167–178.

UNESCAP. (2020). *E-Government in Asia-Pacific: Progress and Future Challenges*. United Nations Economic and Social Commission for Asia and the Pacific.