OPPORTUNITIES AND CHALLENGES OF E-GOVERNANCE IN NEPAL

(A Case Study of Dhangadi Sub-metropolitan City)

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Letter of Approval

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DECLARATION

I hereby declare that this MPhil dissertation entitle **"Opportunities and Challenges of E-Governance in Nepal (A Case Study of Dhangadi Sub-metropolitan City)"** submitted to the Office of the Dean, Faculties of Humanities and Social Sciences, Tribhuvan University, is an entirely my original work. I have made due acknowledgement to all ideas and information borrowed from different sources in the course of writing this dissertation. The results presented in this dissertation have not been presented or submitted anywhere else for the award of any degree or for any other reasons. No part of the content of this dissertation has ever been published in any form before. I shall be solely responsible if any evidence is found against my declaration.

Date: April, 2025

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ABSTRACT

This dissertation is embedded with the theme of Opportunities and Challenges ofE-Governance in Nepal (A case study of Dhangadi Sub-metropolitan City. The study seeks to provide a comprehensive understanding of both the enablers and obstacles of e-governance in Dhangadi's municipal governance. The major objectives of this study are to examine the opportunities offered by e-governance to enhance the efficiency and effectiveness of municipal administration and staff in Dhangadi, analyze municipal employees' perceptions of challenges in implementing e-governance services, identify key barriers to its successful adoption, and explore strategies for improving its implementation.

Dhangadi was purposively selected as the study site for three reasons: it serves as the headquarters of the Far Western Province, functions as a migration hub for people from the upper hilly districts, and is the only sub-metropolitan city in the province. A quantitative-dominant descriptive research design (QUAN-qual) was employed to achieve the primary objectives of the study. Secondary data were also consulted, obtained from relevant published and unpublished sources, including books, articles, research reports, and materials accessed through internet searches and search engines. The nature of the data was predominantly quantitative, supplemented by qualitative insights. As a methodological cut-off point, this research considers empirical and policy developments from September 2015 (2072 B.S.), corresponding to the promulgation of Nepal's new constitution establishing a federal system, up to December 2024 (2081 B.S.), the period of data collection.

The study population comprised municipalities implementing e-governance services within Kailali District, with Dhangadi Sub-metropolitan City purposively selected as the sample. According to the official database, there are 157 municipal staff members across all wards. From this, a substantial sample of 130 staff members (82.8%) was selected through a simple

random sampling method, considered sufficient for the research purposes. A closed-ended, rapid questionnaire was the primary tool for data collection. To triangulate the findings through narrative inquiry, three key informant interviews (KIIs) were also conducted with senior authorities of Dhangadi Sub-metropolitan City.

E-governance in Nepal is still in its early stages, making it difficult to fully assess its impact on the general public. Most organizations have only implemented e-governance initiatives as pilot projects or as supplementary services rather than fully integrated systems. Although past efforts were made to introduce e-government practices, they remained largely theoretical and were not successfully executed in practice. Despite ICT being a priority at the policy level, its implementation at the local government level, particularly in municipalities, remains inadequate. The primary e-government service portal the municipal website—mainly provides static information rather than interactive online services.

The findings of this study suggest that e-government is still in its nascent stage in Nepal. At present, its broader impact on the general population remains limited, as most organizations are in the early phases of adopting e-government practices, often through pilot projects. Previous efforts toward e-government implementation were largely theoretical, with practical evaluations yielding limited success. Although ICT has been prioritized in national planning, its integration at the local government level—particularly within municipalities—has been insufficient. The primary platform for municipal e-government services, official websites, largely provide static information rather than interactive or transactional online services.

Survey findings indicate that most respondents use computers for official work (mean value: 3.6). Additionally, respondents expressed moderate satisfaction with computer maintenance and support (mean: 3.4), backup systems (mean: 3.3), and server usage for applications, file storage, and printing (mean: 3.2). Overall, e-government initiatives in Nepalese

municipalities are at a rudimentary stage and are limited to only a few organizations. However, recent steps, such as the e-government master plan aligned with IT Policy 2000, signal some progress. Despite this, change management practices remain below average, hindering effective implementation. Nevertheless, most respondents believe that e-governance can have a positive impact on Nepalese municipalities. Addressing the current challenges and expanding e-governance initiatives across all municipalities should be a top priority for the government.

Key Words: Governance, E-governance, Federalism, ICT, Service Delivery, Nepal

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CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

The Government of Nepal has outlined strategic priorities for the advancement of information and communication technology (ICT) in its 2015 National ICT Policy. These priorities encompass expanding broadband accessibility and fostering the growth of the e-commerce sector. Additionally, the National Cybersecurity Policy of 2016 emphasizes the increasing significance of ICT in diverse sectors, including health and education.

Governance refers to the administration of governmental processes, whether conducted by the state, market, or networks. E-governance, in particular, involves leveraging information technology (IT) to enhance governmental service delivery, facilitate information exchange, and promote communication and transactions. Through the adoption of e-governance, public services become more accessible, efficient, and transparent.

In an era of globalization, governance has become a central concern for both developed and developing nations. The rapid progress of ICT has introduced a transformative element to governance, giving rise to e-governance as an emerging paradigm. The adoption of ICT in governance is increasingly recognized as a crucial tool for development and the promotion of good governance across nations.

E-governance entails the utilization of ICT to streamline governance processes, improve service delivery, and reduce operational costs. It includes digital mechanisms for the electronic delivery of government services and communication between the government and citizens. Such mechanisms encompass information dissemination, digital voting, polling, and interactive discussions, fostering greater civic engagement in policy-making.

Nepal's current e-governance initiatives emphasize the need for citizen-centric governance, service-oriented administration, and enhanced transparency. These efforts are complemented by the digitalization of governmental departments, with ICT being acknowledged as a fundamental tool for achieving a paperless governance system. At the local level, municipalities serve as the primary point of interaction between the government and the public in service delivery. Despite the adoption of a new constitutional framework, local government institutions remain essential for facilitating public services.

The adoption of e-government in Nepalese municipalities remains in an early phase, with only a few institutions implementing digital governance initiatives. However, recent policy measures, including the e-government master plan aligned with the 2000 IT policy, indicate some progress. Nonetheless, challenges persist, particularly in change management practices and institutional adaptation to digital governance, which remain suboptimal. Despite these hurdles, there is a prevailing belief among stakeholders that fully realized e-government systems could yield positive outcomes for municipal governance in Nepal.

As a tool for modernizing governance, e-government enhances administrative efficiency, transparency, and service delivery through the strategic deployment of ICT. Public investment in ICT is recognized as a means to advance governance objectives by minimizing bureaucratic inefficiencies. A key motivation for adopting e-government is its potential to curb corruption by digitizing administrative processes, thereby reducing human intervention and limiting opportunities for corrupt practices. Many developing economies view e-government as a critical mechanism for ensuring citizen-centric, high-quality, and sustainable public services. However, for e-government initiatives to succeed, a robust ICT infrastructure and strong institutional commitment are essential.

E-government is broadly defined as the application of IT-based solutions to improve government operations, resource management, and inter-institutional collaboration. Its benefits include enhanced transparency, strengthened accountability, and improved service accessibility. A well-structured e-government strategy fosters efficient, transparent, and corruption-resistant governance. Given that corruption remains a major impediment to administrative innovation, e-government is increasingly recognized as an effective anti-corruption tool that fosters public trust in governmental institutions (Kim, Kim, & Lee, 2009).

Recognizing the transformative potential of ICT, the Government of Nepal has embraced e-governance as a long-term strategy for achieving a digital, paperless administration. Local government bodies remain at the forefront of public service delivery, continuing to serve as the primary interface between the government and citizens, even after constitutional restructuring (Sarikas, 2021). E-governance encompasses a broad spectrum of ICT-driven initiatives aimed at improving service efficiency and accessibility while minimizing operational costs (Subramaniam & Mia, 2018).

The integration of ICT into governance is reshaping public administration globally, enhancing service efficiency and fostering transparency. Nepal’s 2015 National ICT Policy identifies broadband expansion and e-commerce growth as key development priorities, reinforcing ICT's role in critical sectors such as healthcare and education. By enhancing governance efficiency and accountability, e-government minimizes bureaucratic inefficiencies while reducing administrative costs. E-government services are categorized into informational (government websites) and transactional (digital government-citizen interactions). Despite its advantages, challenges such as infrastructural deficiencies and implementation shortcomings remain prevalent.

Nepal's vision for a paperless government places local bodies at the forefront of service delivery. E-governance is also viewed as an anti-corruption measure, leveraging digital financial management and public information dissemination. However, citizen engagement and widespread adoption remain pivotal to the success of e-governance initiatives. Research indicates that e-governance can enhance transparency and contribute to economic growth, underscoring its role in contemporary governance reforms.

The 2015 Constitution of Nepal established municipalities as key actors in development and governance. Within this context, the study focused on established municipalities rather than newly formed ones, given that effective ICT implementation requires foundational infrastructure and resources that newer municipalities are still developing. Established municipalities provide a more comprehensive framework for analyzing e-governance initiatives. The study selected Dhangadi Sub-Metropolitan City as the primary research site, assessing the progress of e-governance implementation. Respondents included government officials, particularly senior administrators, who possess extensive experience and insights into Nepal's e-governance strategies. Their perspectives were instrumental in understanding current e-governance applications, strategic frameworks, and implementation challenges within local government institutions. By analyzing these viewpoints, the study aimed to present a comprehensive assessment of Nepal's municipal e-governance landscape, identifying both progress and areas for future improvement.

1.2 Statement of the Problem

Implementing reforms in public service delivery requires transitioning from a familiar environment to a largely unfamiliar one. In such cases, relying solely on general theories and principles is inadequate for achieving meaningful transformation (Sukla, 2015). Instead, customized strategies are necessary to address challenges such as power shortages, a lack of

IT-skilled personnel, and bureaucratic governance, all of which hinder the effective implementation of local e-governance services.

Governance encompasses all processes undertaken by the state, market, or networks, while e-governance involves the use of information technology (IT) to facilitate government services, communication, and transactions. By adopting e-governance, government services can become more accessible, efficient, and transparent for citizens.

Despite Nepal's police force being recognized for its competence, the government struggles to translate its potential into practical outcomes. As a result, government targets are frequently unmet, leading to ineffective policies and failed initiatives. The implementation of e-governance is hindered by several factors, including inadequate infrastructure, the digital divide, and a lack of leadership readiness, all of which impede the development of citizen-centered e-governance systems (Tofail et al., 2023). Additionally, frequent transfers of officials and poor coordination between government agencies—often influenced by political interests—further obstruct progress (Twizeyimana & Andersson, 2019). Although Nepal has established high-standard policies, their implementation remains a persistent challenge. The government's inability to effectively execute policies results in unmet objectives, making the overall policy framework appear ineffective. Therefore, strengthening infrastructure, ensuring political stability, and fostering consistent leadership are crucial for the successful implementation of e-governance in Nepal.

Public service reform requires navigating an unpredictable environment where traditional theories alone are insufficient. Addressing Nepal's local e-governance challenges demands a tailored approach that considers power shortages, the lack of IT-skilled professionals, and bureaucratic governance structures that hinder efficiency. Key barriers include poor infrastructure, the digital divide, and inadequate leadership readiness, making it difficult to

establish citizen-friendly e-governance systems. Furthermore, frequent transfers of government officials and lack of inter-agency coordination—often driven by political factors—further delay progress. Despite well-structured policies, their ineffective execution prevents the government from achieving its intended goals, highlighting the need for improved planning, execution, and accountability.

Research Questions:

- What opportunities does e-governance provide for municipal administration and staff in Dhangadi?
- How do municipal employees perceive the challenges of e-governance services in Dhangadi?
- How do the municipal executives/ authorities perceive about the existing and potential strategies for improving e-governance in Dhangadi's municipal governance?

1.3 Objective of Study

General objective of the study is to explore the opportunities and challenges of e-governancefor public services delivery from people's perspective. The specific objectives are as follows:

1. To examine the opportunities provided by e-governance in enhancing the efficiency and effectiveness of municipal administration and staff in Dhangadi.
2. To analyze the perceptions of municipal employees regarding the challenges associated with the implementation of e-governance services in Dhangadi.
3. To explore the perceptions of municipal executives about the existing and potential strategies for improving e-governance in Dhangadi's municipal governance.

1.4 Significance of Study

E-governance plays a crucial role in bridging the gap between citizens and the government by leveraging digital platforms to enhance service delivery. Compared to traditional bureaucratic processes, digital governance ensures faster, more reliable, and more accessible public services. Through single-window platforms, municipal employees and citizens can access government resources efficiently, eliminating delays associated with paper-based administration.

This study is particularly significant in the context of Nepal's municipal governance, as it explores both the opportunities and challenges of e-governance in Dhangadi. By analyzing the perceptions of municipal employees, the research provides valuable insights into the practical barriers hindering effective implementation, including infrastructure limitations, IT skill gaps, and bureaucratic inefficiencies. Additionally, the study contributes to policy discussions by offering recommendations to strengthen digital governance, improve coordination among government agencies, and ensure the successful adoption of e-governance.

Furthermore, the findings of this study will be beneficial for policymakers, municipal administrators, and technology stakeholders by highlighting strategies for enhancing transparency, efficiency, and responsiveness in public service delivery. By identifying key factors that influence the success of e-governance initiatives, this research supports the development of more inclusive and citizen-centric digital governance models in Nepal.

1.5 Limitations of the Study

Despite efforts to collect reliable and accurate data, this study has certain limitations. One major challenge is the research context in a developing country like Nepal, where

institutional accountability is often weak or non-existent. The availability of relevant information is limited, and even when accessible, its accuracy and verifiability remain questionable.

This research specifically focuses on the status and application of e-governance in Nepal, with Dhangadi Sub-Metropolitan City as the case study. However, obtaining information and communicating with key personnel proved challenging due to limited accessibility, delays in responses, or a complete lack of response in some instances. As a methodological cut-off point, this research considers empirical and policy developments from September 2015 (2072 B.S.), corresponding to the promulgation of Nepal's new constitution establishing a federal system, up to December 2024 (2081 B.S.), the period of data collection.

Furthermore, the study employed a purposive sampling method, selecting only Dhangadi Sub-Metropolitan City as the sample location. A total of 130 respondents were surveyed, which may not fully represent the broader municipal governance landscape in Nepal. Additionally, the study primarily relied on questionnaires for data collection, which may have inherent limitations in capturing in-depth qualitative insights.

Given these constraints, while the findings provide valuable insights into e-governance implementation in Dhangadi, their generalizability to other municipalities may be limited. Future studies could benefit from expanding the sample size, incorporating multiple case studies, and utilizing diverse data collection methods to enhance the robustness of the findings.

1.6 Organization of the Study

This research is structured into six chapters, first three general introductory chapters (introduction, review and methodology) and last three are the analytical ones (two of them

based in research objectives and final one as conclusion). Each of the chapters addresses different aspects of the study with relevant headings and subheadings.

Chapter One: Introduction: This chapter provides an overview of the study, including the background, statement of the problem, research objectives, significance, and limitations of the study.

Chapter Two: Literature Review: This chapter presents a comprehensive review of existing literature relevant to the research topic. It includes an analysis of books, journal articles, and previous dissertations to establish the theoretical foundation and identify research gaps.

Chapter Three: Research Methodology: This chapter outlines the research methodology, covering research design, nature and sources of data, population and sampling procedures, data collection tools and techniques, data analysis methods, study limitations, and reliability and validity considerations.

Chapter Four: Opportunities of E-Governance in Dhangadi: This chapter explores the various opportunities provided by e-governance in Dhangadhi, highlighting its benefits for municipal administration, service delivery, and citizen engagement.

Chapter Five: Challenges and Issues of E-Governance in Dhangadi Municipality: This chapter examines the key challenges and barriers to implementing e-governance in Dhangadi Municipality, including infrastructural limitations, administrative inefficiencies, and policy implementation issues.

Chapter Six: Summary and Conclusion: The final chapter presents a summary of key findings, conclusions drawn from the study, contributions to the field, practical recommendations, and suggestions for future research.

CHAPTER TWO
LITERATURE REVIEW

This chapter provides a comprehensive review of the literature on e-governance, examining previous research and key findings in the field. It serves as a framework for understanding and interpreting e-governance initiatives at the municipal level. By analyzing past studies, this chapter aims to identify trends, challenges, and opportunities in e-governance implementation, offering insights into its role in enhancing public service delivery.

2.1 Conceptual Review

Governance refers to the processes, structures, and mechanisms through which authority is exercised and decisions are made, implemented, and monitored in a society. It encompasses the roles of government, civil society, and the private sector in managing public resources, ensuring accountability, and promoting inclusive decision-making. Governance has different types and dimensions including global governance, good governance, democratic governance and regional governance, etc. Local governance**,** a subset of governance, pertains to the administration and management of public affairs at the subnational level, including municipalities, districts, and rural communities. It involves local governments, community organizations, and other stakeholders working together to address local needs, enhance service delivery, and foster participatory democracy. Effective local governance strengthens grassroots development, promotes citizen engagement, and ensures that policies and resources are tailored to local priorities.

E-governance refers to the integration of digital technologies into governance processes to enhance service delivery, improve efficiency, and promote transparency. It employs Information and Communication Technologies (ICTs), including web-based systems, to

facilitate interactions between government agencies and stakeholders such as citizens, businesses, and other institutions (Ahmad et al., 2013). The primary objective of e-governance is to meet public needs effectively, ensuring cost-efficient and timely service provision.

Governance, in its broader sense, entails the mechanisms, structures, and processes through which a state or organization is managed. It establishes the legal and administrative framework necessary for policy implementation and decision-making. Effective governance is characterized by impartial legal systems, independent judicial bodies, and law enforcement agencies free from corruption (Kim et al., 2009). Twizeyimana and Andersson (2019) emphasize that governance is not only about enforcing laws but also about fostering social cohesion and ensuring accountability in public administration.

E-government, as a subset of e-governance, specifically focuses on the application of digital technologies—such as the Internet, Wide Area Networks (WANs), and mobile computing—to improve interactions between government entities and stakeholders. These technological advancements enable better access to public services, increased transparency, and reduced bureaucratic inefficiencies (Adhikari, 2007). According to Torres et al. (2005), e-government facilitates the digitalization of administrative, legislative, and judicial functions, allowing for more effective service provision.

E-government has become a critical subject in public administration, emerging as a defining feature of modern governance. It facilitates the digital dissemination of public information and services and is classified into two primary types: information-based and transactional. While information-based e-government primarily involves the publication of government activities through digital platforms, transaction-oriented services facilitate interactive exchanges between the government and citizens, necessitating both vertical and horizontal

integration across public institutions. Transitioning from traditional governance to digital governance offers multiple benefits, including cost efficiency, improved administrative integration, reduced bureaucratic expenses, and enhanced adaptability to public needs. However, the implementation of transactional e-government services presents notable challenges, as evidenced by the high failure rates of such initiatives globally (Rodriguez et al., 2020).

The Organization for Economic Co-operation and Development (OECD, 2012) highlights that e-government is not merely about technological adoption but also about driving institutional efficiency, strengthening trust in governance, and supporting broad policy objectives. Similarly, Moon (2004) argues that governance extends beyond government institutions, encompassing the dynamic relationships between state agencies, private organizations, and civil society.

The evolution of e-governance is often described through transformation models. Gartner, a leading e-business consultancy, outlines a four-phase e-governance model: (1) information dissemination, where government services are made available online; (2) interactive communication, enabling citizen engagement through digital channels; (3) transactional services, integrating digital authentication and secure exchanges; and (4) seamless integration, where all government services are interconnected to provide a unified digital experience (Robert & Thierauf, 2018). This progression underscores the importance of digital governance in fostering efficiency, accessibility, and participatory democracy.

As governance structures evolve, scholars argue for greater collaboration between government institutions and non-governmental actors. Moon (2002) advocates for an inclusive governance model that leverages ICTs to facilitate participatory decision-making and build networks between government agencies, businesses, and citizens. Tan et al. (2005)

further assert that e-governance should be central to national ICT strategies, ensuring the long-term sustainability of digital government initiatives.

Ultimately, the vision of e-governance is to establish an interconnected, citizen-centric governance system that enhances public service accessibility, fosters transparency, and strengthens democratic engagement. By leveraging digital technologies, governments can improve accountability, streamline administrative processes, and promote inclusive governance (Pablo & Pan, 2002, cTan et al., 2005).

2.2 Theoretical Literature Review

The theoretical literature review emphasizes theory over practical application. A theoretical framework provides the structural foundation that supports and guides the research study's underlying concepts and principles.

Technological determinism and its theory suggests that media technology influences how individuals think, act, and how society operates as we transition through technological eras. Technology drives societal change by determining cultural values and social structure. In the era of the 4th Industrial Revolution, advancements like social media and ICT have significantly impacted communication and education. These technologies change how society interacts, with new media breaking communication barriers. While some face challenges adapting, many students embrace the interactive and collaborative nature of digital tools, indicating the transformative power of technology in education and societal behavior.

Hauer (2017) found that technological advancements directly influence society, requiring individuals to adapt to new innovations. However, some challenges arise from the improper use of technology rather than the technology itself. Social changes, including shifts in communication and media, are driven by technological progress. Individuals must

continuously innovate and prepare for these transformations to keep pace with evolving technology (Balaban-Sali, 2012).

In the era of the Fourth Industrial Revolution, technology has significantly influenced human activities, altering traditional processes. Social media, as a powerful communication tool, enables rapid information sharing without intermediary gatekeepers (Schwab, 2015). Technological advancements continue to drive societal transformations, with Information and Communication Technology (ICT) and media development playing a key role (Veblen, 2013). The widespread adoption of computers, networks, and the internet has reshaped communication, education, and everyday life.

Collaborative platforms allow users to modify content easily and communicate in real-time. Mobile devices provide broad internet access, enhancing digital learning. Online tools facilitate knowledge sharing, making education more interactive and accessible (Hussin, 2018). However, integrating ICT into education presents challenges. Some educators struggle with adopting new technologies due to fear of making mistakes, while campus staff may resist digital communication methods. Similarly, students from remote areas may find it difficult to adapt to digital learning environments (Mardiana & Daniels, 2018).

Technological Determinism suggests that media technology shapes how individuals think, feel, and act, as well as how society functions as it transitions through different technological eras (Tribal, Literate, Print, and Electronic) (Balaban-Sali, 2012). This reductionist theory argues that technological advancements follow an internal logic of efficiency, driving changes in social structures and cultural values (Mardiana & Daniels, 2018). Essentially, technology plays a crucial role in shaping society and human interactions.

Social media has transformed communication skills in reading, speaking, listening, and writing. This shift is particularly evident in academic settings, where digital platforms influence interactions. The present study aims to explore the effects of technological change on communication among campus members (Hussin, 2018).

Digital tools and online forums, such as social media, have become essential for modern learning, lowering access barriers and thriving in the Fourth Industrial Revolution. Students increasingly prefer interactive learning environments, embracing group discussions and unlimited access to new information. This shift signifies a move toward boundaryless education, where technology enhances engagement and knowledge acquisition.

2.3 Empirical Review in Global Context

Regarding e-government, behavioral intention, and corruption, scholars from various disciplines have explored corruption and the role of e-government in mitigating it. Corruption is viewed as having cultural and societal roots and hindering community welfare and social progress. E-government is perceived as a means to address corruption through transparency, accountability, and public engagement. Legal frameworks and their implementation also influence corruption levels (Heidenheimer & Johnston, 2011).

Empirical studies on e-government adoption often utilize conventional theoretical frameworks, such as the theory of planned behavior and the technology acceptance model. These studies aim to understand the variables influencing e-government adoption and user hesitancy. However, the specific challenges of e-government adoption warrant an e-government-specific conceptual framework. Adoption of e-government services varies by country and depends on citizens' behavioral intentions to incorporate new technologies into government structures (Ahmad et al., 2013).

E-government is expected to enhance citizens' engagement with the government, counteracting the decline in citizens' confidence in the government. Transparency is crucial for providing citizens with relevant information aligned with their expectations. Transparency in government involves understanding, assessing, and improving public service delivery continually. The application of ICT, coupled with social media integration capabilities, can enhance transparency in government sectors (Wikhamn & Hall, 2014).

Accountability is vital in determining people's engagement with institutions. Open data usage can monitor government entities' conduct, reducing extremism and corruption, thereby strengthening the accountability framework. E-government has been recognized as an effective channel for enhancing public service accountability and establishing citizen rights (Dubnick & Frederickson, 2014).

The evolution of internet technology has fostered new expectations for improved and quality service delivery. E-government encompasses the use of IT by government entities to transform interactions with citizens, businesses, and other governmental objectives. It is regarded as a potent tool for cost reduction, revenue enhancement, and public service improvement. Additionally, e-government aims to ensure governmental efficiency, accountability, transparency, and promote good governance (Sarikas, 2015).

The rapid rise of e-governance in government and public sectors reflects ongoing efforts to enhance service delivery, citizen participation, and governance through technology. The integration of digital platforms has streamlined operations, improving efficiency and accessibility. The internet and emerging media have played a pivotal role in transforming interactions between governments and citizens, fostering transparency and engagement. As digital advancements continue, e-governance remains a key driver of modernization, ensuring more responsive and effective public services (Alavi, 2017).

Accountability is crucial for public engagement with institutions. The UN provides financial assistance to underdeveloped countries, fostering accountability among their delegates. Open data helps monitor government conduct, reducing corruption and promoting transparency. Technological innovations, including ICT and social media, enhance government accountability. E-government facilitates more accessible and transparent services, fulfilling citizens' demands. Previous studies emphasize the importance of accountability frameworks in public administration. By integrating ICT and transparency initiatives, governments can improve service delivery, ensuring accountability to citizens. Public and private entities must make information accessible for effective governance and transparency (Navío-Marco, 2019).

E-government involves the use of Information and Communication Technologies to enhance administrative structures and procedures. It aids municipalities in functioning effectively and reshaping relationships with residents, businesses, and other governmental sectors. E-government optimizes web-based applications to facilitate communication between state entities and citizens, thus strengthening service delivery and security. With global concerns, e-government implementation has become widespread, promoting public engagement (Twizeyimana & Andersson, 2019).

Corruption, concealed in different departments, remains a widespread issue. E-government serves as a technological solution for combating corruption. Digital service delivery, accountability, transparency, and connectivity can bridge the gap between governments and citizens, contributing to corruption eradication (Han & Hong, 2019).

Research indicates a positive association between e-government implementation and corruption reduction. Effective governance structures, coupled with e-government initiatives, can eliminate corrupt practices and enhance government efficiency. E-government refers to the use of ICT by governments to enhance administration, transform services, and improve communication with citizens, businesses, and other sectors. It aims to optimize web-based

applications for efficient service delivery, security, and transparency. E-government fosters public engagement by promoting citizen interaction. Transparency, a key element of e-government, ensures accountability and effective service. A strong e-government system relies on transparency, engagement, and collaboration. The United Nations supports global implementation, with countries adopting e-government to strengthen relationships and improve government performance through increased openness and citizen participation (Wangrow, Kolev et al., 2019).

According to Burn and Robins e-governance refers to the utilization of information and communication technologies by the public sector to enhance information dissemination, service delivery, citizen participation in decision-making, and government accountability, transparency, and effectiveness (Burn & Robins, 2020).

Local governments, being close to citizens, play a pivotal role in governance. The proximity between citizens and local authorities fosters intertwined interests, especially regarding public services, urban development, education, public transport, environmental concerns, and local politics. The impact of Information and Communication Technologies (ICTs) on government-citizen relationships is most pronounced at the local level (Buckley, 2021).

Research has explored the relationship between E-government and governmental corruption, with many studies utilizing correlation analysis to demonstrate a strong connection between a country's use of E-government and its corruption levels. The evidence supports the idea that E-government can play a significant role in eradicating corruption. By streamlining government services, increasing transparency, and enhancing accountability, E-government helps reduce opportunities for corrupt activities. Furthermore, E-government allows for greater citizen engagement and access to information, making it easier to detect and address corruption. To eliminate corruption, institutions must be structured in a way that ensures transparency and accountability at all levels, gradually removing corrupt officials from the

system. By redesigning government structures and embracing technology, E-government can serve as a powerful tool for tackling corruption and fostering clean, efficient governance (Kolev &Wangrow, 2022).

Corruption, particularly bribery, is a widespread issue in developing countries, often linked to government incentives and approvals. Corruption manifests in three forms: petty, grand, and political. E-government offers a technological solution to combat corruption by enhancing accountability and transparency, eliminating middlemen, and fostering connectivity. Digital services, like online tax submissions, help reduce corruption and moral decay. E-government strengthens accountability mechanisms, holding representatives responsible for policy decisions and improving citizens' rights. It enhances government responsiveness, bridging the gap between citizens and authorities, making governance more transparent and accessible for all. (Mia & Subramaniam, 2023).

2.3 Empirical Review in Nepalese Context

2.3.1 Development of E-governance Initiatives in Nepal

The history of governance in Nepal has evolved through various political systems, from ancient monarchies to the present federal democratic republic. Nepal was historically governed by small principalities and kingdoms until King Prithvi Narayan Shah unified the nation in the 18th century, establishing a centralized monarchy. The Rana regime (1846–1951) introduced a hereditary autocracy, limiting the king's power and suppressing democratic development. The overthrow of the Ranas in 1951 marked the beginning of constitutional governance, but political instability persisted. The Panchayat system (1960–1990) reinforced monarchical rule, restricting multiparty democracy. The 1990 People’s Movement restored democracy, leading to a constitutional monarchy, but political unrest and the Maoist insurgency (1996–2006) resulted in the abolition of the monarchy. The

promulgation of the 2015 Constitution formally established Nepal as a federal democratic republic, decentralizing governance and strengthening local government institutions.

The adoption of digital technology in Nepal encounters considerable challenges, particularly due to limited technological proficiency among senior officials. Many high-ranking officers lack adequate computer skills and remain unaware of the advantages associated with digital governance. Additionally, resistance to change is widespread among civil servants accustomed to conventional administrative practices, as they perceive digital transformation as a potential disruption to established workflows and benefits (Adhikari, 2007).

Developing nations like Nepal face significant hurdles in assimilating and adapting global advancements in information and communication technologies (ICT). The rapid evolution of ICT necessitates continuous adaptation, yet technological and infrastructural constraints pose barriers to seamless implementation. In response, Nepal has initiated e-government reforms to enhance service delivery efficiency and minimize administrative costs (Sukla, 2015). The government introduced a comprehensive e-Governance Master Plan in 2006, aiming to modernize public services. However, successful execution remains a challenge due to bureaucratic resistance and the reluctance of senior officials to adopt digital practices (Adhikari, 2017).

Multiple stakeholders, including government agencies, non-governmental organizations (NGOs), and private sector entities, have contributed to the development of e-governance, particularly in urban municipalities and rural tele-centers. These initiatives seek to improve government transparency and facilitate public access to essential services. Nepal has implemented various strategic plans, such as the E-Governance Master Plan (2006), the Wireless Broadband Master Plan (2010), and the ICT in Education Master Plan (2013–2017). While these frameworks represent significant progress in digital governance, studies indicate

that implementation challenges persist, necessitating further policy refinements to enhance the effectiveness and sustainability of Nepal's e-governance initiatives (Shrestha, 2015).

2.3.2 Rural Urban Partnership Program and E-Governance

E-government has become a fundamental component of modern governance, aimed at delivering public information and digital services to citizens. It encompasses both informational and operational services, offering benefits such as cost reduction, system integration, administrative efficiency, and enhanced responsiveness to public needs. However, implementing transaction-based e-government solutions remains a challenge, as evidenced by high failure rates in global deployments (Rodriguez et al., 2020).

As a mechanism for fostering more effective governance, e-government is widely regarded as a tool for minimizing corruption and providing citizen-centric, sustainable services. Its successful implementation, however, necessitates robust ICT infrastructure and institutional commitment. E-government is broadly defined as the utilization of IT-based solutions to improve government functions and public service delivery while enhancing transparency and accountability. A well-structured e-government framework can significantly improve governance by promoting accountability, efficiency, and integrity in public administration (Kim & Kim, 2009).

The adoption of e-government relies not only on governmental commitment but also on citizens' willingness to engage with digital platforms. In developing nations such as Bangladesh and Pakistan, corruption remains a significant barrier to effective governance, as reflected in their rankings on global corruption indices. While extensive research in developed countries highlights e-government's role in promoting transparency and accountability, limited studies exist in developing contexts due to lower adoption rates of digital governance (Chandio et al., 2018).

Sustainable e-governance presents a viable means to combat corruption by increasing transparency and accountability in governmental processes. Digital financial management and procurement systems can minimize opportunities for misappropriation, while e-governance initiatives facilitate public access to information, fostering civic engagement and governmental oversight. Additionally, digital governance streamlines bureaucratic processes, expediting service delivery and mitigating corruption risks, particularly bribery. Overall, sustainable e-governance serves as a key instrument in reinforcing transparency, accountability, and citizen participation in governance structures (Akpan-Obong, 2022). In this context, Jameel et al. (2019) argue for a framework for democratic reforms by emphasizing the transformative role of e-government in fostering anti-corruption measures and economic development

Nepal has undertaken multiple e-government initiatives to modernize governance, involving government agencies, private entities, NGOs, and INGOs in their design and execution. The initial focus has been on local governments, particularly municipalities, where tele-centers have been established through collaborations between rural communities and local authorities. These centers have been integrated into local governance plans, aiming to disseminate government information via ICT while incorporating localized content into central platforms.

Transparency International Nepal (TIN) has developed an anti-corruption portal for the National Vigilance Center (NVC), offering public access to information on preventive measures and institutional efforts against corruption (20-60/61 B3). Meanwhile, the Local Self-Governance Act (1999) laid the foundation for decentralized governance, designating municipalities as responsible entities for delivering local services. However, many

municipalities continue to rely on conventional governance models, prioritizing physical infrastructure over participatory digital governance.

The Human Resource Development Center (HRDC) has conducted extensive training programs on topics such as social mobilization, leadership, gender inclusion, enterprise management, and ICT applications, benefiting over 69,000 participants, including local government officials and community members. Furthermore, partnerships with institutions such as the Agro Enterprise Center, UN Habitat, and the World Bank have facilitated the implementation of ICT-driven initiatives, including agricultural market information systems, B2B e-commerce platforms, tele-centers, and cybercafés. These efforts aim to reduce the digital divide, enhance communication between stakeholders, and promote equitable access to information, particularly benefiting marginalized communities (Adhikari, 2017).

2.3.3 E-Governance Projects in Nepal

The Rural Urban Partnership Programme (RUPP) has introduced innovative approaches to urban development, incorporating social mobilization, enterprise promotion, and ICT integration. Recognizing e-governance as a critical tool for improving governance efficiency, RUPP has played a pivotal role in piloting digital governance in Bharatpur Municipality, which has since served as a model for replication in other regions. Municipalities with access to internet service providers (ISPs) have demonstrated keen interest in e-governance, actively promoting digital literacy and community engagement initiatives.

RUPP introduced the concept of e-Governance as a crucial element of ICT to enhance good governance in partner municipalities. In collaboration with local organizations, RUPP developed and shared the e-Governance concept with local Chambers of Commerce and Industry (CCI), civil society organizations, community-based organizations (CBOs), and NGOs/INGOs operating within these municipalities. To facilitate public access to e-services,

the private sector expanded the network of cyber cafes to meet demand. Municipal e-governance initiatives were launched in coordination with the Ministry of Local Development, Government of Nepal.

Recognizing its significance, the then Prime Minister officially inaugurated e-Governance in Bharatpur municipality on January 10, 2001. To ensure support and buy-in for e-Governance, workshops were held with cyber cafe owners, NGOs, line agencies, and civil society organizations. A dedicated team was appointed to manage the Urban Information Center, reinforcing the municipality's commitment to e-Governance. In addition, the Human Resource Development Center (HRDC) played a key role in training and educating both municipal staff and the community on e-Governance practices. In 2003, the Prime Minister's official launch of e-Governance in Bharatpur, facilitated by RUPP, further supported municipal staff and community training in e-Governance (Shrestha, 2015).

According to the Ministry of Science and Technology's official website, the National Information Technology Center (NITC) has prioritized e-Government, Tele-Centers, and Data Banks. In partnership with the Korean International Cooperation Agency (KOICA) and the High-Level Commission on Information Technology (HLCIT), NITC has developed a national e-governance master plan. This plan outlines a clear vision, an architectural framework, necessary infrastructure, e-government policies, standards, and decision-making processes.

Tele-Centers are designed as remote workstations equipped with tools not commonly available in households, aimed at bridging the digital divide. These centers provide underserved communities with modern information technology services like internet access, email, fax, photocopying, and scanning to support their development. The objectives include maximizing ICT use, providing rural communities with internet access, promoting a

knowledge-based society, and offering information related to agriculture, telemedicine, education, and employment opportunities.

Currently, 43 Tele-Centers are operating across the country, managed by NITC, HLCIT, or supported by organizations like KOICA and UNDP. These centers play a crucial role in developing the infrastructure needed for the success of e-government initiatives.

A Data Bank is a centralized repository containing regularly updated government information, which is accessible to various stakeholders under established rules and regulations. NITC's National Data Bank project aims to gather and disseminate all government data for public and governmental use. It targets a wide range of users, including government departments, private entities working with the government, small and medium-sized industries, research groups, and individuals.

In terms of e-government development, a significant milestone was reached in 2005 with the establishment of e-government master plans. Created with assistance from the Korean IT Industry Promotion Agency (KIPA), these plans set a vision for Nepal's e-government, focusing on citizen-centered services, transparent governance, interconnected government systems, and a knowledge-based society. The mission emphasizes improving citizens' lives equitably, reducing regional disparities, and fostering socio-economic growth through transparent governance and ICT-enhanced services.

The master plan identified eight key projects: government groupware systems, a national government portal, a national identification system, e-education initiatives, communication infrastructure, enterprise architectures, Public Key Infrastructure (PKI), and integrated data centers. These projects were carefully selected to promote central government

computerization, infrastructure development, content creation, and education, which are crucial for bridging the digital divide.

The e-government master plan is a long-term initiative, requiring more than ten years for full implementation. Due to the rapid evolution of ICT, the plan will be regularly updated to keep pace with new developments. The initial implementation period was from 2007 to 2011, with provisions for adjustments to accommodate emerging trends.

Additionally, the Electronic Transactions Act of 2006 aims to secure the integrity and reliability of electronic transactions, prohibiting unauthorized use or alteration of electronic records. It also addresses concerns about the electronic distribution of materials that may breach existing laws or promote harmful content.

Furthermore, research has demonstrated that e-government can significantly reduce corruption by enhancing transparency, accountability, and public behavior. In countries like Bangladesh and Pakistan, e-government initiatives have proven effective in decreasing corruption. Quantitative studies have shown that such initiatives increase transparency and accountability, contributing to reduced corruption. These findings highlight e-government's potential to promote good governance and drive socio-economic development.

The introduction of e-Governance in Nepal was facilitated by the Financial Management Project (FMP) and the Rural-Urban Partnership Program (RUPP). FMP, a joint initiative by DFID and the Government of Nepal, helped improve financial management and transparency. Bharatpur Municipality was the first to implement e-Governance with the support of RUPP and UNDP, and its success led RUPP to assist other municipalities in adopting similar models. Through RUPP, 12 municipalities developed e-Governance portals and established Urban Information Centers, training personnel to operate them. RUPP also

set up a Human Resource Development Center to provide training on governance and poverty reduction. Despite these advances, challenges like inadequate infrastructure, low IT literacy, and political instability continue to hinder progress. The Economic and National Development Report (ENRD) highlights key success factors for e-Government, including starting with small projects, raising awareness, engaging leadership, ensuring security, and creating a supportive environment with adequate resources, training, and coordination (Shrestha, 2015).

2.3.4 Evolution of ICT Policies of Nepal

Nepal has witnessed gradual advancements in the fields of ICT and e-governance since the introduction of its first Information Technology Policy in 2000. Nonetheless, the pace of development was significantly affected by political instability, especially during the Maoist insurgency, which caused widespread infrastructure damage and impeded overall development efforts (Lawoti, 2003). The economic impact was also substantial, as evidenced by a decline in Nepal's real GDP growth rate from 6.44% in 1990–91 to 4.9% in 2000–01 (Upreti, 2006). Furthermore, the centralized governance structure contributed to the marginalization of several regions and minority communities.

Although the 2000 IT policy marked a formal initiation of ICT sector development, earlier efforts — including the National Communication Policy of 1992 and the Telecommunication Act of 1997 (Chapagain, 2006; "Nepal Telecommunication Act," n.d.) — laid important groundwork. Despite facing considerable obstacles, Nepal continued to refine its ICT policies, culminating in a more integrated and comprehensive framework introduced in 2015 (International Development Centre, 2003; Shields, 2009).

2.3.5 Institutional and Legal Framework of IT in Government

The High Level Commission on Information Technology (HLCTT), led by the Right Honorable Prime Minister of Nepal, plays a pivotal role in shaping the country's ICT sector. Its primary objective is to provide strategic guidance and formulate policies to address key developmental challenges, drive economic growth, and reduce poverty. The HLCTT is central to all ICT initiatives, considering their developmental and policy implications.

The commission's core mission is to oversee the implementation of the National ICT Policy and strategy, offering strategic direction and support to the government in building a knowledge-based society. This includes fostering an environment conducive to the growth of knowledge-driven industries and institutions, as well as developing policies to adapt to the rapidly evolving ICT landscape. Additionally, the commission aims to leverage ICT for development, economic advancement, and poverty alleviation.

Efforts have been made to introduce cyber laws, and a dedicated office has been established to regulate digital transactions and documents. While some government sectors have adopted IT applications, their implementation remains limited, with a need for wider adoption across government functions. The Ministry of Science and Technology (MOST) has taken steps to improve connectivity by installing VSAT for internet access and creating a government network linking various ministries and departments. This network is set to expand into rural areas, ultimately reaching the Village Development Committee level.

E-Government initiatives, such as the Financial Management Project (FMP) and the Rural-Urban Partnership Program (RUPP), have been crucial in promoting e-Governance in Nepal. FMP, a joint project of DFID and HMG/N, has significantly improved financial management, transparency, and budget processes in Nepal, yielding positive macroeconomic results. Bharatpur Municipality became the first municipality to implement e-Governance with

support from RUPP/UNDP. Following Bharatpur's success, RUPP assisted other municipalities in adopting similar e-Governance models. Many municipalities, particularly those with access to ISPs, showed strong interest in e-Governance, and through RUPP's community mobilization efforts, they developed e-Governance portals. RUPP also helped establish Urban Information Centers with trained staff in all 12 partner municipalities, supporting the municipalities' commitment to e-Governance. Furthermore, RUPP set up a Human Resource Development Center (HRDC) to strengthen training on good governance and poverty alleviation.

Despite these efforts, there are several obstacles to IT implementation in Nepal's government, including inadequate infrastructure, low IT literacy, lack of coordination, limited training, insufficient IT funds, and political instability. To overcome these challenges, ENRD suggests several success factors for e-Government, such as starting with small, manageable projects, raising awareness, encouraging departmental support, involving leadership, ensuring security, and focusing on telecommunications infrastructure, e-readiness, and budget resources. These steps will help build a supportive atmosphere for e-business and ICT development in Nepal. Similarly, the High Level Commission on Information Technology should continue to guide ICT development and policy formulation to promote economic growth and poverty reduction, with a focus on expanding government ICT usage and connectivity to rural areas (Shrestha, 2015).

2.3.6 Prioritized ICT area by NITC

The government of Nepal prioritized the growth of the IT sector by introducing the IT Policy, 2000, with the goal of laying the foundation for national economic development and improving living standards over the next five years, starting in 2000. The policy aimed to leverage IT as a catalyst for rapid advancement in various sectors, including education,

health, agriculture, tourism, and trade. It also sought to address the challenges posed by Nepal's geographically diverse and unevenly distributed population. The broader vision was to position Nepal as a significant player in the global ICT landscape within five years.

In accordance with the IT Policy, 2000, the government took on roles as a promoter, facilitator, and regulator of the IT industry, adopting a unified approach to its development. The establishment of the National Information Technology Development Council, chaired by the Prime Minister and comprising various ministers, played a key role in formulating national IT policies. Other institutions, such as the National Information Technology Coordination Committee, which focused on IT research and human resource development, and the National Information Technology Centre under the Ministry of Science and Technology, were also established to promote information access nationwide.

Key initiatives in the policy included improving administrative efficiency through digitalization, ensuring transparent governance by implementing websites and internet connectivity, and supporting the promotion of Nepali culture, arts, and rural development through the creation of online content. Special focus was placed on the development of underserved areas through initiatives like e-commerce, e-education, and e-health. Ensuring that government officials had access to the internet, personal computers, and digitalized administrative systems was also a critical part of these efforts.

Several action plans were introduced to sustain and promote IT development, such as incorporating computer education in middle schools, providing universities with computer facilities to train experts, and offering support for both domestic and international IT education and training. Efforts were also made to create an environment that encouraged the retention of IT professionals within Nepal and facilitated the accumulation of knowledge and experience.

The National Information Technology Center (NITC), in collaboration with KOICA and the High-Level Commission on Information Technology (HLCIT), focused on e-Government, Tele-Centers, and Databanks. NITC developed a national e-governance master plan outlining its vision, architecture, and policies. The Tele-Center initiative was designed to address the digital divide by providing rural communities with access to modern ICT services. With 43 centers across Nepal, these facilities support ICT usage, internet access, and overall development. Additionally, the National Data Bank project aims to centralize government data, making it accessible to both the public and government, thereby fostering research and development (NITC, 2008).

2.3.7 Municipal E-Governance

Aligned with its commitment to promoting good governance, supported by RUPP, municipalities have adopted a participatory approach to municipal planning. In this model, every member of the Tole Lane Organization (TLO), a community-based organization, is involved in the formulation, implementation, and monitoring of development plans. This inclusive approach has led to greater community engagement and consensus in municipal development. Furthermore, RUPP has set up well-maintained Urban Information Centers (UICs), which act as both municipal data repositories and citizen information hubs, enhancing transparency. Municipalities also ensure financial transparency by regularly disclosing their annual financial transactions to the public.

In addressing equity concerns, municipalities have prioritized gender as a cross-cutting issue, incorporating gender-friendly policies and strategies into their planning. Additionally, Entrepreneurship Development Programs have empowered marginalized groups and the urban poor. With RUPP's technical assistance, municipalities have developed citizen charters to improve accountability, uphold the rule of law, and enhance the efficiency of municipal

administration and policies. These efforts align with the principles of good urban governance, which stress the importance of collaboration among the public sector, private sector, and civil society. The strong partnership between the private sector and civil society is evident in the municipality's operational procedures.

Municipalities are also fully compliant with their citizen charters, demonstrating their commitment to good governance. Recognizing the transformative role of ICTs in governance, RUPP has promoted the integration of e-governance into its initiatives. E-governance is seen as a tool to improve the efficiency, transparency, and effectiveness of government operations, empower citizens through better access to information, and allow for direct participation in planning and decision-making processes, free from discrimination.

Through RUPP's support, municipalities have embraced participatory planning, allowing community-based Tole/Lane Organizations (TLOs) to engage in development efforts. This approach has strengthened citizen involvement and consensus in municipal planning. To further enhance transparency, RUPP has established Urban Information Centers (UICs), which serve as municipal data banks and citizen information hubs. Municipalities ensure financial transparency by making their annual financial transactions public and adopting gender-inclusive policies to promote equity.

Entrepreneurship Development Programs have supported underprivileged groups and the urban poor, while citizen charters, developed with RUPP's technical support, have increased accountability and improved municipal governance efficiency. The strong partnerships between municipalities, the private sector, and civil society reinforce the principles of good governance. Recognizing the potential of ICTs, RUPP has promoted e-governance to improve efficiency, transparency, and public participation. By leveraging digital tools,

municipalities are improving service delivery, empowering citizens, and fostering inclusive decision-making (Han & Hong, 2019).

2.4 Research Gaps

Twizeyimana and Andersson (2019) highlighted that E-government involves the use of Information and Communication Technologies (ICT) by the government, combined with institutional reforms, to improve administrative structures and processes. E-government is believed to enhance municipal operations and transform relationships with citizens, businesses, and other sectors. Bokhari and Myeong (2022) emphasized the role of transparency in E-government, noting that it provides essential information that aligns with citizens' expectations, promoting public engagement and reducing conflicts. Wikhamn and Hall (2014) found that integrating ICT and social media can enhance transparency in the public sector. Dubnick and Frederickson (2014) discussed accountability mechanisms, highlighting how governments and institutions ensure representatives are accountable in policy formulation. Wangrow et al. (2019) explored the connection between E-government implementation and corruption reduction, suggesting a strong relationship between the use of E-government and lower corruption levels.

From the review of literatures, it is found that no empirical research of this type is conducted before. No such research paper has found which are primarily focused to find out application status of e-governance and effect of E-governance.

There are some articles written in the field of e-government in Nepalese national publications however most of them are conceptual and theoretical papers reflecting the view of the authors based on the existing theory, which are far from the ground reality of the Nepalese public sector organizations. Even though several attempts has made by municipalities and ministries to established e-government services particularly with the help of funding of donor

organizations, however those attempts has not consistent and most of them have ended their impact on completion of the projects. No empirical research work has found which have been used to evaluate the e-government initiatives.

Hence researcher found a gap in the Nepalese research field to find out application status of e-governance at Dhangadi Sub-metropolitan city and effect of E-governance for public services delivery. An attempt has made to fill the gap.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Research Philosophy and Study Design

This study followed a positivist paradigm predominantly and employed a quantitative research method to examine e-Governance issues. The positivist approach emphasizes objectivity, measurement, and empirical analysis, ensuring systematic data collection and interpretation. By utilizing structured questionnaires and statistical tools, the study aimed to quantify the challenges and opportunities associated with e-Governance implementation. The quantitative method facilitated the identification of patterns, relationships, and trends within the data, providing a comprehensive understanding of e-Governance dynamics. This approach ensured reliability, validity, and generalizability, making the findings applicable to broader policy and governance frameworks.

Positivist paradigm is one of the research approach which relies on measurement as well as reason to established cause and effects relationships in natural world. It relies on measurement and reason that knowledge is revealed from neutral and measurable. Descriptive research design was used in order to achieve the basic objective of the study. Descriptive research design was used to describe the application status of e-governance at Dhangadi Sub-metropolitan city and to analyze the effect of E-governance for public services delivery. Scaling and measurement tools were used under quantitative method. The study also employed a constructivist approach as a supplementary framework to enrich the understanding of participants' experiences and perceptions. This approach aligns with a subjective ontology, recognizing that reality is socially constructed through individual and collective meanings. By integrating constructivist principles, the study captured deeper insights beyond the quantitative data.

3.2 Nature and Sources of Data

In this study, primary data was used to fulfil the objectives. Primary data are collected from a field survey using a structured questionnaire (quantitative) and some open-ended questions (qualitative). Secondary data was been obtained from related published and unpublished literature such as books, articles, research and thesis reports from ministries departments searching from the internet etc.

The nature of the data was quantitative in most cases and few of it was triangulated by qualitative data. Major sources of the literatures reviewed was downloaded from websites and particularly. Websites of ministries of Nepal government, National Planning Commission and Municipalities and the Central Bureau of Statistics were reviewed to collect secondary information.

A rapid questionnaire survey by the researcher at the concerned office was conducted to collect the primary data with structured questionnaires. An open-ended questionnaire has been employed for key informant interviews (KIIs). Offices of primary data sources were municipalities within theDhangadi Sub-metropolitan city. The scale of measurement is ordinal and nominal type qualitative data. Both qualitative and quantitative data were collected.

3.3 Rationality of Study Site Selection

The study area for this research was Dhangadi Sub-metropolitan City ofKailali District. This study site was selected on the basis of a purposive sampling method (see GIS Map below). Dhangadi was purposively selected as the study site for three reasons: it serves as the headquarters of the Far Western Province, functions as a migration hub for people from the upper hilly districts, and is the only sub-metropolitan city in the province. It lies in the Far-West province of Nepal. Dhangadi is divided into 19 wards. It has an area of 271.74 Sq. KM.

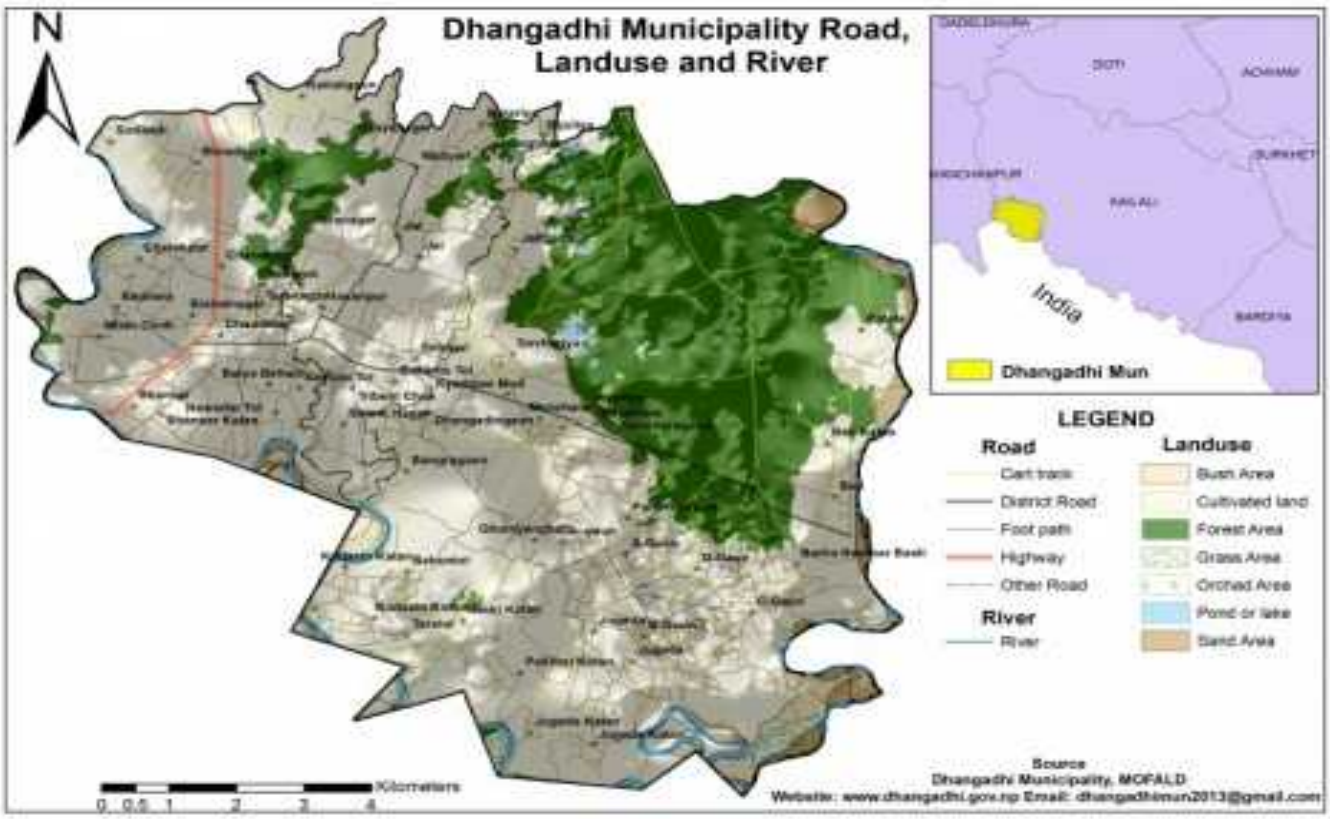
Dhangadi shares its borders with India to the south, Godawari and Gauriganga Municipality to the north, Kailari Rural Municipality to the east, and Kanchanpur District to the west. Strategically located along the Mahakali Highway, it lies approximately 750 kilometers west of Kathmandu. As of the 2021 Nepal Census, the city had a population of 198,792, making it the most densely populated urban center in the province. Initially established as a municipality in 1976, Dhangadi was upgraded to a sub-metropolitan city on September 18, 2015, following the merger of Fulbari and Urma village development committees, along with wards 9 and 11 of the former Attariya Municipality.

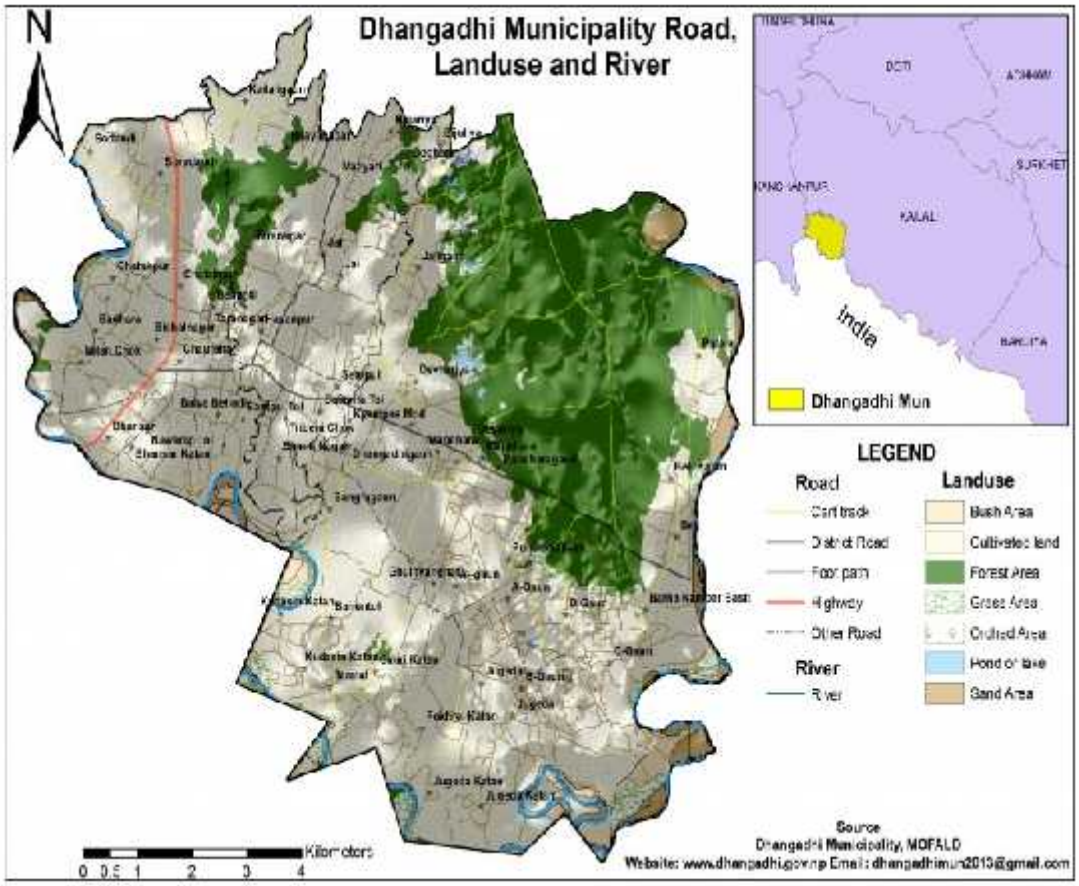
3.4 Population, Sample and Sampling Procedur

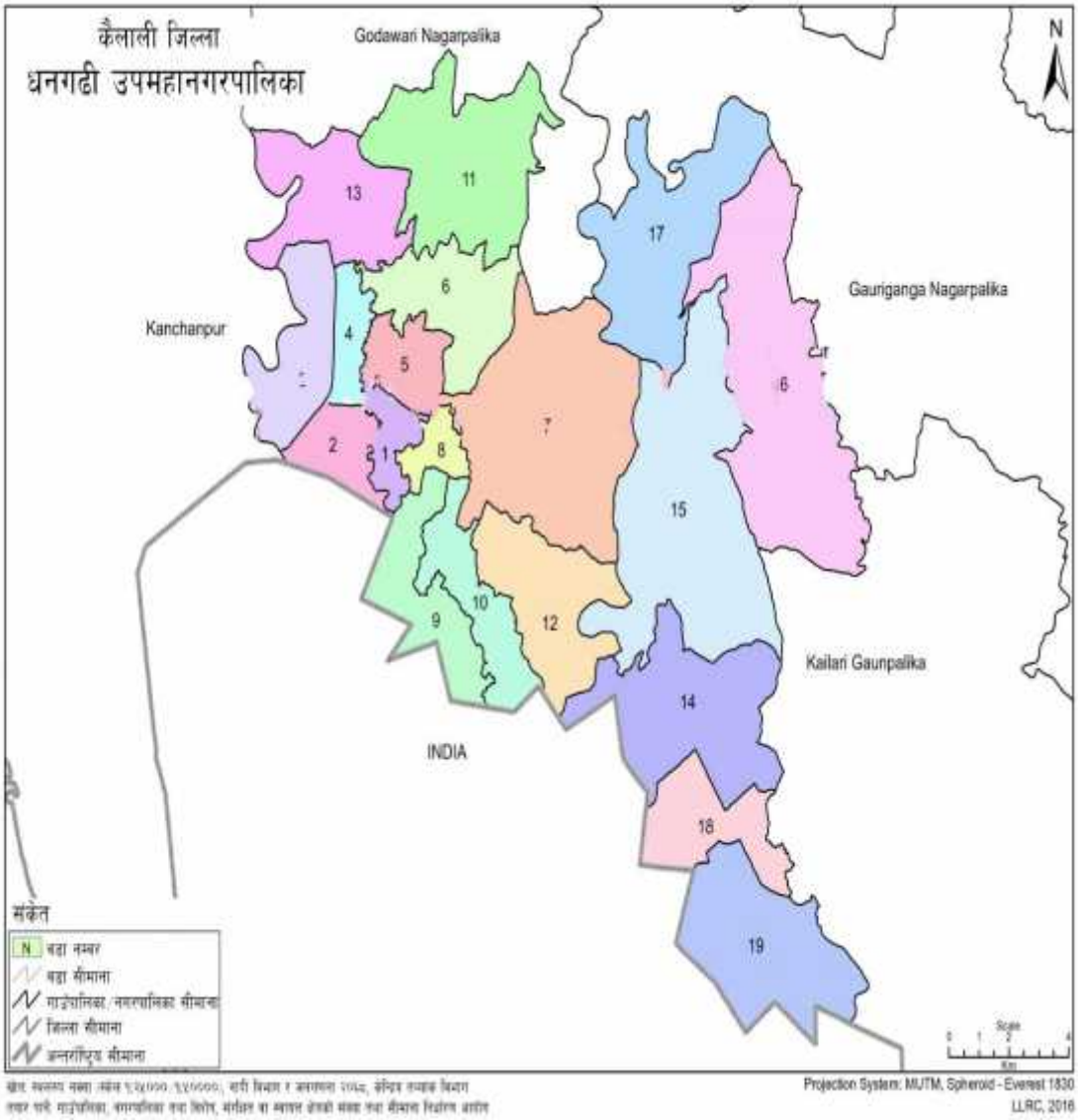
As the official database reveal, there are 157 municipal staffs including in all wards. Out of them, a vast majority i.e. 130 samples (82.8%) were selected for the survey in the present study on the basis of simple random sampling method. It is believed that 130 sample is sufficient for purpose of the present research.

The respondents were all selected from government offices and are currently employed by the government. The majority of the officers chosen were senior in their positions and had some knowledge of e-Government, allowing them to provide more informed and strategic responses that reflect the organization's views and plans. The ages of the respondents ranged from 29 to 56 years, with the majority being in their 40s. Eighty-five percent of the respondents were male, while fifteen percent were female.

Map 3.1: GIS Map of Study Area (Dhangadi)




N
Dhangadhi Municipality Road, Landuse and River
DOTI
SURKHET
KAILALI
India
Dhangadhi Mun
LEGEND
Road
Cart track
District Road
Foot path
Highway
Other Road
River
River
Landuse
Bush Area
Cultivated land
Forest Area
Grass Area
Orchard Area
Pond or lake
Sand Area
Kilometers
0 0.5 1 2 3 4
Source
Dhangadhi Municipality, MOFALD
Website: www.dhangadhi.gov.np Email : dhangadhimun2013@gmail.com



3.5 Questionnaire as a Tool of Data Collection

The close-ended questionnaire is prepared for the quantitative tool for the collection of primary data in the study area. The respondents of the particular area were requested to fill up the questionnaires (See in the Appendix- I) about their perceptions regarding opportunities and challenges of e-governance. They were helped by the researchers to fill up the answers. If they couldn't fill up, the researcher filled them based on the responses given by respondents. For the interviews, the researcher has adopted open ended questions to the respondents to reflect their perceptions and experiences (See in the Appendix- II).

3.6 Data Collection Process

The data collection process involved both primary and secondary data sources. For primary data, the researcher personally visited the field in Dhangadi Municipality. The researcher conducted interviews with senior municipal officers and distributed questionnaires to gather responses, ensuring that the information collected was as reliable as possible. To improve the quality of responses, the researcher interacted directly with the respondents, clearly explaining the research objectives and providing context about e-government.

As a methodological cut-off point, this research considers empirical and policy developments from September 2015 (2072 B.S.), corresponding to the promulgation of Nepal's new constitution establishing a federal system, up to December 2024 (2081 B.S.), the period of data collection. The survey was conducted during the second and third weeks of December 2024, while the key informant interviews were carried out in the third and fourth weeks of January 2025.

The primary data collection was conducted using a structured questionnaire that included Likert scale statements. These Likert scales are a psychometric response scale that measures participants' preferences or degree of agreement with a set of statements. Likert scales are non-comparative and unidimensional, focusing on a single attribute or dimension. This approach allows for the capture of attitudes or opinions in a quantifiable manner. The scoring procedure for the Likert scale used in the questionnaire was outlined in the Table 3.1. Respondents were provided to indicate their level of agreement with given statement by the way of an ordinal scale.

The secondary data were collected through relevant documents, reports, and publications from the municipality, which helped provide additional context and background information

on the study area. This combined approach of primary and secondary data collection ensured a comprehensive analysis of the subject matter.

Table 3.1

Likert scales Measurement

S. N	Meaning of rating	For positive statement (Score)	For Negative statement (Score)
1	Highly Agree	5	1
2	Agree	4	2
3	Moderate Agree	3	3
4	Somehow Agree	2	4
5	Not at all	1	5

3.7 Data Analysis Tools and Techniques

The data analysis process commenced immediately after the raw data were collected through structured questionnaires and key informant interviews. Following standard procedures, the data underwent systematic editing, coding, classification, and tabulation to prepare it for meaningful interpretation, as outlined by Kothari (2004). Descriptive statistical techniques were employed, including frequency analysis and the use of descriptive diagrams, to highlight key factors influencing e-governance opportunities, challenges, and implementation strategies. To ensure the accuracy and robustness of the quantitative analysis, the Statistical Package for the Social Sciences (SPSS) was used for data processing and computation. SPSS facilitated the organization, visualization, and basic statistical interpretation of the data, enhancing the study's analytical rigor.

For qualitative data derived from interviews, a manual coding process was applied. Themes and patterns emerging from participants' narratives were identified and analyzed through content analysis, allowing for a deeper understanding of contextual and experiential dimensions related to e-governance practices. This qualitative component complemented the quantitative findings, offering a more comprehensive perspective on the strategic effectiveness of e-governance initiatives within Dhangadi Sub-metropolitan City. By integrating both quantitative and qualitative approaches, the study strengthened the validity and richness of its conclusions.

3.8 Trustworthiness, Reliability and Validity of the Data

Conducting a study of this nature required a systematic approach aimed at minimizing bias and strengthening reliability. Centered on the opportunities and challenges of e-governance in Nepal, with a particular focus on Dhangadi Sub-metropolitan City, the research ensured the validity and reliability of its instruments through an extensive review of existing literature. Guidance from a research supervisor and consultations with subject experts contributed to reinforcing the study’s rigor. To enhance reliability, credibility, and plausibility, triangulation was employed by utilizing multiple data sources, methods, investigators, and theoretical perspectives. Information collected from diverse sources was cross-validated to establish trustworthiness. Data regarding the status of e-governance implementation were gathered and discussed with the supervisor and peers to confirm the plausibility of the findings prior to finalizing the research design. Additionally, transparency was maintained throughout the research process to further improve the reliability and validity of both data and analysis. Ethical standards were strictly adhered to, particularly in the impartial selection of sources and fair data interpretation during the primary research phase.

CHAPTER FOUR

OPPORTUNITIES OF E-GOVERNANCE IN DHANGADI SUB-METROPOLITAN CITY

This chapter focuses on the presentation and interpretation of data. Collected primary data from field survey have been organized into tables, and thorough analysis has been conducted. Chapter provides an in-depth examination of the current state of e-government by reviewing relevant documents, surveys, and interviews. A key aspect of this analysis is evaluation of municipal websites, which serve as the primary portals for e-government services. These websites were assessed based on indicators and variables identified in the literature review. Additionally, correlations between important variables have been identified and discussed.

4.1 Opportunities created with the Application of E-governance Tools

As we are aware, e-government services are primarily delivered through the internet or intranet websites, making government websites the primary channel for e-government service delivery. The quality of these websites plays a crucial role in determining the effectiveness of the services offered by public organizations. In this context, the quality of two different websites has been evaluated based on various variables that measure the quality of public websites. These variables include the availability of online services and databases, the presence of audio and video clips, the timeliness of information updates, user-friendliness, visual appeal, the provision of FAQs, downloadable forms, security features, credit card facilities, incentives for service usage, accessibility for individuals with disabilities, website personalization options, job application features, job announcements, and the availability of digital signatures for transactions, among others.

Table 4.1

ICT Infrastructure Available to Support E-Governance in Dhangadi

ICT Infrastructure	Level of Extent						
	1= Not at all	**2= Somehow Agree**	**3= Moderate Agree**	**4= Agree**	**5= Highly Agree**	**Total Value**	**Mean**
Availability of computers for municipal operations.	-	-	70	30	30	480	3.6
Regular maintenance and technical support for computer systems.	-	-	75	55	-	445	3.4
Backup system in place to ensure data security and recovery.	-	30	30	70	-	430	3.3
Implementation of application servers, file servers, and printer servers for efficient digital operations.	-	-	95	35	-	320	3.2

Source: Field Survey, 2024/25

Based on the data presented, an analysis of the ICT infrastructure available to support e-governance can be made. The responses indicate varying levels of agreement on the availability and quality of ICT infrastructure. All the above discussion and collated facts give the clear glimpse of ICT infrastructure available to support e-governance. Statement about computer available which is significant 70 respondents mentioned moderate agree. 30

respondents Agree and 30 respondents mention Highly Agree. Mean value 3.6 indicated that most of the respondents are used computer in their official work. It means respondent responses are positive with this statement. Regarding the statement about computer maintained and supported, 75 respondents mentioned moderate agree and 55 respondents Agree. Mean value 3.4 indicated that most of the respondents are satisfy with computer maintained and supported. It means respondent responses are positive with this statement. Statement about computer backup system, 30 respondents mentioned Somehow agree, 30 moderate agree and 70 respondents Agree. Mean value 3.3 indicated that most of the respondents satisfy with computer backup system, it means respondent responses are positive with this statement. Regarding the statement about server as application server/file server and or printer server, 95 respondents mentioned moderate agree and 35 respondents Agree. Mean value 3.2 indicated that most of the respondents view about server as application server/file server and or printer server. It means respondent responses are positive with this statement.

Computer Availability (Mean = 3.6): The highest mean score of 3.6 suggests that computers are generally available and used at a moderate to high level within the studied context. This indicates that most respondents agree that the availability of computers supports e-governance initiatives. Computer Maintenance and Support (Mean = 3.4): With a mean score of 3.4, this item indicates that a majority of respondents agree that computers are adequately maintained and supported, though there may still be room for improvement. Computer Backup System (Mean = 3.3): The mean score of 3.3 shows moderate agreement regarding the availability of a reliable computer backup system. While this is positive, it suggests that some challenges remain in terms of ensuring comprehensive backup solutions for e-governance operations. Server as Application/ File Server or Printer Server (Mean = 3.2): This lower mean score (3.2) suggests that the presence of servers used for applications, files,

or printers is moderately available, but could potentially be a limiting factor in supporting e-governance infrastructure effectively.

Overall, while the ICT infrastructure is generally in place, some areas, such as backup systems and servers, may require further attention and improvement to fully support the goals of e-governance.

4.2 Opportunities explored with the Official Websites and Email

The status of official websites and email services is a key indicator of the effectiveness of e-governance implementation in any government or organization. These platforms serve as the primary digital interface between the government and the public, enabling efficient service delivery, communication, and transparency. Municipality has official email in "gov.np" domain, Municipality has official websites and Key feature of new websites : Content Management System, document archival and instant search, uniform domain names, hosted in Nepal Government Data center, ownership of data, control and access to respective organization themselves are importance points in Status of Official websites and email.

Official websites play a crucial role in providing government-related information, services, and updates. However, in many developing regions, including Nepal, the status of these websites is often underdeveloped, with several challenges. Government and municipal offices rely on official email communication for internal and external correspondence. The status of official websites and email services in e-governance remains underdeveloped in many municipalities. While some progress has been made, such as launching e-government portals, the functionality, security, and user experience still need significant improvement. Strengthening these digital infrastructures will be crucial in enhancing transparency, efficiency, and citizen engagement in governance.

Table 4.2

Status of Official Websites and Email in fostering e-Governance

Official websites and email	1= Not at all	2= Somehow agree	3= Moderate agree	4= Agree	5= Highly Agree	Total Value	Mean
The municipality operates an official email system under the **"gov.np"** domain.	-	-	-	-	130	650	5
It maintains official websites for public communication and services.	-	-	-	-	130	650	5
Main Features of the New Website	25	25	50	30	-	345	2.6

Source: Field Survey, 2024/25

The table 4.2 indicates the status of official websites and email. The provided data evaluates the status of official websites and email services in municipalities based on survey responses. The analysis considers the mean values to assess adoption levels and key features of new websites. Out of 130 respondents, statement about municipality has official email in "gov.np" domain that is significant 130 respondents mentioned Highly Agree. Mean value 5 indicated that all of the respondents mentioned municipality has official email in "gov.np" domain. It means respondent responses are very much positive with this statement.

Regarding the statement about municipality has official websites, 130 respondents mentioned Highly Agree. Mean value 5 indicated that all of the respondents mentioned municipality has official websites. It means respondent responses are very positive with this statement.

Statement about key feature of new websites: Content Management System, document archival and instant search, uniform domain names, hosted in Nepal Government Data center, ownership of data, control and access to respective organization themselves, 25 respondents mentioned Not at all, 25 respondents mentioned Somehow agree, 50 moderate agree and 30 respondents Agree. Mean value 2.6 indicated that most of the respondents view about key feature of new websites. It means respondent responses are not positive with this statement.

The lower mean score (2.6) suggests that while municipalities have websites, they may lack essential features or functionality. This implies that many municipal websites still offer only basic services rather than fully interactive e-governance platforms.While municipalities have established official emails and websites, the effectiveness and usability of these platforms remain questionable.The high adoption rate of official emails (mean: 5) suggests a positive step toward digital communication in governance.The presence of municipal websites (mean: 5) is promising, but the low mean score (2.6) for website features suggests limited functionality, possibly restricted to static information rather than interactive services.To enhance e-governance, municipalities should focus on improving website features, incorporating interactive services (such as online applications, payment gateways, and grievance handling), and ensuring regular updates.

4.3 Opportunities Derived by the Use of Software

The use of software in municipalities plays a crucial role in enhancing governance, improving efficiency, and providing better services to citizens. As municipalities transition toward e-governance, software solutions help automate processes, manage data, and facilitate communication between government officials and the public.

Social Security (Online System of Ministry), Municipal Accounting (SUTRA), Vital Registration (Online System of Ministry), Revenue/Tax Collection, Planning (Online System

of Municipality), Ward level Accounting, E-Procurement System, Personnel/Staffs Information, Assets Management/Store - (PAMS), Office Automation, NGO Management, Disaster related, Social Mobilization, Mapping/Electric Building Permit System (EBPS) and Drawing and Structural Analysis are fundamental attributes of Use of Software.

The use of software in municipalities is essential for modern governance, but its implementation is still in the early stages in many regions. While some municipalities have embraced digital solutions for finance, administration, and citizen services, others face challenges such as lack of infrastructure, technical skills, and funding. Strengthening software adoption through proper planning, investment, and training will be key to improving municipal service delivery and governance.

Table 4.3

Use of Software for Exploring Different Opportunities

Various Software	**1=Not at all**	**2=Some how agree**	**3=Moderate agree**	**4=Agree**	**5= Highly Agree**	**Total Value**	**Mean**
Online Social Security System (Managed by the Ministry)	-	-	35	95	-	485	3.8
Municipal Accounting System (SUTRA)	-	-	-	95	35	555	4.2
Vital Registration System (Managed by the Ministry)	-	-	30	70	30	520	4.0
Digital Revenue and Tax Collection System	-	-	35	95	-	485	3.8
Online Municipal	-	-	75	55	-	445	3.4

Various Software	1=Not at all	2=Some how agree	3=Moderate agree	4=Agree	5= Highly Agree	Total Value	Mean
Planning System							
Ward-Level Accounting System	-	-	55	75	-	465	3.6
E-Procurement Platform	-	-	30	70	30	520	4.0
Personnel and Staff Information System	25	25	50	30	-	345	2.6
Assets Management and Store System (PAMS)	-	30	70	30	-	390	3.00
Office Automation System	95	35	-	-	-	165	1.2
NGO Management System	75	55	-	-	-	185	1.42
Disaster Management System	95	35	-	-	-	165	1.2
Social Mobilization Platform	95	35	-	-	-	65	1.2
Mapping and Electronic Building Permit System (EBPS)	-	-	30	70	30	520	4.0
Digital Drawing and Structural Analysis System		25	25	50	30	475	3.6

Source: Field Survey, 2024/25

The table 4.3 indicates the use of software. The provided data evaluates the adoption and effectiveness of various software systems used in municipalities. The mean values help assess the level of agreement among respondents regarding software implementation and usage. Statement about Social Security (Online System of Ministry), 35 respondents mention moderate agree, 95 respondents mention Agree. Mean value 3.8 indicated that most of the respondents mentioned municipality has Social Security (Online System of Ministry). It means respondent responses are positive with this statement.

For Revenue/Tax Collection, 35 respondents moderately agreed, 95 respondents agreed, and 20 respondents highly agreed. The mean value of 3.8 indicates that most respondents acknowledge the presence of a Revenue/Tax Collection system in the municipality, reflecting a positive response.For Planning (Online System of Municipality), 75 respondents moderately agreed, while 55 respondents agreed. The mean value of 3.4 suggests that most respondents recognize the existence of this system, indicating a positive response.For Ward-Level Accounting, 55 respondents moderately agreed, and 75 respondents agreed. The mean value of 3.6 shows that most respondents acknowledge the presence of Ward-Level Accounting in the municipality, indicating a positive response.For E-Procurement System, 30 respondents moderately agreed, 70 respondents agreed, and 30 respondents highly agreed. The mean value of 4.0 confirms that the majority of respondents recognize the existence of an E-Procurement System in the municipality, reflecting a strong positive response.

Regarding the statement about Municipal Accounting (SUTRA), 95 respondents mention Agree and 35 respondents mention Highly Agree. Mean value 4.2 indicated that most of the respondents mentioned municipality has Municipal Accounting (SUTRA). It means respondent responses are positive with this statement.Statement about Vital Registration (Online System of Ministry), 30 respondents Moderate agree, 70 respondents mention Agree

and 30 respondents mention Highly Agree. Mean value 4 indicated that most of the respondents mentioned municipality has Vital Registration (Online System of Ministry). It means respondent responses are positive with this statement.

Regarding the statement about Personnel/Staffs Information, 25 respondent not at all, 25 little extend, 50 Moderate agree and 30 respondents mention Agree. Mean value 2.6 indicated that few respondents mentioned municipality has Personnel/Staffs Information. It means respondent responses are negative with this statement. Regarding the statement about Assets Management/Store - (PAMS), 30 little extend and 70 Moderate agree. Mean value 3 indicated that respondents mentioned municipality has Assets Management/Store - (PAMS). It means respondent responses are positive with this statement. Regarding the statement about Office Automation, 95 not at all and 35 little extend. Mean value 1.2 indicated that respondents are not mentioned municipality has Office Automation. It means respondent responses are negative with this statement.

Regarding NGO Management, 75 respondents indicated "Not at all," while 55 indicated "To a little extent." The mean value of 1.4 suggests that respondents do not acknowledge the presence of NGO Management in municipalities, reflecting a predominantly negative response. Similarly, for Disaster-Related systems, 95 respondents selected "Not at all," and 35 chose "To a little extent." The mean value of 1.2 indicates that respondents do not recognize the existence of disaster-related management systems in municipalities, demonstrating a largely negative perception.

Regarding the statement about Social Mobilization, 95 not at all and 35 little extend. Mean value 1.2 indicated that respondents are not mentioned municipality has Social Mobilization. It means respondent responses are negative with this statement. Statement about Mapping/Electric Building Permit System (EBPS), 30 respondents Moderate agree, 70

respondents mention Agree and 30 respondents mention Highly Agree. Mean value 4.0 indicated that most of the respondents mentioned municipality has Mapping/Electric Building Permit System (EBPS). It means respondent responses are positive with this statement. Statement about Drawing and Structural Analysis, 25 Somehow agree, 25 respondents' Moderate agree, 50 respondents mention Agree and 30 respondents mention Highly Agree. Mean value 3.6 indicated that most of the respondents mentioned the municipality has Drawing and Structural Analysis. It means respondent responses are positive with this statement.

The use of software in municipalities is improving, especially in financial management and administrative tasks. However, critical areas like disaster response, HR management, and office automation remain underutilized. A strategic approach focusing on training, better integration, and policy support is necessary to enhance e-governance and digital service delivery in municipalities.

Table 4.4

Status of New System Developed in Extending E-governance in Dhangadi

New System Developed	1= Not at all	2= Somehow agree	3= Moderate agree	4= Agree	5= Highly Agree	Total Value	Mean
Online Budget Authorization System	-	-	52	48	30	498	**3.8**
Digital Reporting Platform	37	39	28	26	-	303	**2.3**
Electronic Letterhead System	50	50	30	-	-	240	**1.8**
Municipality Mobile Application	30	50	50	-	-	280	**2.1**
Office Automation System	70	60	-	-	-	170	**1.4**

Source: Field Survey, 2024/25

The table 4.4 evaluates the adoption of newly developed systems in municipalities, with mean values reflecting the extent of their implementation and usage. Table 4.4 presents the Status of Newly Developed Systems in municipalities. Online Budget Authorization: 52 respondents moderately agreed, 48 agreed, and 30 highly agreed. The mean value of 3.8 indicates that most respondents acknowledge the presence of this system, reflecting a positive response. Online Reporting System: 37 respondents selected not at all, 39 somehow agreed, 28 moderately agreed, and 26 agreed. The mean value of 2.3 suggests that respondents do not recognize the municipality's implementation of this system, reflecting a negative response. Digital Letterhead: 50 respondents selected not at all, 50 somehow agreed, and 30 moderately agreed. The mean value of 1.8 indicates that municipalities have not widely adopted this system, leading to a negative response. Mobile App: 30 respondents selected not at all, 50 somehow agreed, and 50 moderately agreed. The mean value of 2.1 suggests that municipalities lack proper implementation of mobile applications, resulting in a negative response.

Office Automation System: 70 respondents selected not at all, and 60 somehow agreed. The mean value of 1.4 indicates that respondents do not acknowledge the presence of this system in municipalities, showing a negative response. Overall, while Online Budget Authorization has received positive feedback, other newly developed systems like Online Reporting, Digital Letterhead, Mobile Apps, and Office Automation have low adoption rates, highlighting the need for improvement in their implementation and usage.

While municipalities have successfully adopted Online Budget Authorization, other newly developed systems - especially Online Reporting, Mobile Apps, Digital Letterheads, and Office Automation- face significant challenges. A strategic push toward training, system

integration, and digital transformation policies is needed to ensure better adoption of these e-governance tools.

Table 4.5

Social Networking Status and Networks Executed for E-governance

	1= Not at all	2= Somehow agree	3= Moderate agree	4= Agree	5= Highly Agree	Total Value	Mean
Official Facebook page for sharing information	-	-	55	75	--	465	3.6
Municipal Facebook page dedicated to grievance redressal	75	55	-	-	-	185	1.4
Official Twitter account maintained by the municipality	130	-	-	-	-	130	1.0
Municipality's official YouTube channel	95	35	-	-	-	165	1.2
Live streaming of local events via social media platforms	75	55	-	-	-	185	1.4

Source: Field Survey, 2024/25

Table 4.5 presents the social networking status of the municipality. Official Facebook Page for Information Dissemination: A total of 55 respondents moderately agreed, while 75 respondents agreed that the municipality has an official Facebook page for information dissemination. With a mean value of 3.6, this indicates a generally positive perception among respondents regarding the effectiveness of the Facebook page in sharing information.

Municipal Facebook Page for information dissemination: Among the respondents, 75 stated "Not at all," and 55 indicated "Somehow agree." The mean value of 1.4 suggests that most respondents believe the municipality's Facebook page is not effective in handling grievances, indicating a negative perception of this aspect. Municipality's Official Twitter Page: A total of 130 respondents selected "Not at all," resulting in a mean value of 1.0. This suggests that the municipality either lacks an official Twitter account or that it is not effectively utilized, leading to a negative response from the respondents. Live Telecast of Local Events on Social Media: In this category, 75 respondents selected "Not at all," and 55 chose "Somehow agree." The mean value of 1.4 indicates that most respondents believe the municipality does not effectively utilize social media for live event broadcasts, reflecting a negative perception. Municipality's Official YouTube Account: A total of 95 respondents selected "Not at all," while 35 chose "Somehow agree." With a mean value of 1.2, the data suggests that the municipality either does not have an official YouTube account or it is not well-maintained, resulting in a negative response from the respondents. Overall, the data highlights that the municipality's Facebook page is the most effective social media platform for communication, while grievance handling, Twitter, YouTube, and live event telecasts require significant improvement.

The results reveal that Facebook is the most effective social media platform for municipal communication. Strengthening its role with more interactive and timely updates may enhance engagement. Grievance handling via Facebook is not effective; alternative mechanisms (such as dedicated customer service channels or WhatsApp groups) should be explored. Twitter and YouTube are underutilized. If the municipality intends to expand its digital presence, they should focus on improving engagement on these platforms. Live event telecasts need improvement in terms of reach, promotion, or content quality.

Table 4.6

Information Services Request from Public for Expanding the Governance Opportunities

Information Service Request from Public	1= Not at all	2= Somehow agree	3= Moderate agree	4= Agree	5= Highly Agree	Total Value	Mean
Official municipal websites for public access.	130		-	-	-	130	1.0
Digital front office for streamlined administrative services.	75	55	-	-	-	185	1.4
Citizen interaction system to facilitate communication and engagement.	70	30	30	-	-	220	1.6
Grievance handling system for efficient issue resolution.	70	25	35	-	-	225	**1.7**

Source: Field Survey, 2024

The table 4.6 indicates the Information Service Request from Public. Municipality's Digital Services Status. Official Website: A total of 130 respondents selected "Not at all," resulting in a mean value of 1.0. This indicates that most respondents believe the municipality either does not have an official website or it is not effectively maintained. The overall response to this statement is negative. Digital Front Office: Among the respondents, 75 selected "Not at all," while 55 chose "Somehow agree." With a mean value of 1.4, the data suggests that the municipality’s digital front office is perceived as ineffective. The overall response to this statement is negative.

Citizen Interaction System (First Statement): A total of 70 respondents selected "Not at all," 30 chose "Somehow agree," and 30 indicated "Moderate agree." The mean value of 1.6

suggests that most respondents perceive the municipality's citizen interaction system as inadequate, leading to a negative response.

Citizen Interaction System (Second Statement): In this case, 70 respondents selected "Not at all," 25 chose "Somehow agree," and 35 indicated "Moderate agree." With a mean value of 1.7, the results suggest that the municipality's citizen interaction system is still perceived as ineffective, though slightly better than in the previous statement. The overall response remains negative. Overall, the data highlights a lack of effective digital services within the municipality. The website, digital front office, and citizen interaction systems require significant improvements to enhance public engagement and service delivery.

Table 4.7

Organizational Setting of the E-Governance (Function and Resource Mobilization)

Organizational Structure	**1= Not at all**	**2= Somehow agree**	**3= Moderate agree**	**4= Agree**	**5= Highly Agree**	**Total Value**	**Mean**
MARS system for office automation and staff management.	25	30	50	25	-	390	**3**
Efficient attendance monitoring system.	-	30	70	30	-	390	**3**
CCTV surveillance for enhanced security.		30	35	45	20	390	**3**
Digitization of paper records for streamlined document management.	95	35	-	-	-	165	1.2

Source: Field Survey, 2024/25

The table 4.7 indicates the Organization (Function and Resource Mobilization). The table evaluates various organizational functions and resource mobilization efforts within the municipality. The mean values highlight the effectiveness of different systems based on

respondent feedback. MARS (Office Automation and Staff Management System) - Mean: 3.0. Responses are spread across different agreement levels, with a moderate mean score of 3.0. This suggests that while some respondents find the system functional, others may see room for improvement.

Effective Attendance System - Mean: 3.0. The responses indicate moderate agreement on the effectiveness of the attendance system. With a mean of 3.0, it suggests that while attendance tracking is somewhat effective, there may be areas that need enhancement. CCTV Surveillance - Mean: 3.0. Respondents provided mixed feedback, leading to a 3.0 mean score. This implies that while surveillance is implemented, it may not be perceived as fully effective or consistently maintained.

Digitization of Paper Records – Mean: 1.2. This has the lowest mean score, indicating that digitization efforts are minimal or ineffective. The majority of respondents selected "Not at all" or "Somehow agree," highlighting a significant gap in digital record-keeping.

Moderate effectiveness in office automation, attendance tracking, and surveillance: These areas have a mean score of 3.0, indicating that while functional, improvements could enhance efficiency. Weak digitization efforts: With a low mean of 1.2, digitizing paper records needs urgent attention to improve record accessibility, security, and operational efficiency. Enhance MARS and Attendance Systems by integrating advanced automation and ensuring staff adherence. Improve CCTV surveillance coverage and monitoring for better security. Prioritize record digitization through investment in digital archiving tools and training for staff.

Table 4.8

Status of Information /Service Delivery in Dhangadi for Governance

Information /Service Delivery	1= Not at all	2= Somehow agree	3= Moderate agree	4= Agree	5= Highly Agree	Total Value	Mean
Queue Management System for organized service delivery.	-	25	70	35	-	400	3.0
Group SMS for mass communication.	32	25	48	25	-	326	2.6
Digital Display Boards for real-time updates.	-	54	76	-	-	260	**2.5**
Digital Citizen Charter for transparency.	24	51	75	-	-	351	**2.7**
Free Wi-Fi Zone for public connectivity.	-	72	28	30	-	348	2.6

Source: Field Survey, 2024/25

The table 4.8 indicates the Status of Information /Service Delivery.The table evaluates various aspects of information and service delivery within the municipality, based on respondent feedback. The mean values indicate the perceived effectiveness of these systems. Queue Management System - Mean: 3.0, respondents provided mixed feedback, with a moderate agreement level. A mean score of 3.0 suggests that while the system is functional, there is room for improvement in efficiency and user experience.

Group SMS – Mean: 2.6: With a mean score of 2.6, this system is moderately effective but lacks widespread use or reliability in communication. The feedback suggests that improvements are needed in reach, accuracy, and the timeliness of SMS notifications.Digital Display Boards – Mean: 2.5: Scoring relatively low, digital display boards appear to be either underutilized or not offering significant value to citizens. Enhancing their location, content relevance, and maintenance could improve their overall effectiveness.

Similarly, Digital Citizen Charter – Mean: 2.7: With a moderate score of 2.7, this system is somewhat effective, but it may require better visibility and more frequent updates to ensure citizens find it beneficial. On the other hand, Free Wi-Fi Zone – Mean: 2.6: The mean score of 2.6 indicates that the availability of free Wi-Fi is inconsistent or not fully meeting user expectations. Potential issues may include limited coverage, slow internet speeds, or a lack of awareness among citizens.

Overall, service delivery systems show moderate effectiveness, with no category exceeding a score of 3.0, suggesting that all services require improvement to enhance their impact. The Queue Management System scores the highest (Mean: 3.0), but still has opportunities for improvement in reducing wait times and streamlining user flow. Group SMS, Digital Display Boards, and Free Wi-Fi Zones need better implementation to realize their full potential for citizens.

Enhance queue management efficiency with better integration and digital ticketing. Improve Group SMS notifications by ensuring timely, accurate, and relevant information delivery. Increase awareness and maintenance of digital display boards and citizen charters for better accessibility. Expand and optimize Wi-Fi zones for better connectivity and user experience.

4.4 Multidimensional Nature of the Opportunities

Table 4.9 presents the status of capacity building and support for e-governance within the municipality. ICT Training for Municipal Staff: A total of 102 respondents selected "Not at all," while 28 chose "Somehow agree."The mean value of 1.2 indicates that most respondents believe the municipality has not provided adequate ICT training for municipal staff. This reflects a negative perception of the municipality's efforts in ICT skill development. ICT Training for Elected Representatives (Within One Year): All 130 respondents selected "Not at all," resulting in a mean value of 1.0. This suggests that no ICT training has been conducted for elected representatives within the past year, leading to a strongly negative response.

Table 4.9

Capacity Building and Support in e-Governance

Capacity Building and support	1= Not at all	2= Somehow agree	3= Moderate agree	4= Agree	5= Highly Agree	Total Value	Mean
ICT training organized by the municipality for municipal staff.	102	28	-	-	-	158	1.2
ICT training conducted for elected representatives within the past year.	130	-	-	-	-	130	1.0
ICT training provided to municipal	130	-	-	-	-	130	1.0

stakeholders within the last year.							
E-governance training for municipal staff conducted by external organizations within a year.	130	-	-	-	-	130	1.0
Exposure visits to other municipalities for e-governance learning.	130	-	-	-	-	130	1.0

Source: Field Survey, 2024/25

E-Governance Training for Municipal Staff (Provided by External Organizations within One Year): Again, all 130 respondents selected "Not at all," with a mean value of 1.0. This indicates that no external organizations have provided e-governance training for municipal staff, contributing to a negative perception of training opportunities. All 130 respondents selected "Not at all," with a mean value of 1.0. This suggests that no exposure visits or knowledge-sharing programs with other municipalities have been conducted, further highlighting a gap in capacity-building efforts.

Lack of Training Opportunities: The low mean values (ranging from 1.0 to 1.2) indicate that the municipality has not prioritized ICT and e-governance training for either staff or elected representatives. No External Support for Training: There is no evidence of external organizations stepping in to provide necessary training, which could be an area for

collaboration. No Exposure Visits: The absence of exposure visits to other municipalities means there are missed opportunities for learning from best practices in e-governance.

Implement Regular ICT Training Programs for both municipal staff and elected representatives to enhance digital literacy and efficiency. Collaborate with external organizations (government agencies, NGOs, or tech firms) to provide e-governance training and workshops. Facilitate exposure visits to municipalities with successful e-governance models to learn from their experiences and improve implementation. The data strongly suggests that the municipality must prioritize capacity building in e-governance to improve digital service delivery and operational efficiency.

Table 4.10

Additional System Setups that can expand the Opportunities of Governance

Additional system setups	1= Not at all	2= Somehow agree	3= Moderate agree	4= Agree	5= Highly Agree	Total Value	Mean
Automated Notice Board	130	-	-	-	-	130	1.00
Digital Notice System	130	-	-	-	-	130	1.00
Digital Display System	48	51	31	-	-	243	1.8

Source: Field Survey, 2024/25

Table 4.10 presents the status of additional digital systems implemented within the municipality. Auto Notice Board, all 130 respondents selected "Not at all," resulting in a mean value of 1.0. This indicates that the municipality does not have an Auto Notice Board, leading to a strongly negative response. Digital Notice System: All 130 respondents selected "Not at all," with a mean value of 1.0. The data suggests that a Digital Notice System is not available, contributing to a negative perception among respondents. Digital Display, 51

respondents selected "Not at all," while 31 chose "Somehow agree," and 20 indicated "Moderate agree."With a mean value of 1.8, the results suggest that the municipality has limited or ineffective digital displays. While some respondents acknowledge their presence, the overall response remains largely negative.

Deficiency in Digital Notice Systems: The analysis reveals a complete absence of automated digital communication mechanisms such as Auto Notice Boards and Digital Notice Systems, as evidenced by the lowest recorded mean score of 1.0.

Limited Utilization of Digital Displays: Although a few respondents acknowledged the existence of digital displays, the overall mean value of 1.8 indicates their limited availability and suboptimal use in practice.

To address these shortcomings, it is recommended that an Auto Notice Board be implemented to facilitate real-time information dissemination and enhance municipal communication. Furthermore, the development of a comprehensive Digital Notice System is essential to streamline the publication of public notices and official announcements. Expanding and optimizing the use of digital display technologies will also be critical to improving the accessibility and effectiveness of municipal information delivery. The findings underscore a substantial gap in the existing digital communication infrastructure, warranting immediate attention and strategic intervention.

Table 4.11

Websites Status and Dynamics in E-governance Services

E-government websites quality indicator factors	How do you rate the website quality indicator factors?						
	1= Not at all	2= Somehow agree	3= Moderate agree	4= Agree	5= Highly Agree	Total Value	Mean
Online Services	28	72	30	-	-	262	2.0
Online Databases	96	34	-	-	-	164	1.2
Online Audio Clips	98	32	-	-	-	-162	1.2
Frequency of Information Updates	-	54	46	30	-	266	**2.0**
Site Attractiveness		62	36	32	-	360	2.7
Security Features	52	38	19	21	-	269	**2.0**
Query and Response Facility	20	50	38	22	-	322	**2.4**
User-Friendliness (Ease of Finding Information)	52	53	10	15	-	248	**1.9**
Motivation for Citizens to Use the Website	25	35	30	25	-	285	2.1
Web Search Functionality	-	-	-	66	64	484	4.5
Downloadable Forms	-	-	-	31	99	619	4.7
Digital Signatures	102	28	-	-	-	156	1.2
Job Listings/Opening Notices	104	26	-	-	-	120	1.2
Job Application Provision	130	-	-	-	-	130	1.0
Accessibility for People with Disabilities	130	-	-	-	-	130	1.0
Knowledge Management Blog	54	76	-	-	-	206	1.6
Use of GIS (Geographic Information System)	104	26	-	-	-	156	1.2

Source: Dhangadi Sub Metropolitan city, 2079

Table 4.11 presents the status of supplementary digital systems aligned with e-government objectives in the municipality. Concerning the Auto Notice Board, all 130 respondents reported "Not at all," resulting in a mean score of 1.0. This unanimous response signifies the complete absence of an Auto Notice Board, reflecting a highly negative perception regarding

the availability of such infrastructure. Similarly, for the Digital Notice System, all 130 respondents again selected "Not at all," also yielding a mean value of 1.0. This indicates that no such system has been implemented within the municipality, reinforcing the perception of a substantial deficiency in digital communication mechanisms. These findings collectively highlight critical gaps in the municipality's efforts to digitize public service delivery through web-based platforms.

The analysis of responses regarding the use of digital displays reveals notable limitations in their implementation within the municipality. Specifically, 51 respondents indicated "Not at all," 31 chose "Somehow agree," and 20 selected "Moderately agree," resulting in a mean score of 1.8. These findings suggest that while a portion of respondents acknowledges the presence of digital displays, their overall availability and functionality remain insufficient and ineffective. The generally negative response highlights a lack of widespread integration and utility of digital display systems in municipal communication.

Moreover, the absence of Auto Notice Boards and Digital Notice Systems is clearly reflected in the data, with a recorded mean score of 1.0—the lowest among all measured indicators. This signals a complete deficiency in automated notice dissemination mechanisms. To address these challenges, it is recommended that the municipality implement an Auto Notice Board system capable of providing real-time updates to the public. In parallel, the development and deployment of a comprehensive Digital Notice System would enhance the efficiency and consistency of public communication. Additionally, efforts should be made to expand and improve the visibility and use of digital display technologies, ensuring they serve as accessible and effective channels for disseminating important information. Collectively, these findings underscore a significant gap in the municipality’s digital communication infrastructure, necessitating urgent strategic interventions.

4.5 Chapter Summary

The survey results highlight several key opportunities for enhancing e-governance in Dhangadi. The findings indicate both strengths and areas where improvement is needed to fully leverage the potential of e-governance for better service delivery and citizen engagement.

1. **Strong Approval for Core Digital Systems**
    - Several e-governance systems, including the municipality's official email in the "gov.np" domain, Municipal Accounting (SUTRA), and the E-Procurement System, received high mean values (5.0, 4.2, and 4.0, respectively), indicating strong approval and satisfaction among respondents. This reflects an opportunity to build on the success of these systems, which are seen as effective in supporting governance and service delivery.
2. **Need for Improvement in Website and Digitization**
    - Despite positive feedback on several systems, the new municipal website scored a low mean of 2.6, suggesting it does not meet expectations for user engagement or accessibility. Furthermore, the Digitization of Paper Records received a mean score of 1.2, indicating significant dissatisfaction with the progress of digitizing records. Improving these systems can enhance public access to services and streamline administrative processes.
3. **Training and Capacity Building for Staff**
    - A major gap identified in the survey is the lack of training and exposure visits for municipal staff, with 130 respondents reporting no training on e-governance systems, resulting in a mean value of 1.0. This indicates an opportunity to invest in staff development through targeted training programs

and exposure visits to other municipalities, which would better equip staff to manage and implement e-governance systems effectively.

4. **Enhancing Communication Systems**
    - Communication tools such as the Group SMS System and Digital Display Boards received a mean score of 2.6, suggesting that they are not fully effective in reaching or engaging citizens. There is an opportunity to improve these tools by enhancing their content, reach, and timeliness to ensure better communication between the municipality and the public, which can lead to improved service delivery and greater citizen satisfaction.

In conclusion, while Dhangadi has made notable progress in implementing e-governance, addressing these key opportunities—improving website functionality, enhancing staff training, advancing digitization efforts, and upgrading communication tools—will be crucial in optimizing the municipality's e-governance infrastructure and improving overall public service delivery.

CHAPTER FIVE

ISSUES AND CHALLENGES IN E-GOVERNANCE IN DHANGADI

This chapter examines various challenges related to e-governance, including policy priorities in municipal annual plans, budget allocation for e-governance infrastructure (hardware components), the integration of e-governance in municipal periodic plans, its reflection in the Medium-Term Expenditure Framework (MTEF), and the role of stakeholders and development partners in supporting e-governance and ICT initiatives as municipal priorities.

5.1 Priority-basis Issues of Municipality in e-Governance

Municipalities should prioritize e-governance initiatives that enhance public service delivery, foster citizen engagement, and promote digital literacy. In the case of Dhangadi, specific issues and preferences shape its priorities, which include improving service delivery, strengthening citizen participation, advancing digital literacy, enhancing digital infrastructure, and fostering partnerships with the private sector. To achieve these goals, key components of e-governance—people, processes, technology, and resources—must be effectively addressed.

Table 5. 1

Priority of Municipality in e-Governance

Municipality Priority in e-governance	Level of Extent						
	1=Not at all	2= little	3= Moderate	4= Great	5= Very great	Total Value	Mean
Policy emphasis in the municipal annual plan	72	58	-	-	-	188	1.4

Financial allocation for e-governance initiatives (hardware components)	50	48	32	-	-	242	1.8
Funding allocation for capacity development (software aspects)	79	51	-	-	-	181	1.4
Integration of e-governance in the municipal periodic plan	107	23	-	-	-	153	1.2
Inclusion of e-governance in the Medium-Term Expenditure Framework (MTEF)	57	83	-	-	-	223	1.7
Assistance from stakeholders and development partners in e-governance and ICT	101	29	-	-	-	159	1.2

Source: Dhangadi Sub Metropolitancity, 2079

The table 5.1 indicates the Priority of Municipality in e-governance. Statement aboutPolicy Priority in municipal Annual Plan,Policy Priority in the Municipal Annual Plan: 72 respondents selected "Not at all," while 58 chose "Somehow agree."The mean value of 1.4

suggests that most respondents believe e-governance is not a priority in the municipal annual plan. This indicates a lack of strong policy direction for digital governance.

In terms of budget allocation for e-governance infrastructure (hardware components), 50 respondents selected "Not at all," 48 chose "Somehow agree," and 32 indicated "Moderate agree," resulting in a mean value of 1.8. This suggests that although some financial provision exists, it remains inadequate to fulfill the technical demands of e-governance initiatives.

Regarding budget allocation for capacity development (software components), 79 respondents selected "Not at all," and 51 chose "Somehow agree," yielding a mean score of 1.4. This reflects a significant deficiency in investment toward software enhancement and digital capacity building, which adversely impacts the effectiveness of e-governance implementation.

Furthermore, when assessing the integration of e-governance within the Municipal Periodic Plan, 107 respondents selected "Not at all," while only 23 chose "Somehow agree." The resulting mean value of 1.2 highlights a substantial absence of e-governance considerations in the municipality’s long-term strategic planning.

Similarly, in the Medium-Term Expenditure Framework (MTEF), 57 respondents selected "Not at all," and 83 selected "Somehow agree," generating a mean value of 1.7. Although e-governance appears to be acknowledged in the MTEF, the relatively low mean score indicates that it is not effectively prioritized or operationalized.

The findings of the study reveal a significant lack of policy commitment and fiscal prioritization for e-governance within the municipality. The low mean values across key indicators—ranging from 1.2 to 1.8—reflect the municipality’s limited attention to digital transformation. Critical areas such as budget allocation for both hardware and software

components of e-governance remain underfunded. Moreover, the absence of strategic vision is evident in the weak integration of e-governance in fundamental municipal planning documents, including the Annual Plan, Periodic Plan, and Medium-Term Expenditure Framework (MTEF). This signals a gap in institutional foresight, where digital governance is not yet seen as an essential pillar of local development.

In addition to the internal policy gaps, the municipality has also failed to engage meaningfully with external stakeholders and development partners. Effective implementation of e-governance often requires collaborative efforts involving government agencies, private sector actors, and international development organizations. However, the study indicates that such partnerships have either not been established or are severely limited in scope. This lack of multi-stakeholder engagement hinders both the technical and financial capacity required to scale up e-governance initiatives and undermines efforts to enhance transparency, efficiency, and citizen-centered service delivery.

To address these challenges, the municipality must adopt a comprehensive and structured approach. First, e-governance should be institutionalized within all strategic planning documents, ensuring that it is treated as a cross-cutting priority in local governance. Second, greater budgetary provisions must be allocated specifically for infrastructure development and capacity-building in digital systems. Finally, the municipality should actively cultivate partnerships with key stakeholders, leveraging their expertise and resources to develop a sustainable e-governance ecosystem. Such coordinated action will be crucial for fostering inclusive, transparent, and efficient public administration in the digital era.

5.2 Sector wise e-Governance Priorities and Challenges of Municipality

This study articulates that the general administration division, urban infrastructure division, education and health division, social development division, fiscal management division,

economic development division, environment division, foreign/PPP/intergovernmental division and ward office are sectoral e-Governance priorities of Dhangadi Municipality

Table 5.2 presents the distribution of respondents' perceptions regarding the prioritization and effectiveness of e-governance across various municipal divisions. The findings reveal a heterogeneous pattern of satisfaction, with certain divisions perceived more favorably, while others are identified as lagging behind in e-governance implementation. This variation underscores inconsistencies in the adoption and operationalization of digital governance practices across the municipality's administrative framework.

Negative perceptions were particularly evident in the assessment of the General Administration Division. Of the total respondents, 30 selected "Not at all," 50 chose "Somehow agree," and another 50 indicated "Moderate agree." The calculated mean value of 2.2 demonstrates a generally unfavorable evaluation, suggesting that a significant proportion of respondents consider the division's efforts in implementing e-governance measures to be insufficient and ineffective. This perception points to potential shortcomings in integrating digital systems within the core administrative functions.

Similarly, the Social Development Division also reflected critical evaluations. In this division, 26 respondents selected "Somehow agree," while a majority of 104 respondents chose "Moderate agree," yielding a mean value of 2.8. Although marginally higher than that of the General Administration Division, the mean value still indicates only a moderate level of satisfaction among the respondents. The data suggest that e-governance practices within the Social Development Division remain underdeveloped, with limited success in enhancing service delivery and administrative efficiency through digital means.

Table 5.2

Sector wise e-Governance Priority of Municipality

Priority on e-governance in different structures of municipality (Budget and program)	Level of Extent						
	1=Not at all	2= Some how agree	3= Mode rate	4= Agree	5= Very great	Total Value	Mean
General Administration Division	30	50	50	-	-	280	2.2
Urban Infrastructure Division	-	30	68	32	-	292	3.0
Education and Health Division	-	27	70	33	-	396	3.0
Social Development Division	-	26	104	-	-	364	2.8
Fiscal Management Division	-	-	76	54	-	444	3.4
Economic Development Division	-	30	70	30	-	390	3.0
Environment Division	-	28	50	52	-	414	3.1
Foreign/PPP/Intergovernmental Division	-	30	72	28	-	388	2.9
Ward Office	-	53	77	-	-	260	2.0

Source: Dhangadi Sub Metropolitancity, 2079

The data presented in Table 5.2 further detail respondents' perceptions of e-governance performance across additional municipal divisions. In the Fiscal Management Division, 76 respondents selected "Somehow agree," while 54 selected "Agree," resulting in a mean value of 3.0. This outcome suggests that although there is a moderate level of satisfaction, there remains considerable scope for improvement in the implementation of fiscal e-governance initiatives. A similar pattern is observed in the Foreign/PPP/Intergovernmental Division, where 30 respondents selected "Somehow agree," 72 chose "Moderate agree," and 28 indicated "Agree." The resulting mean value of 2.9 implies that the e-governance practices in this division are less developed, yielding a mixed yet predominantly negative perception among respondents.

Conversely, more favorable evaluations are evident in divisions such as Urban Infrastructure, Education and Health, Economic Development, and Environment. In the Urban Infrastructure Division, 30 respondents selected "Somehow agree," 68 chose "Moderate agree," and 32 indicated "Agree," producing a mean value of 3.0, which reflects a generally positive view regarding the application of e-governance. Similarly, in the Education and Health Division, 27 respondents selected "Somehow agree," 70 chose "Moderate agree," and 33 indicated "Agree," yielding a mean value of 3.0, further suggesting effective implementation of digital governance practices. The Economic Development Division received particularly strong positive feedback, with 60 respondents selecting "Moderate agree" and 40 selecting "Agree," resulting in the highest mean value of 3.4 among the divisions assessed. This indicates a notably favorable perception of e-governance initiatives in this sector. In the Environment Division, responses from 28 "Somehow agree," 50 "Moderate agree," and 52 "Agree" respondents produced a mean value of 3.1, signaling that e-governance implementation in environmental management is viewed positively by the majority of participants.

Therefore, the analysis highlights a division between sectors perceived as strong in e-governance—namely Economic Development, Environment, Education and Health, and Urban Infrastructure—and those perceived as weaker, including General Administration, Social Development, Fiscal Management, and Foreign/PPP/Intergovernmental Divisions. These disparities in perception indicate inconsistent levels of digital governance development across municipal functions.

5.3 Enhancement Challenges for the Performance of Municipal Employees

Supported in service delivery, enhanced satisfaction with delivery of services, supported to save the time, enhanced efficient delivery of services, supported in cost saving, enhanced quality in delivery of services, improved communication, reduced corruption in accessing

services and Enhanced performance at municipality are level to which application of E-governance enhances performance of municipal employees.

Table 5.3

Challenges regarding E-Governance Enhances Performance of Municipal Employees

Performance Expectation (efficiency and effectiveness)	**Level of Extent**						
	1= Not at all	2= little	3= Moderate	4= Great	5= Very great	Total Value	Mean Value
Assisted in service delivery	-	25	25	48	32	397	3.0
Increased satisfaction with service delivery	-	30	42	32	26	344	3.4
Helped save time	-	27	23	49	31	474	3.6
Improved efficiency in service delivery	-	30	46	54	-	414	3.2
Contributed to cost savings	-	30	47	53	-	413	3.2
Enhanced service delivery quality	25	25	46	34	-	349	2.6
Improved communication	-	30	40	29	31	451	3.4
Reduced corruption in accessing services	30	64	36	-	-	296	2.2
Boosted performance at the municipality	30	73	47	-	-	317	2.4

Source: Field Survey, 2024/25

The Table 5.3 indicates the Level to which application of E-Governance Enhances Performance of Municipal Employees. Statement about Supported in service delivery, 25 respondents mentionlittle, 25 respondents mention moderate agree, 48 respondents mention Agree and 32 Very great. Mean value 3.6 indicated that most of the respondents mentioned

municipality has supported in service delivery. It means respondent responses are positive with this statement.Statement about Enhanced satisfaction with delivery of services, 30 respondents mentionlittle, 42 respondents mention moderate agree, 32 respondents mention Agree and 26 Very great. Mean value 3.4 indicated that most of the respondents mentioned municipality has Enhanced satisfaction with delivery of services. It means respondent responses are positive with this statement. Statement about Supported to save the time, 27 respondents mentionlittle, 23 respondents mention moderate agree, 49 respondents mention Agree and 31 Very great. Mean value 3.6 indicated that most of the respondents mentioned municipality has supported to save the time. It means respondent responses are positive with this statement.

Statement about Enhanced efficient delivery of services, 30 respondents mentionlittle, 46 respondents mention moderate agree and 54 respondents mention Agree. Mean value 3.2 indicated that most of the respondents mentioned municipality has Enhanced efficient delivery of services. It means respondent responses are positive with this statement. Statement about Supported in cost saving, 30 respondents mentionlittle, 47 respondents mention moderate agree and 53 respondents mention Agree. Mean value 3.2 indicated that most of the respondents mentioned municipality has Supported in cost saving. It means respondent responses are positive with this statement. Statement about Enhanced quality in delivery of services, 25 respondents mention not at all, 25 respondents mentionlittle, 46 respondents mention moderate agree and 34 respondents mention Agree. Mean value 2.6 indicated that most of the respondents mentioned municipality has not enhanced quality in delivery of services. It means respondent responses are negative with this statement.

Statement about Enhanced quality in delivery of services, 25 respondents mention not at all, 25 respondents mentionlittle, 46 respondents mention moderate agree and 34 respondents mention Agree. Mean value 2.6 indicated that most of the respondents mentioned

municipality has not enhanced quality in delivery of services. It means respondent responses are negative with this statement.

Statement about Improved communication, 30 respondents mentionlittle, 40 respondents mention moderate agree 29 respondents mention Agree and 31 very great. Mean value 3.4 indicated that most of the respondents mentioned municipality has improved communication. It means respondent responses are positive with this statement.Statement about Reduced corruption in accessing services, 30 respondents mention not at all, 64 respondents mentionlittle, 26 respondents mention moderate agree. Mean value 2.2 indicated that most of the respondents mentioned municipality has not reduced corruption in accessing services. It means respondent responses are negative with this statement.Statement about Enhanced performance at municipality, 30 respondents mention not at all, 73 respondents mentionlittle, 47 respondents mention moderate agree. Mean value 2.4 indicated that most of the respondents mentioned municipality has not enhanced performance at municipality. It means respondent responses are negative with this statement.

While e-governance has positively impacted service delivery, efficiency, cost-saving, and communication,there isa need for improvement in corruption reduction, service quality, and overall performance.By addressing these gaps, the municipality canensure amore effective and citizen-friendly e-governance system.

Table 5.4

Level to which Effort Enhances Application of E-Governance of Municipal Employees

Example of Use/Skill Requirement	**Level of Extent**						
	1= Not at all	**2= little**	**3= Moderate**	**4= Great**	**5= Very great**	**Total Value**	**Mean**
Facilitates access to government services	-	-	70	30	30	480	3.;6

Example of Use/Skill Requirement	Level of Extent						
	1= Not at all	2= little	3= Moderate	4= Great	5= Very great	Total Value	Mean
System is easy to use		25	45	29	31	456	3.5
Municipal information is readily available	22	28	50	30	-	348	2.6
E-governance information is current	20	28	52	30	-	352	2.7
Using e-governance is frustrating	48	52	30	-	-	294	2.2

Source: Field Survey, 2024/25

The table 5.4 indicates the Level to which Effort Enhances application of E-Governance of municipal employees. Help Access Government Services (Mean: 3.6): With a mean value of 3.6, respondents generally agree that e-governance helps in accessing government services. This indicates that the system is perceived as a helpful tool in facilitating access to municipal services. Convenient to Use the System (Mean: 3.5): A mean value of 3.5 reflects that respondents find the system convenient to use, suggesting that ease of use is a positive feature of the e-governance platform.

Municipal Information is Easily Available (Mean: 2.6): The mean value of 2.6 indicates that respondents feel municipal information is somewhat accessible, but not entirely easy to retrieve. This suggests that improvements may be needed to ensure easier access to critical information. E-Governance Information is Up-to-Date (Mean: 2.7): A mean of 2.7 suggests a moderate agreement that the information provided through e-governance is current. However, this score indicates room for improvement in ensuring that e-governance platforms consistently offer up-to-date information. Frustrating to Use E-Governance (Mean: 2.2): With a mean value of 2.2, respondents lean towards a more negative perception, indicating that

using e-governance can be frustrating. This suggests that users experience challenges or difficulties while using the system, which could hinder adoption and effectiveness.

Overall, while municipal employees see e-governance as helpful, convenient, and relatively easy to use for accessing services, there are concerns about the availability of information, its timeliness, and user frustrations. The low score regarding frustration indicates that improving user experience and addressing challenges in accessing and utilizing the system could enhance the application of e-governance.

The table 5.5 indicates the level to which social environment affects application of E-Governance of municipal employees.Statement aboutYour colleagues expect better service using e-government, 25 respondents mention little, 25 respondents mention moderate, 47 Agree and 33 Very great. Mean value 3.6 indicated that most of the respondents mentioned municipality has your colleagues expect better service using e-government. It means respondent responses are positive with this statement.

Table 5.5

Challenges regarding which Social Environment Affects Application of E-Governance of Municipal Employees

Social Influence (culture, peer influence)	**Level of Extent**						
	1= Not at all	**2= little**	**3= Moderate**	**4= Great**	**5= Very great**	**Total Value**	**Mean**
Your colleagues expect improved service through e-government	-	25	25	47	33	478	3.6
Your colleagues expect you to use e-governance efficiently	-	30	50	25	25	435	3.3
E-governance is crucial for enhancing service delivery	-	-	30	25	77	575	4.4
Your colleagues encourage you to	25	25	30	50	-	365	2.8

Social Influence (culture, peer influence)	Level of Extent						
	1= Not at all	2= little	3= Moderate	4= Great	5= Very great	Total Value	Mean
use e-governance services You have received training on how to use e-governance tools	50	32	48	-	-	258	2.0

Source: Field Survey, 2024/25

Statement aboutyour colleagues expect you can use e-governance efficiently, 30 respondents mention little, 50 respondents mention moderate, 25 Agree and 25 Very great. Mean value 3.3 indicated that most of the respondents mentioned municipality has your colleagues expect you can use e-governance efficiently. It means respondent responses are positive with this statement.

Statement aboutE-governance is essential to improving service delivery,30 respondents mention moderate, 25 Agreeand 75 Very great. Mean value 4.4 indicated that most of the respondents mentioned municipality has E-governance is essential to improving service delivery. It means respondent responses are positive with this statement.

Table 5.6

Level to which Facilitating Conditions effects on Application of E-Governance

Facilitating Conditions (IT infrastructure, accountability and transparency)	**Level of Extent**						
	1= Not at all	**2= little**	**3= Moderate**	**4= Great**	**5= Very great**	**Total Value**	**Mean**
Adequate I.T infrastructure for Application of e-governance	-	-	30	67	33	523	4.0
IT infrastructure facilitated faster and more efficient delivery of e-government services	-	-	95	35	-	425	3.2
You have sufficient resources to access e-governance services	-	54	46	30	-	366	2.8
E-governance services are accessible through various ICT platforms of the municipality	45	25	30	30	-	305	**2.3**
E-governance has improved accountability in service delivery	-	25	25	49	31	476	3.6
E-governance has contributed to standardizing services	-	-	30	48	52	542	4.2
Staff training on e-governance supported the application of e-	96	34	-	-	-	164	1.2

Facilitating Conditions (IT infrastructure, accountability and transparency)	Level of Extent						
	1= Not at all	2= little	3= Moderate	4= Great	5= Very great	Total Value	Mean
governance tools							
Municipal policies have promoted the adoption of e-governance services	46	50	34	-	-	248	**1.9**

Source: Field Survey, 2024/25

The table 5.6 indicates Level to which Facilitating Conditions effects on Application of E-Governance. Adequate IT Infrastructure for Application of E-Governance (Mean: 4.0): The mean value of 4.0 indicates a high level of agreement among respondents that the municipality has sufficient IT infrastructure to support the application of e-governance. This suggests that respondents believe infrastructure is a key enabler of e-governance in the municipality.

IT Infrastructure Enabled Faster and Quicker Delivery of E-Government Services (Mean: 3.2): With a mean of 3.2, respondents moderately agree that the existing IT infrastructure enables faster and more efficient delivery of e-government services. While not extremely high, this score indicates that the infrastructure is contributing positively, but there may still be room for improvement. Sufficient Resources to Access E-Governance Services (Mean: 2.8): The mean value of 2.8 suggests that respondents have a somewhat neutral stance on whether there are enough resources for citizens to access e-governance services. This could imply that while resources may be available, there might be concerns about their adequacy or accessibility for all citizens.

E-Governance Services Accessible on Different ICT Platforms (Mean: 2.3): A lower mean of 2.3 indicates that respondents feel that e-governance services are not readily accessible on various ICT platforms of the municipality. This may point to limitations in terms of how the services are being made available or the range of ICT platforms being utilized for accessibility. E-Governance Enhanced Accountability in Service Delivery (Mean: 3.6): A mean value of 3.6 reflects a positive perception that e-governance has contributed to improving accountability in the delivery of services. This indicates that respondents believe e-governance is effective in promoting transparency and accountability.

E-Governance Enhanced Standardization of Services (Mean: 4.2): The highest mean value of 4.2 suggests that respondents strongly agree that e-governance has helped standardize services. This indicates that e-governance has been seen as a tool for ensuring consistency and uniformity in the services provided by the municipality. Training to Staff on E-Governance Facilitated the Application of E-Governance (Mean: 1.2): With a mean value of 1.2, this statement receives the lowest score, indicating a very low perception that training for staff has facilitated the application of e-governance. This suggests that there is a significant gap in providing adequate training to municipal staff on the usage and implementation of e-governance tools. Municipal Policies Enhanced Adoption of E-Governance Services (Mean: 1.9): A mean of 1.9 reflects a somewhat negative perception that municipal policies are helping to drive the adoption of e-governance services. Respondents may feel that the policies in place are insufficient or not conducive to encouraging greater adoption of e-governance services.

The analysis indicates that while facilitating conditions such as IT infrastructure and the standardization of services are generally seen as positive factors in the application of e-governance, there are clear concerns regarding resource availability, accessibility, staff

training, and policy support. In particular, the lack of adequate staff training and the perception of weak municipal policies suggest areas that need urgent attention to ensure the effective application and broader adoption of e-governance services. Improving these areas could help further enhance the overall success of e-governance in Dhangadi Sub Metropolitan City.

5.4 Analysis of Findings from Qualitative Data

As discussed in the methodology chapter, the researcher conducted three key informant interviews (with the Mayor, Chief Administrative Officer, and IT Officer of Dhangadi Sub-Metropolitan City) to complement the quantitative data. The narrative analysis of the interview excerpts serves to supplement and triangulate the findings derived from the quantitative analysis. This integrated approach enhances the validity and depth of the research outcomes presented in the earlier sections.

5.4.1 Reflection from the Mayor

> *"E-governance has brought a visible transformation in how we deliver services to our citizens — processes are faster, more transparent, and public trust has increased. However, we are aware that without a strong strategic framework, adequate financial resources, and better coordination among agencies, our progress risks remaining fragmented. To truly realize the potential of digital governance, we must strengthen partnerships with the provincial government, private sector, and development organizations. We are politically committed to embedding e-governance into the core of our municipality's long-term development vision, but challenges like budget constraints and capacity gaps continue to slow our ambitions."*(Based on the personal communication, 23 January, 2025)

The Mayor’s reflections demonstrate a clear recognition of the strategic opportunities that e-governance provides in transforming municipal administration. The emphasis on transparency, service efficiency, and improved citizen trust aligns with established theories in digital governance, which argue that ICT (Information and Communication Technology) integration can enhance accountability and public service delivery (Heeks, 2006). The Mayor's acknowledgment of the municipality's efforts to digitize services, albeit constrained by financial and human resource limitations, indicates a policy orientation favoring modernization but reveals systemic gaps in full-scale implementation. The recognition of the need for external partnerships reflects a growing understanding that e-governance is a collaborative effort requiring multi-level and cross-sectoral engagement (United Nations E-Government Survey, 2022).

Despite optimism, the Mayor’s responses reveal latent challenges, particularly the political and institutional inertia that often hampers e-governance in developing contexts. His/Her recognition of the absence of a robust, long-term strategic framework for digital transformation points to a fundamental planning deficit. This insight is consistent with the notion that successful e-governance demands more than technological acquisition; it requires embedding digital priorities into governance structures (Ndou, 2004). The Mayor’s narrative, therefore, reflects both an aspirational vision and a pragmatic realization that without strengthening political will, capacity-building, and sustainable financing mechanisms, the full potential of e-governance in Dhangadi may remain unrealized.

5.4.2 Reflection from the Chief Administrative Officer (CAO)

> *"E-governance has certainly improved administrative efficiency by digitizing key services and reducing bureaucratic delays. Yet, from an operational perspective, we encounter persistent challenges, especially regarding staff readiness, technological*

> *adaptation, and the integration of different digital platforms. While we recognize the importance of digital transformation, the absence of continuous capacity-building programs and limited infrastructural investment hampers full implementation. For e-governance to be sustainable, we need stronger institutional frameworks, clear policy directives, and a culture that embraces innovation at all levels of the municipality".* (Based on the personal communication, 22 January, 2025)

The CAO's reflections provide a critical administrative perspective, emphasizing the operational realities that hinder the effective functioning of e-governance. His/Her focus on issues like staff resistance to technological change, inadequate digital literacy, and procedural inefficiencies reflects systemic organizational barriers to reform. The challenges described are supported by empirical studies that highlight how bureaucratic inertia, lack of training, and unclear standard operating procedures act as bottlenecks for successful e-governance adoption (Gil-García & Helbig, 2006). The CAO's account suggests that while infrastructural investment is necessary, administrative culture and employee mindset play an equally crucial role in determining the success of digital reforms.

The CAO's emphasis on budgetary limitations and fragmented digital initiatives further reveals that e-governance implementation is often reactive rather than strategically proactive. The absence of a comprehensive capacity development program for municipal employees indicates that human capital development has not been prioritized in tandem with technological upgrades. This reinforces the "socio-technical" perspective in e-governance research, which posits that technology must be co-evolved with social systems for effectiveness (Luna-Reyes et al., 2005). Overall, the CAO's insights underscore that without systematic institutional reform, Dhangadi's e-governance efforts may result in isolated successes rather than integrated, sustainable transformation.

5.4.3 Reflection from the IT Officer

> *"From a technical standpoint, we have made notable progress in introducing basic digital systems and online services for citizens. However, many of our digital initiatives are still at a foundational stage due to budget limitations, outdated infrastructure, and a shortage of skilled personnel. There is growing enthusiasm among staff for e-governance, but without sustained technical support and regular system upgrades, it is difficult to maintain service quality. If we aim for true digital transformation, a more robust IT strategy, better resource mobilization, and continuous technical training are essential."* (Based on the personal communication, 23 January, 2025)

The IT Officer's reflection focuses acutely on the technical and infrastructural dimensions of e-governance, offering detailed evidence of underinvestment and technological obsolescence. His/Her mention of outdated hardware, limited software interoperability, and cybersecurity vulnerabilities corresponds with common ICT challenges in municipal settings, especially in South Asian contexts (Bhatnagar, 2004). This technical narrative stresses that despite political and administrative willingness, without robust and updated digital infrastructure, municipalities cannot realize the full benefits of e-governance. The IT Officer's concerns also point toward a lack of strategic IT planning, highlighting the importance of continuous technological modernization as a critical success factor.

Beyond technical constraints, the IT Officer's narrative also highlights the human resource dimension of technological underperformance. His/Her observations about employees' low digital literacy levels and the insufficiency of training programs illustrate a significant institutional gap between technology deployment and technology utilization. This reflection supports the argument that digital transformation in governance is not merely a technical

project but a socio-technical transformation (Anthopoulos, 2017). Moreover, the IT Officer's cautious optimism suggests that with proper investments in capacity-building and technological upgrading, Dhangadi Municipality could overcome current limitations and move toward more integrated, citizen-centered digital governance.

5.4.4 Synthesis of Reflections

The synthesis of reflections across the Mayor, Chief Administrative Officer, and IT Officer interviews reveals a shared recognition of the transformative potential of e-governance in Dhangadi Municipality. All three participants emphasized that digital systems have significantly contributed to enhancing administrative efficiency, transparency, and citizen satisfaction. However, their narratives consistently pointed to critical limitations in strategic planning, inter-agency coordination, and infrastructural investment. There was a clear consensus that while initial progress had been achieved, the municipality's digital initiatives remain fragmented and insufficiently integrated into a broader long-term development framework.

Furthermore, the reflections collectively underscore that the sustainability of e-governance in Dhangadi hinges on several interrelated factors: stronger political commitment, systematic capacity-building efforts for municipal staff, proactive resource mobilization, and continuous technological upgrading. Operational challenges such as limited human resource capacities, outdated IT infrastructure, and inadequate technical training were highlighted as persistent barriers. The interviews suggest that without addressing these foundational gaps, the municipality's vision for comprehensive digital governance will remain constrained, despite the evident enthusiasm and political will for reform.

5.5 Chapter Summary

This chapter presents the findings related to the challenges and issues associated with the implementation of e-governance in the municipality, focusing on various policy priorities, budget allocations, divisions, and service delivery.

(1) **Policy Priority and Budget Allocation**: Respondents expressed concerns regarding the policy priority and budget allocation for e-governance. The mean value of 1.4 for the policy priority in the municipal annual plan suggests that a majority of respondents feel the municipality does not give adequate priority to e-governance in its plans. Similarly, a mean value of 1.8 indicates that respondents believe the municipality's budget allocation for e-governance activities, particularly hardware components, is insufficient. For e-governance reflected in the Municipal Periodic Plan and the MTEF, the mean values of 1.2 suggest that these areas also face challenges in prioritization. Additionally, the support of stakeholders and development partners in e-governance and ICT was found to be lacking, as indicated by similar low mean values.

(2) **Municipal Divisions and E-Governance:** The respondents were asked about the effectiveness of various municipal divisions in implementing e-governance. For the General Administration Division, with a mean value of 2.2, most respondents expressed dissatisfaction. In contrast, the Urban Infrastructure Division received a higher mean value of 3, indicating a more positive response. The Education and Health Division received a mean value of 3, suggesting that respondents perceived it as effective in utilizing e-governance for service delivery. However, the Social Development Division had a mean value of 2.8, indicating mixed opinions, while the Fiscal Management Division was rated poorly with a mean value of 3. Conversely, the Economic Development Division was rated highly with a mean value of 3.4,

signifying a more successful integration of e-governance initiatives. The Environment Division had a mean value of 3.1, reflecting positive feedback, whereas the Foreign/PPP/Intergovernmental Division received a mean value of 2.9, indicating a less favorable perception of its role in e-governance.

(3) **Service Delivery and Satisfaction:** Respondents largely reported positive impacts of e-governance on service delivery. A mean value of 3.6 suggests that the municipality has made significant strides in supporting efficient service delivery. The enhanced satisfaction with service delivery, with a mean value of 3.4, further supports this view. E-governance initiatives were also seen as saving time (mean value 3.6) and improving the efficiency (mean value 3.2) and cost-effectiveness (mean value 3.2) of service delivery. However, respondents were less optimistic about the enhancement of service quality, which was rated at a mean value of 2.6, suggesting room for improvement in this area.

(4) **Challenges in E-Governance Implementation:** While there was a generally positive outlook on the potential of e-governance, some respondents expressed concerns. The mean value of 2.2 indicated that the use of e-governance is not perceived as frustrating by most respondents, though some challenges remain. Additionally, the mean value of 3.6 suggests that colleagues expect better service through e-government, indicating the growing demand for effective e-governance solutions. The mean value of 3.3 indicated that respondents felt their colleagues expected them to use e-governance efficiently. The importance of e-governance in improving service delivery was confirmed with a high mean value of 4.4, highlighting its essential role in the municipal context.

(5) **IT Infrastructure and E-Governance Access:** The municipality's IT infrastructure was perceived positively, with a mean value of 4.0 indicating adequacy for supporting

e-governance applications. Furthermore, respondents agreed that IT infrastructure facilitated faster service delivery (mean value 3.2). However, challenges persist regarding access to e-governance services on different ICT platforms, as shown by a mean value of 2.3, signaling barriers in accessibility. On a more positive note, e-governance was recognized as enhancing accountability in service delivery, with a mean value of 3.6.

In conclusion, while e-governance in the municipality has brought about improvements in service delivery, time savings, and efficiency, several challenges persist, particularly in policy prioritization, budget allocation, and access to services. The findings suggest that more focus is needed on improving the integration of e-governance in municipal divisions, enhancing service quality, and addressing infrastructure and accessibility issues to ensure the effective use of e-governance.

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CHAPTER SIX
SUMMARY AND CONCLUSION

6.1 Summary of the Key Findings

This section offers summary of this dissertation from the perspectives of opportunities and challenges in e-governance implementation in Dhangadi Sub-Metropolitan City. As a methodological cut-off point, this research considers empirical and policy developments from September 2015 (2072 B.S.), corresponding to the promulgation of Nepal's new constitution establishing a federal system, up to December 2024 (2081 B.S.), the period of data collection.

Opportunities in E-Governance Implementation (first objective)

(1) **Improved IT Infrastructure**: The municipality has adequate IT infrastructure, facilitating the application of e-governance tools. (Mean value: 4.0)

(2) **Faster Service Delivery**: IT infrastructure has enabled quicker delivery of e-government services. (Mean value: 3.2)

(3) **Enhanced Accountability**: E-governance has improved transparency and accountability in municipal service delivery. (Mean value: 3.6)

(4) **Functional Digital Services**: Some key digital services, such as revenue/tax collection (Mean: 3.8), planning (Mean: 3.4), ward-level accounting (Mean: 3.6), and e-procurement (Mean: 4.0), are operational.

(5) **Backup and Maintenance Systems**: Respondents reported satisfaction with computer maintenance and support systems (Mean: 3.4) and the backup system (Mean: 3.3).

(6) **Web Search and Downloadable Forms**: These features have been positively received by respondents (Mean values: 4.5 and 4.7, respectively).

(7) **Economic Development Potential**: The Economic Development Division is perceived as functioning well (Mean: 3.4), indicating potential for leveraging e-governance for economic growth.

(8) **Citizen Access to Government Services**: Digital services have improved public access to government services. (Mean value: 3.6)

Challenges in E-Governance Implementation (second objective)

(1) **Lack of Digital Record Management**: The digitization of paper records is insufficient, with respondents rating it poorly (Mean: 1.2).

(2) **Limited E-Governance Training**: Municipal staff have not received sufficient training on e-governance, either internally or externally. (Mean value: 1.0)

(3) **Absence of Exposure Visits**: There is no exposure visit program for staff to learn from other municipalities' e-governance models. (Mean value: 1.0)

(4) **Stakeholder and Development Partner Support**: Support from stakeholders and development partners for e-governance initiatives is lacking. (Mean value: 1.2)

(5) **Low Policy Priority**: E-governance is not well integrated into municipal annual plans (Mean: 1.4) or periodic plans (Mean: 1.2).

(6) **Insufficient Budget Allocation**: Limited financial resources are allocated for both hardware (Mean: 1.8) and capacity development (Mean: 1.4).

(7) **Inadequate Digital Public Communication Tools**: The municipality lacks essential digital notice boards, auto-notice systems, and digital displays. (Mean values: 1.0 to 1.8)

(8) **Limited Social Development Initiatives**: The Social Development Division is rated poorly in terms of e-governance integration. (Mean value: 2.8)

(9) **Challenges in Corruption Reduction**: E-governance has not significantly reduced corruption in municipal service delivery. (Mean value: 2.2)

(10) **Limited Performance Enhancement**: The perceived impact of e-governance on municipal performance remains low. (Mean value: 2.4)

(11) **Restricted Access across ICT Platforms**: E-governance services are not fully accessible across various ICT forums. (Mean value: 2.3)

The synthesis of reflections from the Mayor, Chief Administrative Officer, and IT Officer interviews highlights a shared acknowledgment of e-governance's transformative role in enhancing administrative efficiency, transparency, and citizen satisfaction in Dhangadi Municipality. While recognizing notable progress, all informants emphasized persistent challenges, particularly the lack of strategic integration, weak inter-agency coordination, and insufficient infrastructural investment. The sustainability of e-governance initiatives is seen as contingent upon stronger political commitment, systematic capacity building, effective resource mobilization, and continuous technological modernization. Despite the municipality's evident enthusiasm for digital reform, the narratives reveal that without addressing foundational barriers such as limited technical capacities and outdated IT systems, the broader vision for integrated and sustainable e-governance will remain significantly constrained.

6.2 Discussion of Research Findings

The findings of this study indicate both opportunities and challenges in the implementation of e-governance in Dhangadi Sub-Metropolitan City. On the positive side, e-governance services such as revenue and tax collection, online municipal planning, ward-level accounting, and e-procurement systems have been successfully implemented, with respondents expressing satisfaction regarding these services. The availability of IT

infrastructure was also highlighted as a strength, with a mean value of 4.0 indicating that the municipality has adequate digital resources for e-governance application. These findings align with the broader literature on e-governance in developing countries, where successful implementation often depends on infrastructure readiness and policy prioritization (Heeks, 2002; Rana et al., 2019). Additionally, the study suggests that IT infrastructure has improved communication and service delivery efficiency within the municipality, corroborating prior research that emphasizes the role of digitalization in enhancing government responsiveness (Bwalya & Mutula, 2016).

However, several challenges hinder the full realization of e-governance potential in Dhangadi. A critical concern is the lack of digital literacy and training among municipal staff, as evidenced by the mean value of 1.0 indicating the absence of e-governance-related training within the last year. Similarly, exposure visits to other municipalities for knowledge exchange have been virtually non-existent. This reflects a broader challenge in developing nations where insufficient human resource capacity remains a major barrier to digital governance (UNESCAP, 2020). Furthermore, the research reveals a lack of stakeholder and development partner support, with a mean value of 1.2 suggesting that external actors have not significantly contributed to e-governance expansion. This is consistent with findings from previous studies emphasizing that multi-stakeholder collaboration is essential for the sustainable implementation of e-government initiatives (Ndou, 2004).

Another critical limitation is the inadequate budget allocation for e-governance initiatives, particularly in software development and system upgrades. The mean values of 1.4 and 1.8 indicate that funding for both hardware and software components remains insufficient, limiting the municipality's ability to enhance digital services. Prior research has established that financial constraints are a recurrent challenge in e-governance adoption, particularly in

local government settings where competing priorities often divert funds from digital transformation initiatives (Gupta et al., 2020). Additionally, policy prioritization in the municipal annual plan was found to be weak, as reflected in the mean value of 1.4, indicating a lack of long-term strategic commitment to e-governance. These findings reinforce the argument that effective e-governance requires clear policy direction, strong financial investment, and sustainable planning (OECD, 2018).

Despite these challenges, the findings highlight the potential for e-governance to enhance municipal accountability and transparency. While issues such as corruption reduction and performance enhancement scored lower, respondents acknowledged improvements in service accessibility, accountability, and efficiency. The mean value of 3.6 for service accessibility and e-governance accountability suggests that digital governance has started to positively impact administrative transparency. This aligns with global evidence that e-governance can lead to increased citizen participation, reduced bureaucratic inefficiencies, and greater institutional accountability (World Bank, 2021). Moving forward, it is imperative that Dhangadi Sub-Metropolitan City addresses these challenges by prioritizing capacity-building programs, increasing budgetary allocations, and fostering collaboration with development partners to strengthen its digital governance framework.

6.3 Conclusion of the Dissertation

This study highlights both the advancements and persistent gaps in e-governance implementation within Dhangadi Sub-Metropolitan City. While the municipality has made progress in integrating digital systems such as Municipal Accounting (SUTRA), Social Security, and E-Procurement, several critical areas remain underdeveloped. The findings suggest that while IT infrastructure has facilitated faster service delivery, accessibility issues and inadequate digital engagement tools hinder broader adoption. Moreover, despite the

presence of key systems, certain essential components such as office automation, social mobilization, and disaster-related digital services remain largely absent, reflecting an incomplete transition to e-governance.

The analysis of municipal employees' perceptions further underscores these challenges. A majority of respondents reported a positive outlook regarding their use of computers in official tasks (mean value 3.6) and the maintenance and backup of IT infrastructure. However, dissatisfaction was evident in areas such as digital information availability, live-streaming of local events, and the digitization of municipal records. Additionally, policy prioritization for e-governance remains weak, with budget allocations for technological advancements being insufficient. This indicates that while technical capacities exist, the broader institutional framework necessary for sustaining digital governance is lacking.

The findings also align with broader trends in Nepal’s e-governance landscape, where government initiatives have often been confined to pilot projects rather than comprehensive, fully functional systems. Despite policy-level emphasis on ICT development, implementation at the municipal level remains fragmented, with most e-governance portals providing only static information rather than interactive, service-oriented platforms. This disconnect highlights the need for a more strategic and holistic approach to digital governance, ensuring that technological integration translates into tangible service improvements.

Moving forward, addressing these challenges will require a multi-faceted approach, including enhanced policy prioritization, increased budgetary allocations, and targeted capacity-building initiatives. Strengthening stakeholder collaboration and fostering public engagement through digital platforms will be essential for realizing the full potential of e-governance. As Nepal progresses in its digital transformation, ensuring the sustainability and inclusivity of e-

governance in local municipalities will be crucial in bridging the existing gaps and promoting effective, citizen-centric governance.

6.4 Contribution of this Study

Status and application of E-Governance in Nepal (A Case Study of Dhangadi Sub-metropolitan City) is a representative vision of the reality. Main thrust of the present study is to explore the application of e-governance tools by municipal employees, to assess the e-government policy initiatives by Dhangadi Sub Metropolitan City and to analyze the perception of municipal employees for application of e-government services.

The Government of Nepal has already committed to establishing e-governments across the country, aiming to provide citizens with high-speed internet connectivity and access to internet-enabled devices, such as those used for e-governance. To achieve this, it is expected that every smart government will be equipped with the necessary IT infrastructure.

The implementation of e-governance technology in Dhangadi Sub Metropolitan City will offer significant benefits to both the citizens and the government. In this regard, the researcher has made a comprehensive effort to identify key factors that contribute to the successful and effective implementation of e-governance policies, focusing on the benefits that can be extended to the citizens of Dhangadi Sub Metropolitan City. This study analyzes how factors such as Perceived Information Quality (PIQ), Perceived System Quality (PSQ), and Perceived Service Quality (PESQ) impact the outcomes of e-governance policy implementation in the city.

The study aims to provide valuable insights to government authorities, highlighting the need for improvements in information, service, and system quality to encourage users to embrace innovative technologies like e-governance. By enhancing these aspects, it is expected that this study will help increase the adoption rate of e-governance among the citizens of Dhangadi

Sub Metropolitan City. As a result of greater adoption, the overall financial health of the municipality could improve, leading to more efficient and effective public service delivery.

Dhangadi Sub Metropolitan City government would improve a long with sustainable growth. Thus, improvement of financial health of Nepal will be effectively achieved if, with others, the full benefits of the E-governance technology can be extracted and this depends inflaming appropriate policy. Also, success of E-governance in Dhangadi Sub Metropolitan City depends on the combination of success of E-governance policy in Nepal.

6.5 Future Research Prospects

This study focuses on exploring the application of e-governance tools by municipal employees, assessing the e-government policy initiatives by Dhangadi Sub Metropolitan City, and analyzing the perceptions of municipal employees regarding the use of e-government services. However, the technological aspects of e-governance implementation in Nepal remain an area for future research. Amidst this, this study presents several opportunities for future research. One possibility is the development of a simplified model based on insights from this study to explain variations in the success of e-governance implementation.

Another avenue for future research involves validating the impact of each variable and assessing the predictive capability of e-governance outcomes using experimental research methodologies. Future studies could also expand upon the theoretical model proposed here by incorporating other project-related factors that influence e-governance implementation.

Moreover, the findings of this study could be further validated by testing theoretical models with different samples and larger sample sizes. Future researchers should also explore whether the status and application of e-governance can be influenced by specific factors within municipalities. It may be possible that the factors identified in this study mediate the

outcomes of e-governance implementation. Identifying such mediating variables and testing the strength of their influence could significantly enhance our understanding of how these factors affect e-governance implementation.

6.6 Areas for Improvement in Policy and Practice

- *Focus on Improving Information and System Quality:* Dhangadi Sub Metropolitan City should prioritize enhancing both the quality of the information provided through its e-governance systems and the overall quality of the systems themselves. A focus on improving system reliability, accuracy, and user experience will increase the success of the information systems. As a result, this will encourage more users to adopt e-governance services, contributing to greater success in the municipality's e-governance initiatives.
- *Raising Awareness Among Potential Users:* It is crucial to educate potential users about the benefits of e-governance technology. Citizens should be informed that the use of e-governance will generate large volumes of data, which, when analyzed using advanced technologies like Artificial Intelligence (AI), can lead to better and more accurate decisions. These data-driven decisions will ultimately benefit the residents of Dhangadi Sub Metropolitan City by improving government services and efficiency.
- *Encouraging Citizen Engagement in Data Generation:* The generation of data through e-governance platforms and ICT-enabled devices is key to improving municipal services. By motivating citizens to actively engage with e-governance technology, the city can gather valuable insights that will help create a more efficient and responsive government system. As citizens contribute to data generation, they will become more involved in the technological aspects of governance, making them more informed and "smarter" in their interactions with the government.

- *Addressing Citizens' Needs through Technology:* The government needs to improve its technological development efforts, paying close attention to the diverse needs of citizens. This includes improving citizens' lifestyles, work styles, and overall expectations of government services. By focusing on meeting these needs, the municipality can build trust among the citizens, which will increase their confidence in using e-governance platforms. When citizens see that the system and services are of high quality, they will be more likely to embrace the technology. Additionally, enhancing perceived information quality (PIQ) will significantly impact users' intention to use e-governance and their overall satisfaction with the services provided.

In summary, Dhangadi Sub Metropolitan City must improve the quality of both its information and systems, raise awareness of the advantages of e-governance, encourage citizens to actively participate in the data generation process, and develop technology that aligns with citizens' needs. By doing so, the city can enhance citizens' confidence in e-governance, leading to a higher rate of adoption and overall success in the system's implementation.

References

Adhikari, G. P. (2017). *Key issues in implementing e-Governance in Nepal*. ACM International Conference 243-245. New York: ACM.

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.

Akpan-Obong, P.I.; Trinh, M.P.; Ayo, C.K. & Oni, A.(2022). E-Governance as good governance? Evidence from 15 West African countries. *Inf. Technol. Dev.*, *13*(5), 1–20.

Balaban-Sali, J. (2012). New Media Literacies of Communication Students. Contemporary Educational Technology, 3(4), 265-277.

Balaban-Sali, J. (2012). New Media Literacies of Communication Students. Contemporary Educational Technology, 3(4), 265-277.

Bokhari, S.A.A. & Myeong, S. (2022). Artificial intelligence-based technological-oriented knowledge management, innovation and E-Service delivery in smart cities: Moderating role of E-Governance. *Appl. Sci.*, *12*(3), 8732.

Buckley, J. (2013). E-Service quality and public sector. *Managing Service Quality*, 8*(4)*, 453-462.

Bwalya, K. J., & Mutula, S. M. (2016). *E-Government: Implementation, Adoption and Synthesis in Developing Countries*. CRC Press.

Chandio, A.R.; Chandio, A.R.; Haider, Z.; Ahmed, S.; Ali, M. & Ameen, I. **(**2018). E–government in Pakistan: Framework of opportunities and challenges. *Gsj*. *6*(2), 106-119.

Dubnick, M.J. & Frederickson, H. (2014). *Accountable Governance: Problems and Promises*; Routledge: London, UK,

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.

Gürlek, M. (2020). Shedding light on the relationships between Machiavellianism, career ambition, and unethical behavior intention. *Ethic-Behav. 31*(4), 38–59.

Han, Y. & Hong, S. (2019). The Impact of accountability on organizational performance in the U.S. Federal Government: The moderating role of autonomy. *Rev. Public Pers. Adm. 39*(1), 3–23.

Hauer, T. (2017). Technological determinism and new media. International Journal of English, Literature and Social Science (IJELSS), 2(2), 1-4.

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

Hussin, A. A. (2018). Education 4.0 Made Simple: Ideas For Teaching. Education 4.0 Made Simple: Ideas For Teaching, 6(3), 92-98.

Jameel, A.; Asif, M. & Hussain, A. (2019). Good governance and public trust: assessing the mediating effect of E-Government in Pakistan. *Lex localis-J. Local Self-Gov. 17*(2), 299–320.

Jawadekar, W. S. (2019), Management information systems New Delhi: Tata McGraw-Hill.

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

Kolev, K. and Wangrow, D.B. (2022). Public value of E-Government. *Gov. Inf.. 3*(2), 17–35.

Kothari, R.C. (2004). *Research methodology: Methods and techniques.* New Delhi: Wiley Eastern Limited.

Mardiana, H. and Daniels, H. K. (2018).Technological Determinism, New Literacies and Learning Process and The Impact Towards Future Learning. *Journal of Educational Science and Technology (EST)*. Vol. 5(3), pp. 219-229.

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.

Navío-Marco, J. (2019). Thoughts on e-government. *Journal of Educational Science and Technology*. 9(3), 19-39.

Ndou, V. (2004). E-Government for developing countries: Opportunities and challenges. *The Electronic Journal of Information Systems in Developing Countries*, *18*(1), 1-24.

OECD. (2018). *Digital Government Review: Enhancing the Digital Transformation of Public Sectors*. OECD Publishing.

Rana, N. P., Dwivedi, Y. K., & Williams, M. D. (2019). Evaluating the validity of IS success models for e-government research. *Information Systems Frontiers*, *21*(3), 559-578.

Robert J. T. (2018), Decision support system for effective planning and control, Englewood Cliffs: Prentice-Hall

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.

Shields, H. (2009). E–government: Framework of opportunities and challenges. *Gsj*. *2*(1), 77-93.

Shrestha, L. (2015). E-Governance as good governance? *Inf. Technol. Dev.*, *3*(2), 19–38.

Subramaniam, N., & Mia, L. (2018). The relation between decentralized structure, budgetary participation and organizational commitment. *Accounting, Auditing and Accountability Journal*, *7*(2) 12-29.

Sukla, D. (2015). Modernizing Bureaucracy through E-Governance in Nepal. *Global Blues and Sustainable Development.* Florida: Florida University.

Tofail, A, Muhammad, A., Zaheer, A., Kamoliddin, M. Murodjon, U.&Syed, A. A. B. (2023). Impact of E-Government initiatives to combat corruption mediating by behavioral intention: A Quantitative analysis from emerging economies, *Sustainability* 15(3), 2694; https://doi.org/10.3390/su15032694

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.

Veblen, T. (2013). The Theory of the Leisure Class: An Economic Study in the Evolution of Institutions pp. 77-87. The USA: Macmillan.

Wangrow, D.B.; Kolev, K. & Hughes-Morgan, M. (2019). Not all responses are the same: How CEO cognitions impact strategy when performance falls below aspirations. *J. Gen. Manag.* *44*(2), 73–86.

Wikhamn, W & Hall, A.T. (2014). Accountability and satisfaction: Organizational support as a moderator. *J. Manag. Psychol.* *29*(3), 458–471.

World Bank. (2021). *Digital Government Readiness Assessment: A Toolkit for Developing Countries*. World Bank Publications.

Appendix I

Rapid Questionnaire for Survey

Challenges and Opportunities of E-governance in Dhangadi Sub-Metropolitan City

Section I: Personal Information

Name:

Age:

Gender:

Working Area:

Employment History:

Address (Permanent):

Address (Temporary):

Education Qualification:

Section I: Thematic Questions

Objective 1: *To examine the opportunities provided by e-governance in enhancing the efficiency and effectiveness of municipal administration and staff in Dhangadhi.*

(1) **To what extent do you agree that e-governance has improved the efficiency of municipal service delivery?**

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

(2) **Which of the following benefits have you observed due to the implementation of e-governance in the municipality? (Select all that apply)**

- Faster service processing

- o Improved transparency
- o Increased citizen satisfaction
- o Reduced administrative errors
- o Better communication between departments
- o None of the above

(3) **How much time reduction has been observed in administrative tasks due to e-governance?**

- o 0-10%
- o 11-30%
- o 31-50%
- o 51% or more
- o No time reduction

(4) **On a scale from 1 to 5, how effective do you find e-governance in improving citizen access to municipal services? (1 = Very ineffective, 5 = Very effective)**

- o 1
- o 2
- o 3
- o 4
- o 5

(5) **How frequently do you use digital systems to process citizen requests or services?**

- o Daily
- o Weekly
- o Monthly
- o Rarely
- o Never

(6) **Which of the following areas do you think has benefited the most from the implementation of e-governance? (Select one)**

- o Citizen services
- o Internal communication
- o Financial management
- o Data storage and access
- o Public transparency

(7) **To what extent has e-governance improved the overall efficiency of the municipality's administrative functions?**

- o Very significantly
- o Moderately
- o Slightly
- o Not at all

Objective 2: *To analyze the perceptions of municipal employees regarding the challenges associated with the implementation of e-governance services in Dhangadhi.*

(8) **Which of the following challenges do you perceive as the most significant in the implementation of e-governance in the municipality? (Select up to two)**

- o Lack of sufficient IT infrastructure
- o Insufficient technical training for staff
- o Inadequate budget allocation
- o Resistance from staff
- o Poor inter-agency coordination
- o Outdated software/hardware

(9) **On a scale from 1 to 5, how satisfied are you with the technical training provided to municipal staff for e-governance? (1 = Very dissatisfied, 5 = Very satisfied)**

- 1
- 2
- 3
- 4
- 5

(10) **What type of IT infrastructure is most needed to improve the implementation of e-governance in Dhangadhi? (Select one)**

- Upgraded hardware (computers, servers)
- Advanced software systems
- Improved internet connectivity
- Enhanced data security tools
- Other (please specify)

(11) **Do you believe there is adequate political support for the advancement of e-governance in the municipality?**

- Yes, very adequate
- Yes, somewhat adequate
- No, not adequate
- No, not at all

(12) **Which of the following resources do you think should be prioritized for enhancing e-governance? (Select all that apply)**

- Financial resources
- Human resources (trained staff)
- Technology resources (software/hardware)
- Strategic planning and coordination
- External partnerships (e.g., private sector, NGOs)

(13) **Do you feel that municipal staff resistance is a major barrier to implementing e-governance?**

- o Strongly agree
- o Agree
- o Neutral
- o Disagree
- o Strongly disagree

(14) **To what extent do you agree that outdated IT infrastructure impedes the progress of e-governance?**

- o Strongly agree
- o Agree
- o Neutral
- o Disagree
- o Strongly disagree

Objective 3: *To explore the perceptions of municipal executives about the existing and potential strategies for improving e-governance in Dhangadhi's municipal governance.*

(15) **In your opinion, which of the following strategies is most critical for improving e-governance in Dhangadhi? (Select one)**

- o Increased political commitment and leadership
- o Investment in staff capacity-building
- o Better resource mobilization (financial, human)
- o Upgrading technological infrastructure
- o Improved inter-agency coordination
- o

(16) **On a scale of 1 to 5, how would you rate the municipality's political commitment to advancing e-governance? (1 = Very poor, 5 = Very good)**

- o 1
- o 2
- o 3
- o 4
- o 5

(17) **To what extent do you think external partnerships (e.g., private sector, international agencies) can support the municipality's e-governance efforts?**

- o Very significantly
- o Moderately
- o Slightly
- o Not at all

(18) **How often do you think capacity-building programs for municipal staff are necessary for the success of e-governance?**

- o Very frequently (e.g., annually)
- o Occasionally (e.g., every few years)
- o Rarely
- o Never

(19) **Which aspect of e-governance do you think requires the most immediate improvement in Dhangadhi? (Select one)**

- o Service delivery to citizens
- o Internal administrative processes
- o Communication and collaboration between departments
- o Technological infrastructure

- Budget allocation for e-governance

(20) **Do you believe that a comprehensive, long-term strategy for e-governance is needed for sustained improvements in Dhangadhi Municipality?**

- Yes
- No
- Not sure

Appendix II

Questionnaire Checklist for the Interviews

(1) How do you perceive the current role of e-governance in enhancing the efficiency of municipal services in Dhangadi?

(2) What major improvements in service delivery and staff performance have been observed following the adoption of digital governance practices?

(3) From your leadership perspective, what are the major challenges that still hinder full e-governance implementation at the municipal level?

(4) What strategic plans or policies are currently in place, or envisioned, to further expand e-governance capabilities in Dhangadi?

(5) How do you assess the municipality's capacity (in terms of human resources, technology, and finance) to sustain and advance e-governance?

(6) In your view, what partnerships or collaborations (with provincial government, private sector, development partners) could be crucial in promoting e-governance in the future?

- How has the implementation of e-governance tools affected administrative processes and service delivery efficiency within the municipality?
- Could you describe how municipal staff have adapted to the changes brought by e-governance?
- What types of training or capacity development initiatives have been provided to municipal employees to facilitate digital governance?
- From an administrative viewpoint, what are the key technical, institutional, or human resource challenges encountered during e-governance implementation?
- How does the municipality handle resistance to technological change among staff, if any?

- In terms of budget and resource allocation, how are e-governance projects prioritized within the municipality?
- How would you describe the current status of e-governance infrastructure (hardware, software, network) in Dhangadi Municipality?
- From a technical standpoint, what are the primary challenges you face in implementing and maintaining e-governance services?
- How would you evaluate the level of digital literacy and readiness among municipal employees?
- Are there adequate support systems (such as troubleshooting, training, cybersecurity) in place to ensure the smooth functioning of e-governance systems?
- What improvements in IT management or digital strategies do you think are necessary to enhance e-governance in the municipality?
- How do you perceive the municipality's commitment to investing in and upgrading technological infrastructure for future needs?