IMPLEMENTATION OF INTEGRATED E-GOVERNANCE METHODOLOGIES AND PRACTICES IN DEVELOPING ECONOMIES FOR EFFECTIVE GOVERNANCE AND PROJECT MANAGEMENT

by

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M.Com (Business Administration), M.C.A, M.A (Sociology)

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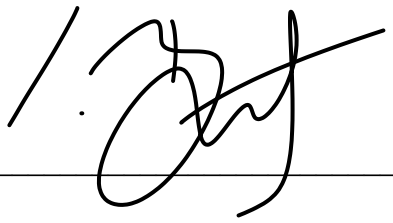

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Dedication

This is dedicated to my family, stakeholders, and senior officials of the

relevant ministries and departments, and mentor,

without whose help it would have been impossible.

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I want to express my heartfelt gratitude to my mentor, Dr. Sc. Luka Leško, for his guidance and advice in delivering this thesis. I would also like to thank my colleagues from the respective departments and Ministries who have contributed academically while encouraging and inspiring me throughout this research journey. The dedication and zeal, especially of my wife and family members, friends, academic advisors and various stakeholders, encouraged me to complete the task of a research paper on the subject as it would directly impact the masses and government revenue generation. The cooperation and time given by the department, citizens and various stakeholders during secondary and primary survey data collection and compilation, which involved interviews, surveys or collaboration with government agencies or other stakeholders, needs appreciation for their time, insights and cooperation in supporting the research objectives viz. e-governance and its implications for governance, democracy, and society. I express my sincere thanks to those who have aided, resources or feedback during the entire course of this research work, which included but was not restricted to academic institutions, funding agencies, research partners and technical support personnel who have helped to facilitate this task.

ABSTRACT

IMPLEMENTATION OF INTEGRATED E-GOVERNANCE METHODOLOGIES AND PRACTICES IN DEVELOPING ECONOMIES FOR EFFECTIVE GOVERNANCE AND PROJECT MANAGEMENT

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This study explores the adoption and implementation of e-governance in developing countries, where digital governance has the potential to enhance transparency, accountability, and citizen participation, while improving the efficiency and effectiveness of government services. Despite successes in developed nations, the implementation of e-governance in developing countries faces significant challenges, including infrastructural limitations, digital divides, bureaucratic resistance, and socio-cultural constraints.

While existing literature offers recommendations to address these challenges, a key issue remains the lack of an integrated e-governance structure and appropriate revenue models, which negatively impact adoption. This gap in research, particularly in the context of developing nations, has prompted this study to focus on integrated e-governance best practices and relevant revenue models. The study evaluates the current state of e-governance in developing countries, identifies the challenges, and proposes strategies for improvement using a mixed-methods approach, combining both qualitative and quantitative data.

It draws on stakeholder experiences and case studies to explore the implementation of integrated e-governance systems in developing economies. It identifies key components of successful e-governance approaches and assesses their effectiveness. The study finds that technological infrastructure, digital literacy, and institutional capacity are critical factors influencing the success of e-governance, while subjective attitudes and social norms play a significant role in shaping public engagement with digital platforms.

In conclusion, this study provides insights into the current state of e-governance in developing countries, identifying key challenges such as technological infrastructure, digital literacy, and institutional capacity. It highlights the critical role of attitudes and social norms in driving e-governance adoption, emphasizing the importance of fostering positive perceptions and social support, and recommends strategies to overcome these barriers, including targeted awareness campaigns, capacity-building initiatives, and stakeholder engagement activities. Additionally, it suggests revenue models like Public-Private Partnerships and taxation to enhance the financial sustainability of e-governance systems.

The findings not only offer practical recommendations for implementing integrated e-governance structures but also open new avenues for future research. Further studies are needed to explore how these strategies can be tailored to the specific governance ecosystems of other developing countries, considering their unique challenges and characteristics. This research paves the way for extending e-governance

practices to economically weaker areas, identifying region-specific strategies to address obstacles and improve implementation.

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INTRODUCTION

1.1 Introduction

Governance is a cornerstone of sustainable development, serving as the mechanism through which governments address societal challenges, deliver essential services, and manage resources effectively (World Bank, 2021). Effective governance ensures the equitable allocation of resources fosters social cohesion and facilitates the achievement of long-term development goals. It is a critical enabler for addressing global issues such as poverty, inequality, and environmental degradation while ensuring the provision of public goods like education, healthcare, and infrastructure.

However, the path to effective governance and ensuring that equal distribution is sought for the masses with equity is fraught with complexities. Traditional governance systems often struggle with inefficiencies that hinder their ability to deliver on their mandates. These inefficiencies manifest in various forms, including delays in decision-making and service delivery, a lack of transparency in administrative processes, and fragmented operations that reduce accountability and coordination (Kardos, 2012). Providing impactive and effective governance at a grassroots level is often associated with challenges such as lack of transparency, corruption, weak institutions, and lack of political will. Bureaucratic red tape slows the implementation of critical programs, while opaque procedures may erode public trust. Additionally, disjointed systems often result in

the duplication of efforts and misallocating resources, further exacerbating development challenges. These structural weaknesses undermine the capacity of governments to respond effectively to citizens' needs and adapt to the dynamic demands of sustainable development. These problems persist in all nations globally but are commonly seen in developing economies for several reasons, which can hinder their effectiveness and lead to negative outcomes for citizens, particularly where it's needed the most.

The governance systems in developing economies are trickled with inefficiencies, delays, and fragmented administrative processes. These challenges, compounded by socio-economic disparities and infrastructural limitations, hinder governments' ability to meet the growing demands of their populations (Bailey, 2024). Multiple efforts have been made to address these problems through a range of strategies, including strengthening institutions, improving transparency and accountability, and reducing corruption, which are largely inconclusive and inadequate.

Figure 1: Components of good governance

The urgency of addressing these inefficiencies spurred interest during the internet and digital boom in the 1990s raised an opportunity to explore digital mediums as a possible solution or a reinforcement to the traditional government practices to reduce the efforts in policy implementations on the ground and remove the caveats in the system, set the foundation stones for the principles behind digital governance. Initially driven by advancements in ICT and the internet, it aimed to enhance government efficiency, transparency, and service delivery. Over time, e-governance evolved from basic computerization of administrative functions to integrated platforms for public service delivery and citizen engagement.

Digital or E-government is generally considered an umbrella term that encapsulates all types of Information and Communication Technologies (ICT) utilized in the services-oriented sector that the government applies to provide and increase the efficiency of its services to the population. It encompasses tools and strategies to facilitate transparency, participation, and collaboration in governance processes.

The evolution of e-governance has been shaped by technological advancements and the global trend toward digitizing public administration systems (Madon, 2009; Prabhu, 2013). The utilization of digital services has helped improve the efficacy of the government infrastructure and its implementation has become one of the key priorities for governments globally to provide greater access to services while bringing more transparency in the socio-political realm. In the age of globalization, the world continues to rapidly transform into a unified society, driven by an outstanding increase in the amount of communication between regions, which has made ICT and Information

Technology (IT) pivotal players in strengthening the existing systems. Governments across the globe, whether it be at a central or a local level, have leveraged these tools by deploying critical information online, automating bulky processes and interacting electronically with their citizens. ICT has changed how citizens interact with their government, helping to lower costs and improve services while making operations more efficient at all levels, with significantly enhanced capabilities to collect, process, and distribute information through a wide array of data. Further, the development of analytical engines that help process massive or big data has made it possible to integrate and analyze a variety of information in a unidimensional spectrum.

The concept of e-governance emerged in the late 20th century as governments began to explore the potential of ICT for public administration. Early experiments were concentrated in developed nations, where internet proliferation and digital literacy were high. Countries like the United States, the United Kingdom, and Scandinavian nations were pioneers in leveraging technology for services such as e-tax filing, digital registries, and online communication with government departments (Obi, 2007).

The global expansion of e-governance gained momentum with the integration of e-democracy features, enabling citizens to participate in policymaking through online consultations and digital forums. By the early 2000s, global institutions like the United Nations and the World Bank advocated e-governance as a critical tool for sustainable development, emphasizing its role in improving transparency and accountability (Rossel & Finger, 2007).

While the developed countries pioneered and spearheaded the e-governance revolution, they paved the path for developing economies around the globe to adopt e-governance tools and mechanisms to address chronic and rampant inefficiencies in public administration, such as corruption, delays, red tape, and inadequate service delivery. The aim of bringing E-governance into practice in these regions was often to target specific challenges such as reducing corruption, enhancing service access in rural areas, and improving data management. However, its adoption was quite restrictive and comparatively slower due to limited digital infrastructure, low digital literacy, and economic constraints, which fizzled out support. However, the digital governance revolution regained momentum again in the 2000s with the dot-com boom, especially with support from international donors and technology partners, which made the lack of resources more accessible

The present e-governance strategies are further divided into four major classification groups based on the stakeholders involved and their application namely:

a) Government to Citizen (G2C)

The basic and most important classification of e-governance methodologies is G2C. G2C focuses on fulfilling the prime responsibility of government to offer services to all its citizens. A government-to-citizen interface is required to facilitate basic facilities such as proper education, healthcare, housing, utilities, and quality life. A single-window government solution could help achieve the citizen satisfaction required in E-Government.

b) Government to Government (G2G)

It focuses on intergovernmental communication and other aspects of government-to-government communication. The necessity of government-to-government functionalities is related to effective administration, intergovernmental control, and monitoring between two interstate or intrastate government entities.

c) Government to Business (G2B)

G2B focuses on creating bridges between the administration and the business and economic entities. Business organizations are vital in contributing substantially to national development, and it is instrumental for the government to cooperate with such organizations to develop an effective, accountable, and transparent business ecosystems by enforcing policies and standards for government transactions such as tender and contract management, enforcement, quality and taxation.

d) Government to Employee (G2E)

This is a subset of the G2G sector that focuses on internal administrative activities, especially in state-operated organizations such as Public Sector Undertakings (PSUs).

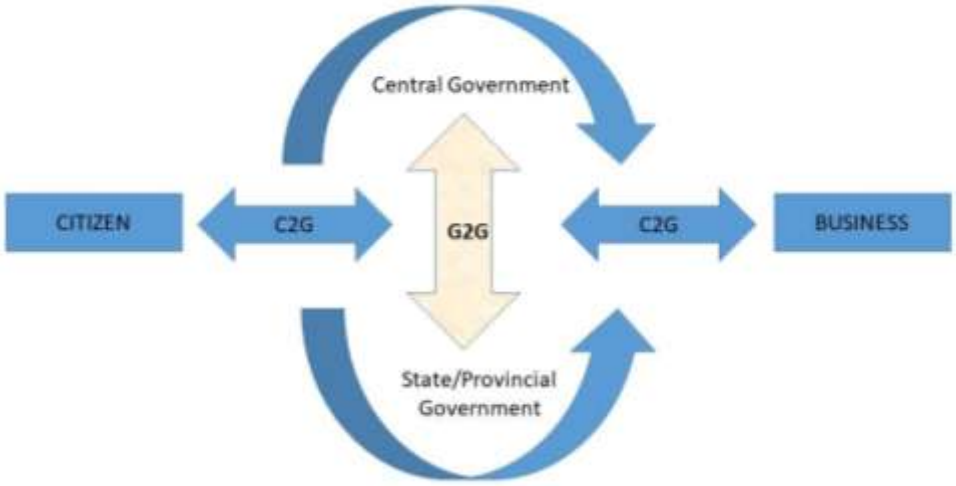

Figure 2: Interaction between the different e-governance typologies

E-governance has transformed public administration globally, offering a framework to enhance transparency, efficiency, and citizen engagement. For developing nations, the implementation of e-governance holds the potential to address critical developmental challenges, including corruption, service delivery inefficiencies, and socio-economic disparities. The integration of information and communication technologies (ICT) into governance structures can unlock numerous benefits for these regions, such as improved administrative efficiency, cost-effectiveness, and inclusive development (Basu, 2004; Bhuiyan, 2011).

E-governance systems reduce corruption by promoting transparency and accountability in public service delivery. Introducing automated processes and digital records minimize the need for intermediaries, curbing opportunities for unethical practices (Bhuiyan, 2011). For example, digital land records systems in India have

streamlined property transactions, significantly reducing fraudulent activities and enhancing public perception on the government machinery (Gupta et al., 2018).

Further, digitally enabled governance ensures faster and more reliable service delivery. Citizens access services such as licensing, tax filing, and welfare disbursements without physical barriers, saving time and resources (Heeks, 2001). This further results in cost savings by replacing manual processes with automated systems, minimizing administrative costs and paperwork, eliminating redundancies, and optimizing resource allocation, as seen in various public-sector reforms across Southeast Asia (Saxena, 2005).

More importantly, an E-governance structure facilitates the inclusion of marginalized groups by addressing barriers to service access, particularly in countries with more diverse demographics and non-homogenous distribution. This further enables citizens to utilise digital platforms for participatory governance and contribute to decision-making processes. Feedback mechanisms, online forums, and e-petitions enhance democratic engagement, fostering trust between governments and citizens.

Adopting e-governance also spurs economic growth by improving the ease of doing business and attracting foreign investment. Streamlined processes for business registration, tax compliance, and regulatory approvals reduce bureaucratic bottlenecks, fostering an conducive environment for entrepreneurship (Tripathi & Parihar, 2011).

Keeping in view the numerous benefits of e-government implementation, so it becomes inevitable for both developed and developing countries. Reaping these benefits, several countries, such as India and Brazil, established e-governance frameworks, leveraging ICT for social welfare programs, digital identification systems, and

agricultural extension services. India, for example, launched the National e-Governance Plan (NeGP) in 2006, which aimed to provide integrated online services to citizens, including e-taxation, e-transport, and digital land records management. Similarly, African nations-initiated programs to facilitate voter registration and agricultural support through mobile-based governance systems (de Jager & van Reijswoud, 2008). These initiatives demonstrated how e-governance could address developmental challenges and improve public sector accountability (Nair, 2009). Through the ages and with increased digitalization and accessibility, countries have increasingly embraced mobile and cloud-based technologies to overcome predominant connectivity barriers. Keeping in view the numerous benefits of e-government implementation, it has become one of the inevitable sectors of interest for developing countries- especially for countries within the Southeast Asian subcontinent like India, which possesses multiple channels of administration working parallelly catering to one of the biggest landmasses and a large and a much diverse demographic.

Integrated e-governance methodologies and practices can also prove highly effective in improving governance and project management in developing economies. Some of the examples of integrated e-governance methodologies and practices that have been piloted are Online Project Management Tools such as Asana, Trello or JIRA to help manage projects and ensure timely completion, E-voting to improve the transparency and accuracy of election results and to increase citizen participation in the democratic process, E-taxation systems to streamline tax collection and reduce the incidence of tax evasion, E-procurement systems to facilitate online bidding and procurement, which can

reduce corruption and increase efficiency, Online monitoring tools can be used to track government programs and projects in real-time, allowing for better project management and decision-making and Integrated Management Information Systems (MIS) to consolidate data from different departments and agencies, providing a more comprehensive view of government operations. Several efforts have been undertaken by developing economies to foster integrated e-governance practices. For example, the government of India implemented an e-procurement system to improve transparency and reduce corruption in government procurement. Similarly, the government of Kenya developed a mobile application called Huduma, which allows citizens to access government services, such as renewing driving licenses, paying taxes, and applying for government jobs and the government of Ethiopia implemented a GIS-based land administration system to improve land tenure security and to support sustainable land use management. However, despite its implementation, these applications often work independently and do not offer tangible benefits to the users specifically due to its lack of integration with other government mechanisms.

After decades of facing constraints in implementing policies effectively and strategically across the country, initiatives such as unique identification cards, also known as Unique AADHAR and Digital India, have placed India at the forefront of applying technology such as Artificial Intelligence (AI), Cloud Computing, Internet of Things (IoT), Blockchain and 5G for enabling e-governance practices to promote transparency, accountability, and effective nationwide development. However, it is critical to ensure

that these developments have the capabilities to exist and work collaboratively as a common interface in a single paradigm.

1.2 Research Problem

Despite the rising demands, growing literacy and accessibility to technology, the deployment of e-governance mechanisms exhibits unique challenges in e-governance implementation. While developed countries have successfully leveraged e-governance to streamline service delivery, the implementation in developing nations, particularly in South Asia, remains fraught with challenges, including infrastructural limitations, digital divides, bureaucratic resistance, and socio-cultural constraints. These challenges stem from socioeconomic disparities, infrastructure deficits, and institutional constraints (Verma & Kumari, 2010). For example, insufficient digital literacy and uneven internet penetration remain significant barriers in rural and underserved areas, hindering equitable access to e-governance services (Tennakoon, 2020). Challenges such as low digital literacy, limited infrastructure, and resistance to change have hindered the widespread adoption of e-governance in many developing regions (Piaggesi et al., 2011). Further, its implementation is still a hurdle due to widespread resistance and socio-economic issues in government organizations. In this regard, several studies have been conducted to determine the challenges to e-governance implementation, focusing on developing nations. A lack of robust ICT infrastructure, including low internet penetration and unreliable electricity, impedes the consistent delivery of e-governance services. Many rural areas remain disconnected from the digital grid, exacerbating the digital divide (Weerakkody et al., 2009). Limited funding for ICT infrastructure and training programs

affects the sustainability of e-governance projects. In countries like India and Sri Lanka, the high cost of implementing nationwide digital platforms has proven challenging (Karan, 2017). The risk of data breaches and cyberattacks discourages full-scale adoption of digital governance. Developing countries often lack robust cybersecurity frameworks to protect sensitive governmental and citizen data.

Bureaucratic resistance, outdated legal frameworks, and insufficient inter-departmental coordination create significant bottlenecks. For instance, rigid administrative procedures and undue political influence hinder the implementation of streamlined e-governance systems (Meiyanti et al., 2018). Most e-governance platforms seem to work independently, often contradicting each other's functionality. A lack of comprehensive and unified systems that could've ensured the effective delivery mechanism of government initiatives faster in the remotest region is pertinent.

One commonly observed challenge is the absence of a comprehensive framework integrating various e-governance practices. This further exacerbates the problem, making implementing and monitoring e-governance initiatives difficult. The absence of an extensive and integrated system often leads to a lack of commitment and ownership from government officials, inadequate training and capacity building for stakeholders, and a lack of trust from citizens, resulting in low adoption rates and limited impact of e-governance initiatives.

While technology has the potential to tackle these challenges, developing economies often lack the necessary infrastructure, resources, and expertise to leverage technology for governance purposes effectively. As a result, e-governance initiatives in

these economies often suffer from inadequate planning, poor implementation, and low adoption rates—a significant gap that needs to be addressed.

1.3 Purpose of Research

This highlights the need to explore and develop integrated e-governance methodologies and practices tailored to developing economies' specific needs and constraints. Such a framework would help these economies identify and implement the most effective e-governance methodologies and practices, enhance project management capabilities, and improve governance outcomes. However, forging such linkages and developing a system of interconnected e-governance platforms is foreseen as a challenge and remains a comparatively un-ventured territory.

This research recognises this gap and attempts to analyse the challenges in developing the framework for an integrated e-governance structure for developing countries, taking the context of the projects and administration based in developing economies. With the countries within the South Asian peninsula, such as India, continuously progressing and striving through rampant nationwide infrastructural development and weaving the pathways for mutual international cooperation through treaties and multilateral unions the observations of this research will serve to be instrumental in considering the caveats and opportunities an integrated system might offer- creating grounds for further study in other developing economies globally and making the delivery of schemes more effective, transparent and accountable.

1.4 Significance of the Study

This research aims to identify the current state of e-governance methodologies and practices in developing economies and their effectiveness in offering governance and project management benefits from an infrastructure point of view, which becomes the first part of the problem statement. The study will further examine the challenges faced in implementing these solutions and investigate the potential benefits of integrating e-governance methodologies in developing economies.

Culminating on the findings of the analysed data, this study will suggest potential frameworks for integrated e-governance methodologies and practices, offering critical insights and recommendations for policymakers and administrators on how to leverage integrated e-governance methodologies and practices better to enhance effective governance and project management in developing economies by adopting best practices.

The thesis would include a structural, systematic, and logical approach to implementing integrated e-governance activities for good governance and project management and will shed light on two main areas of concern: improving current government services and revenue generation.

1.5 Research Purpose and Questions

This study aims to evaluate the current state, identify challenges, and propose strategies for improvement, aligning with the core objectives of your research.

1. How to enhance e-governance effectiveness and project management efficiency in developing economies through the implementation of integrated e-governance methodologies and practices to have impact on masses?
2. How to enhance government revenue by adopting an effectiveness and project management efficiency in developing economies through the implementation of integrated e-governance methodologies and best practices ?

The study adopts a mixed approach (qualitative and quantitative) to reach its findings. The study initiates by collecting secondary data through a broad literature analysis to analyse the existing gap in information. The data collected, compiled and analysed by use of using secondary data/information available through national and international journals, manuals, reports, etc., will assist in developing the foundations for the research in terms of the current application of e-governance, its effectiveness, implementation and bottlenecks. The qualitative interviews with focus group discussions with the concerned officials from the department provide the wins and losses at national and international levels in developing countries. Based on the qualitative data, a quantitative survey would be designed as a questionnaire on challenges and will be designed as a questionnaire on challenges and the scope of improvements within the e-governance sector. The surveys will be conducted digitally for wider broader coverage by bringing in national and international stakeholders as respondents. The findings and recommendations on the responses from the respondents would further help in ease in its implementation in the field, and tested tools results ease its implementation in the field, and tested tools result in a higher probability for its acceptance in the masses.

CHAPTER II:

REVIEW OF LITERATURE

2.1 Introduction Theoretical Framework

This section establishes the foundation for this research by referencing pertinent literature relevant to e governance from a global and regional perspective and sets the stage for this study to achieve its objectives and identify the perceived challenges within the developing countries. The review will introduce the concepts of e-governance, current state, drivers, challenges, case studies, and potential strategies and trends identified globally and within the region in the literature.

E-governance has a wider meaning concerning the use of information and communication technologies (ICTs) to enhance the governance process and support the wider array of digital governance such as e-democracy, e-government, and e-business (Bannister & Connolly, 2011; Holmes, 2001; Okot-Uma & London, 2000). The definition of e-governance has changed over time to accommodate evolutionary changes in related fields and can be traced through several key phases, each building upon the previous and driven by technological advancements and changing societal needs (Bindu et al., 2019).

Grönlund & Horan (2005) traced the roots of e-governance to the 1960s and 1970s when governments began using computers for data processing and record-keeping. This period saw the initial computerization of government departments, primarily focusing on internal efficiency. This early phase saw the implementation of computer systems for tasks such as office automation, decision-making support, and service process

improvements (Heeks, 2005). E-governance boomed in the late 1990s and in the dawn of the millennium with the advent of the World Wide Web followed by the commercialization of the Internet, intending to provide ease of services for the citizens (G2C), government agencies (G2G), and Business (G2B) (Palvia & Sharma, 2007; Wadhwa, 2020). One of the earliest definitions of e-governance comes from Backus (2001), which explains E-governance as the application of electronic means for the interaction between government and citizens and government and businesses, as well as in internal government operations to simplify and improve democracy, government and business aspects of Governance. This was further refined by Marche and McNiven (2003), referring to e-governance as a technology-mediated relationship between citizens and their governments from the perspective of potential electronic deliberation over civic communication, policy evolution, and democratic expressions of citizen will.

E-governance was initially confined to the digitization and storage of enormous volumes of manual documents, but the rapid advancement of ICTs started the era of digitization & communication, which also revolutionized e-governance administration to reach the level of multi-channel delivery of e-services for daily life (Feroz Khan, Young Yoon, Kim, & Woo Park, 2014; Rana, Dwivedi, Williams, & Weerakkody, 2016; Reddick, 2005; Sivarajah, Irani, & Weerakkody, 2015). Macintosh (2004) highlights that e-voting experiments, online public consultations, and digital platforms for citizen engagement have become more prevalent, marking the era of e-democracy initiatives. This was followed by a move towards more integrated service delivery models in the 2010s. The open government movement gained momentum, emphasizing transparency,

participation, and collaboration. Data-driven governance and big data analytics began to play a crucial role in policymaking and service delivery (Bertot et al., 2010). The proliferation of smartphones led to the development of mobile governance (m-governance) strategies, marking the era of mobile and smart governance (Omweri, 2024). Linders et al. (2018) further highlight that artificial intelligence and blockchain technologies are being explored to enhance government services and operations. The mass lockdowns caused by the COVID-19 pandemic globally accelerated digital transformation in governance with remote work, virtual public services, and digital health initiatives became critical, pushing governments worldwide to adopt and expand their e-governance capabilities rapidly (Agostino et al., 2021). The shift towards digital transformation prompted by the pandemic has brought to light the significant opportunities and challenges associated with e-governance in times of crisis. This evolution has not only showcased the capabilities of digital solutions in enhancing governance and service delivery but has also exposed the complexities and hurdles that must be navigated to ensure effective implementation during emergencies.

Research and development (R&D) in fields related to e-governance development, transformation, and implementation models; benchmarking and evaluation models; innovation, diffusion, and adoption models; re-engineering frameworks; efficiency; assessment, and so on contributed significantly to the overall improvement in the quality of e-governance (Bindu, 2019). E-governance models are implemented in E-services (connecting citizens with their government), E-administration (improving government processes), and E-society (building interactions with and within civil society) (Heeks,

2001). Each is implemented in three stages, viz., Business Process Automation (BPA), Business Process Improvement (BPI), and Business Process Re-engineering (BPR) (Moon, 2002; Moon & Norris, 2005; van Reijswoud & de Jager, 2007).

Recent advancements in ICT have significantly improved the efficiency in the delivery of e-service and promoted citizens' participation in their government's decision-making process (Peña-López et al., 2016). Qaisar & Khan (2010) recommended the growing utilization of ICT to accomplish governmental activities in terms of providing basic services and engaging with citizens for their own good and emphasized the use of e-governance as serving the citizens using ICT. E-governance is set to empower citizens to engage in the government's strategic decision-making process and provide access to related data (de Jager & van Reijswoud, 2008; Feroz Khan et al., 2014; Nam, 2017; Peña-López et al., 2016; Rodríguez-Bolvíar et al., 2018; Susha et al., 2015; Weerakkody, El-Haddadeh, Al-Sobhi, Shareef, & Dwivedi, 2013). Kim (2008) described the functions of ICT-based democracy (e-Democracy) articulating political and democratic procedures involving citizens in societal decision-making in various ways using ICT. Royo and Yetano (2015) highlight e-participation as an effective and cost-efficient method for enhancing citizen engagement in government activities, strengthening the democratic processes and a more inclusive participation.

2.1.1 Benefits and Opportunities

E-governance offers numerous benefits and opportunities seamlessly for services that were initially difficult to propagate to the masses through conventional methods

(Tennakoon, 2020). Among the opportunities, e-governance's ability to structure large scale macro level government information , which is usually scattered among the systems of diverse departments, into a centralized customer-centric manner, while offering cost efficiencies, greater transparency, accountability, knowledge on public fund utilization and possibility to avail corruptions builds up its reputation (Bhuiyan, 2011). Banswal et al. (2017) highlighted that e-governance as a valuable approach to achieve good governance. They noted that e-governance can help reduce corruption and improve service quality. Giri (2019) quoted the role of e-governance as a dominant arm of good governance.

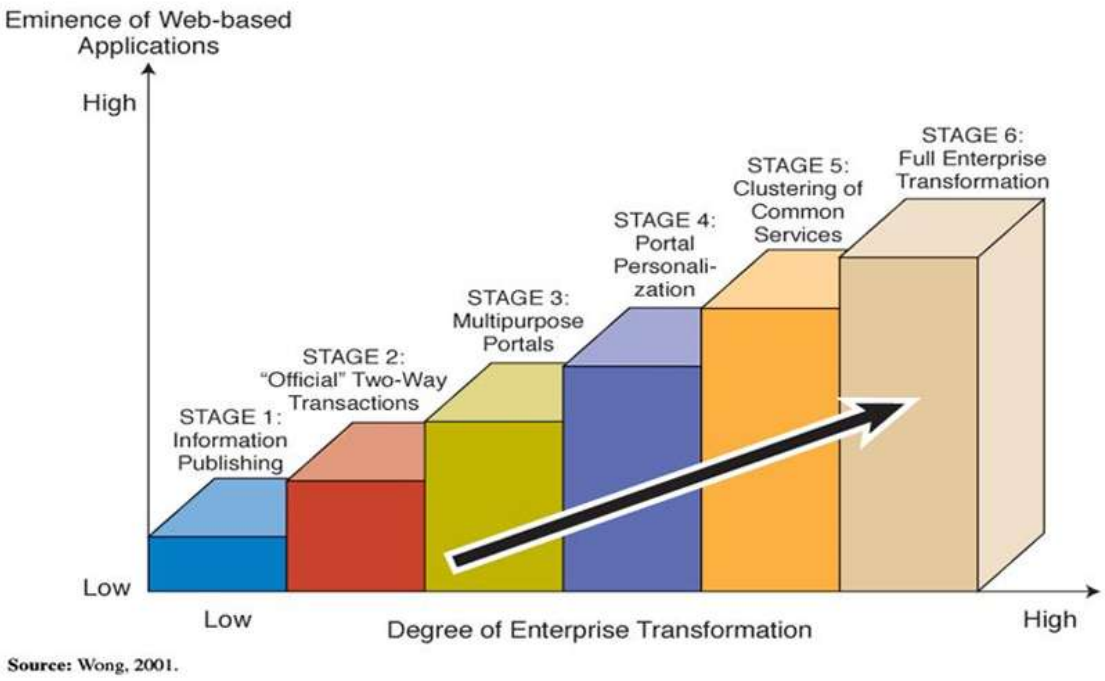

Figure 3: Stages of e-government (Tennakoon, 2020)

E-governance is seen as more than the application of ICT infrastructure to handle information as evidenced in Figure 3 descripting the stages of e-governance. Various national policies on poverty reduction, especially in developing countries and vast populations are recognised to be well facilitated by e-governance. Bertot et al. (2010) identified this is as a mechanism that improve individual accountabilities of governmental officials. At the national level, e-governance investigated for possessing the greater potentiality towards enhancing economic stability (Bhuiyan, 2011). Tennakoon (2020) noted that e-governance initiatives at a local government level in rural India as a mean of empowering rural community and Gram Sabha.

Tennakoon (2020) published a study which identified various opportunities that could be tapped into from a context of Sri Lanka which is illustrated in figure 4 below.

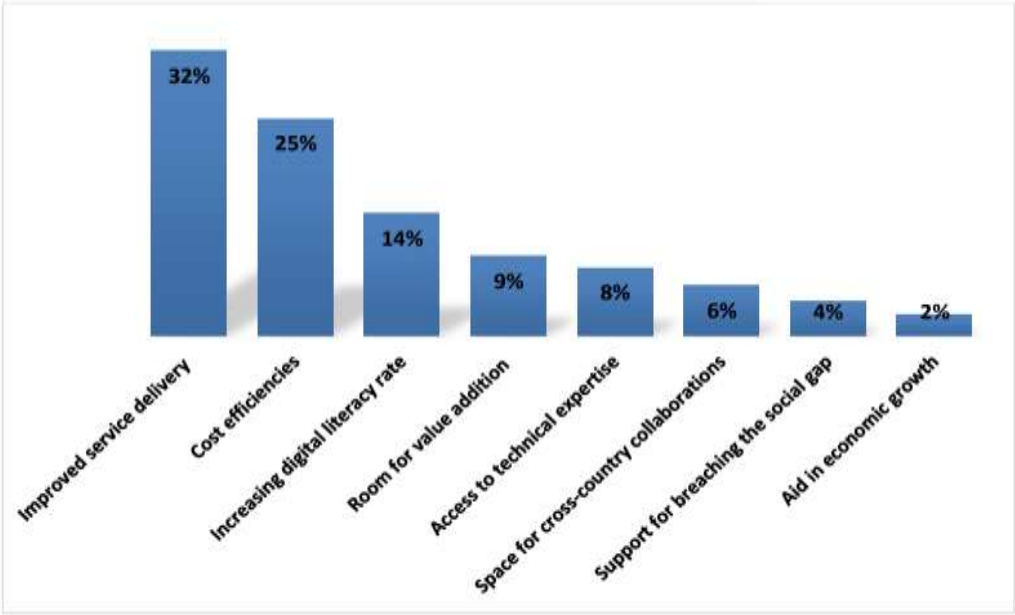

Figure 4: Perceived opportunities of e-governance by the officials (Tennakoon (2020))

2.1.2 Parameters of success for E-Governance Platforms

The literature review highlights key factors that promote e-government adoption in developing nations, including website quality, awareness, computer self-efficacy, trust, and service quality. Majeed et al., (2019) compared developed and developing countries, identifying the factors behind the success of the e government projects in developed countries. It identifies the challenges that developing countries face in fully realizing e-services and seeks to address the political, cultural, and social transformations by leveraging scientific and technological advancements.

Bershadskaya et al., (2013) found that the E-participations was directly proportional to the e-services in Russia; the higher the number of e-participants the better services were provided to the citizens. Sivarajah et al., (2014) focused on e-services utilization among people in London and helped to determine how citizens and government views on the e-government services vary across different cultures and countries in terms of the cost, risks and benefits to a targeted audience. The research identified the role of education and literacy with satisfaction and ease with this e-service applications, which has a primary role to encourage others on their large-scale adoption.

A study conducted by Navarrete et al., (2012) in Mexico found that service quality and reliability directly influence the e-services participants and people use more traditional services rather that services that involves sharing of sensitive information. Similar failure reasons and low citizen usage of e-government services are experienced in developed countries such as Australia, New Zealand, Netherlands or the UK due to

system design, quality, social and cultural factors (Gauld et al., 2012). Akilli et al., (2014) found that the lack of adequate e-government literature, theories, applications and policies in Turkey cause the problems of implementing e-government. To overcome this issue, it is integral to educate citizens to improve trust efficiency and success rate.

Kalvet et al., (2017) discovered the role of e governance of inhibiting transparency, accountability, decrease in discrimination, less redundancy and easy access to data that lead to less time, cost, consistency, data validity and better data quality, which increases the trust quotient within the population. Chu et al., (2017) studied the effect of implementing ICT from an operational, political and social perspective in Taiwan and concluded that most of the people still did not want to share their work, personals files or videos and believed they do not need e-government services entirely. Similar parameters could be identified within the developing countries. For instance, Andersson et al., (2019) identified six values were found that often overlapped that would improve public services; improve administrative efficiency; Open Government capabilities; improved ethical behavior and professionalism; improved trust and confidence in government; and improved social value and well-being. Kamal et al., (2016) conducted a study in Pakistan which identified the importance of digital literacy and access to internet to better implement e-governance and focused on two levels of service maturity i.e. information and transaction levels. Sundaram & Chowdhary (2011) also stated the lack of administrative and financial capacity to achieve these reforms or institutions. Kumara & Singh (2016) studied the Political, Economic, Social and Technological factors in India

and Bangladesh and identified factors like lack of technology, participation, technical issues and privacy.

2.1.3 Current Status and Drivers of E-Governance in Developing Nations

The phenomenon of e-government adoption in developing countries has received attention from scholars in various country contexts. Several studies have identified barriers, challenges, and opportunities in adopting and implementing e-government, especially in developing countries such as Iran, Nigeria, Uganda, Pakistan, and Indonesia (Sihotang et al., 2022). The studies focused on case studies involving the implementation of various e-government applications, such as e-procurement, e-voting, and e-participation. These applications are commonly used at municipal, provincial, and ministry levels of government. Additionally, the researchers employed several well-established theories to adopt information technology effectively.

Holliday (2002) evaluated the major ICT policy initiatives adopted by the Association of Southeast Asian Nations (ASEAN) and its partner states. The main finding is that e-governance activity in East and Southeast Asia is highly diverse, reflecting national strengths and weaknesses rather than regional capacity for policy change. This article argues that ASEAN must pay renewed attention to the strategy of building e-Government through ICT progress, thereby achieving the perceived regional development (Bhuiyan, 2011).

Similarly, in the African context, Schuppan (2009) found that different institutional and cultural dimensions must be considered when implementing e-

government in sub-Saharan Africa. This study also recognized that, especially for African countries, a context-oriented approach seems to be a more promising route to successfully implementing e-government. A study by Shalini (2009) on Mauritius assesses whether the high e-readiness index (Mauritius ranks the best among the East African countries) gives an accurate indication of the citizens' e-readiness and explores the factors facilitating and inhibiting e-readiness. The key findings reveal that the barriers inhibiting the citizens' e-readiness are resistance to change, absence of opportunities for e-participation and e-consultation, and lack of awareness. In another study, Pathak et al. (2009) examined perceptions of public service delivery in Fiji so as to explore the potential of e-governance to cut corruption and improved governance. The results of the study show that service delivery-oriented information technology can contribute to an effective, multi-pronged strategy to cut corruption in the Fiji public sector.

The economy of a country is a key factor in the successful implementation of e-governance. However, recent reports indicate that several other important determinants also play critical roles, including user trust and adaptability, perceived usefulness, and the relative advantages of promoting e-governance. Additionally, compact network structures that integrate information procurement, dissemination, and management significantly contribute to more efficient public administration (Bindu et al., 2019).The virtual media of the internet, apart from mass media channels, put considerable pressure on the stakeholders of e-government, prompting them to follow the tenets of religion, culture, and society (Savolainen, 2016). Thus, the socio-cultural factors arising from social norms

and cultural values are key determinants that influence stakeholders' acceptance of e-services (Seng, Jackson, & Philip, 2010).

2.1.4 E-Governance and Revenue Generation Mechanisms

E-governance has transformed revenue generation in both developed and developing nations. While developed countries leverage advanced technologies to optimize processes, developing nations are focused on overcoming structural barriers to maximize benefits. A balanced approach, incorporating technological innovation, inclusivity, and policy reform, can help nations achieve sustainable revenue growth through e-governance. Further research and collaboration between nations can pave the way for shared learning and improved outcomes in digital governance.

In developed nations, the adoption of e-governance systems is primarily driven by technological advancements, robust infrastructure, and mature governance models. These countries have leveraged e-governance to enhance financial transparency, streamline tax systems, and improve compliance through efficient digital platforms. Developed countries focus on digitalizing their entire financial ecosystem. For example, automated systems for benefit disbursement, subsidy management, and fine collection contribute significantly to revenue growth while minimizing manual errors.

Developed nations utilize integrated taxation systems that link various sources of data to identify potential tax evaders, ensure compliance, and reduce administrative burdens. For instance, European nations have adopted advanced e-procurement systems that streamline public financial management, resulting in reduced corruption and

increased efficiency. Further, Countries like the United States and the United Kingdom have started leveraging on artificial intelligence (AI), predictive computing and big data analytics in their tax systems. These tools predict revenue trends, analyze citizen behavior, and detect fraudulent activities, optimizing tax collection and reducing leakages. For example, big data analytics is increasingly used in monitoring tax returns and detecting anomalies in real time (Kommanaboina, 2024).The advent of Blockchain technology has further bolstered this in financial management systems to create immutable and transparent records of transactions. This ensures that public funds are managed efficiently and reduces the risks of financial misappropriation.

Despite facing significant challenges, Developing nations have shown that well-implemented e-governance initiatives can create substantial revenue streams and improve economic management. However, these efforts are often constrained by resource limitations, infrastructure deficits, and lower levels of digital literacy.

One of the primary challenges for developing nations is the informal economy, which accounts for a significant share of economic activity. E-governance systems, such as mobile tax filing and digital business registration, have been instrumental in bringing informal businesses into the tax net. In African countries, digital systems have improved tax compliance and transparency, though the scale of implementation varies greatly (Bailey, 2024). Mobile money systems have grown rapidly in developing countries, offering a critical avenue for revenue generation. However, introducing taxes on mobile money transactions has sparked debate. While these taxes generate significant revenue, they can reduce financial inclusion and discourage the use of mobile platforms. For

example, studies in sub-Saharan Africa indicate mixed outcomes, with increased revenue on one hand but reduced financial participation on the other (Mpofu, 2022).

Many developing countries are adopting e-procurement platforms to combat corruption and inefficiencies in public spending. These systems enhance transparency and ensure competitive bidding processes, which not only save costs but also increase public trust and revenues, with countries like India and Brazil have demonstrated success in this domain (Frost & Lal, 2018). However, these systems still lack the uniformity and are riddled with loopholes which could be easily exploited.

The implementation is further restricted due to inadequate infrastructure, low internet penetration, and digital illiteracy. To address these, countries like Bangladesh have introduced community-based digital service centers that serve as intermediaries between the government and citizens (Siddiquee, 2016).

2.1.5 Challenges in E-Governance Implementation

Heeks (2003) revealed that approximately 40% of e-government implementations in developing countries are total failures. An estimated 35% of these projects fail completely, while another 50% experience partial failures, leaving only 15% deemed successful. These statistics indicate that the success rate of e-government adoption in developing countries remains extremely low. Heeks (2003) further identifies the key failure into two categories, namely total failure and partial failure. Furthermore, according to Basu (2004), the cause of the failure of E-government in developing countries, among others, is because it does not have adequate infrastructure. According to

Sharma (2007), factors causing the failure of E-government in developing countries are due to the limited number of skilled human resources, lack of incentives for competent employees, lack of political commitment to develop e-government, the legal system being less supportive and the problems associated with interoperability. According to Sharma (2007), the development of E-government in developing countries is faced with several issues, namely (i). public sector is rarely able to manage financial resources, (ii). inadequacy of public sector in terms of internal management, especially in concern of inventiveness of increasing productivity of skilled personnel (iii). typical procedural dependence of the public sector, and (iv). rigid legislative process.

Gyamfi et al., (2019), opine that the problems and challenges that impede the success of e-government projects in developing countries are very crucial, and are caused mainly by the lack of ICT infrastructure, interruption of electricity power supply, security threats and financial constraints. The results of this study are all in consonance with the outcome of other studies; like Mpinganjira (2013) and Alam (2012).

Sarker, et al. (2019) reveals that the main barriers to e-government implementation in developing countries such as Bangladesh are; cultural and social constraints, constraints related to political consensus and Security of Data, human resources constraints, Digital Divide constraints, and Infrastructural Development constraints.

Alkhwaldi et al. (2018) categorized the challenges faced by e-government into four primary areas. The first area, technological challenges, includes issues such as IT infrastructure, security, availability, accessibility, and website design. The second area

focuses on human aspects, specifically the lack of awareness and inadequate ICT skills among users. The third area addresses social challenges, which stem from cultural factors that can influence the effectiveness of e-government initiatives. Finally, financial challenges are marked by high costs and insufficient budgeting for these efforts.

Gupta, et al., (2018), identified 14 barriers to implementing e-government those are; Lack of inter- and intra-organizational collaboration, Lack of feedback-based learning loops, Lack of citizen engagement, Lack of top management commitment, Lack of political will, Resistance to change, Lack of trust on e-governance, Lack of clarity about roles and responsibilities, Inadequate planning for project sustainability, Unrealistic time frames for implementation, Rigid process in government system, Inadequate infrastructure, Ignorance of stakeholders' concerns, Insufficient requirement analysis.

Ajibade, et al. (2017) and Abdulkareem (2015) illustrated in their studies that conducted on Nigeria in order to determine the challenges impeded the success of e-government implementation, that challenges to implementing e-government in Nigeria are; Infrastructural Deficit, Digital Divide, Incessant Power Failure, low ICT literacy level, privacy and security challenges, and theft and vandalism of ICT equipment.

Mohammed et al. (2016) conducted a study addressed "E-government and its Challenges in Developing Countries: Case Study Iraqi E-government" this study aims at increasing the awareness of e-government for employees, government, private sectors, and citizens by identifying the e-government in Iraq and explain its challenges. They found that the e-government implementation challenges in Iraq represented in five categories, those are; Politics, organizational, human capability, technical and security.

They also illustrated that each of these challenges has many factors that influence positively or negatively on e-government to e-government these factors are limited budget, bureaucracy, slow process for decision making, rules and regulations, transparency and monitoring, top management support, trust, and validity organizational structure, reliability of information, as well as lack of technical person, incompatibility of technician staff, resistance for new technology, threat to personal freedoms, illiteracy computer & internet, interoperability, lack of awareness, and lack of devices and infrastructure.

Another study conducted by Amagoh, (2016) on Nigeria to assess e-government illustrate that the challenges to e-government are, high rate of corruption, lack of basic infrastructures, and a large digital divide

Ahmed et al. (2013) stated in their study based in Libya that the main challenges to e-government implementation were technical, infrastructure, and cultural and social issues.

Nabafu and Maiga (2012) conducted a study that determined that the e-government in Uganda has faced challenges with building ICT infrastructure, financial resources, awareness, and social-political factors. The study also identified several challenges to e-government in Kenya, including poor information infrastructure, a lack of ICT policies, entrenched corruption, inadequate human skills, a digital divide, and high levels of IT illiteracy.

Alshehri et al., (2012) and Alshehri & Drew, (2010), have categorized E-government challenges into four categories as follows: Technical Barriers: including ICT

infrastructure, privacy, and security; Organizational Barriers: including top management support, resistance to change to electronic ways, lack of partners and collaboration, lack of qualified personnel and training, and policy and regulation issues; Social Barriers: include digital divide and culture; Economical or Financial barriers: include High cost and lack of budget.

Soni (2015) explores the usefulness of E-Government for the government, businesses, and citizens of India and describes the significant E-Government project in India. India is a developing country with a substantial number of people below the poverty line, low literacy, inadequate infrastructure, budgetary constraints, etc. Due to these constraints, achieving e-governance development becomes more difficult.

Kumar et al. (2019) emphasise the importance of E-Governance, SWOT analysis in implementation by use of cloud computing viz. low operating cost. Ndou (2004) emphasises that the explosion of digital connectivity, the significant improvements in communication and information technologies and the enforced global competition are revolutionising the way businesses perform and the way organisations compete. Detailed country wise specification of their respective objectives, opportunities and challenges in implementation of e-governance in these developing countries.

Verma et al. (2018) detailed how mobile phones are the easy utilities of voice and text messaging(SMS) that can influence the path inhabitants to cooperate with the people as a whole. Mobile phones are also thought to be approachable for deepened democracy through citizen participation and insight into province issues by influencing the

governmental decision-making process and helping hold government answerable. E-governance is becoming easier to manage through M-governance(Mobile Governance).

Thammaiah & Syal (2018) detailed good governance, which includes democratisation, media freedom, and transparency in administration to ensure accountability and people's participation and promote individual and group rights. The Karnataka government initiatives and their success stories in significantly contributing to achieving good governance targeted goals have been highlighted for its replication in other states of India.

Musawir et al. (2017) conducted a study to establish a framework that supports the implementation of organizational strategies by focusing on the realization of project benefits. The study explores the interrelationship between key concepts such as project governance, benefit management, and project success. It involved a scale development process validated by 21 project governance experts, as well as an international survey of 333 projects across 47 countries and 32 industries. The research employed a quantitative design, which limited its capacity to examine the complex relationships between the concepts studied. Future research could utilize a qualitative approach to gain a deeper understanding of how effective project governance influences benefit management, how benefit management affects project success, and the interplay between these concepts.

Nadeem (2016) analyzes the strategies of the neoliberal economic paradigm, which operates through good governance and decentralization programs emanating from the global centers of power.

Srivastava and Lamba (2015) analyze the practices, standards, challenges, and opportunities involved in the implementation of local e-governance. In assessing a specific case against the success factors for e-services, I identify several key challenges: timing, mandate, resource allocation, responsibilities, coordination among departments, reliance on service providers, and compliance with established standards and guidelines. The intricacies of e-governance, along with the factors contributing to failures in e-governance projects, are examined in detail.

Rani and Meenakshi (2015) assert that good governance is essential for democracy. This concept encompasses critical elements such as transparency, accountability, the rule of law, and public participation. Their research paper endeavors to explore the core principles and components of e-governance, as well as the advantages and challenges associated with achieving good governance.

Srivastava & Srivastava (2018), defined E-governance as "use of information and communication technology to improve Information and provide services to the citizens and helping them in decision-making process to make government more accountable, transparent and effective."

Kala et al. (2018) investigated the influence of digitization on businesses and professions in India, revealing that initiatives such as Digital India are the result of numerous innovations and technological advancements. The Digital India initiative stands as a flagship project of the Indian government, aimed at transforming the nation into a knowledge-driven economy and a digitally empowered society. This program seeks to enhance governance for citizens by improving public accountability, establishing

digital connections for government programs and services, and harnessing information technology across various government departments. Furthermore, it aims to create job opportunities, facilitate easier internet access for entrepreneurs, and provide training for employment within the country.

Lodhi and Shukla (2016) focus on the challenges faced by citizens concerning the services provided by the Bhopal Municipal Corporation. The pursuit of effective e-governance has become an essential objective for governments around the globe. Within this context, their paper reviews and organizes previous research on e-government, addressing aspects such as definitions, types, advantages, and barriers. This comprehensive analysis offers valuable background knowledge on the topic while underscoring the key concepts of e-governance.

2.1.6 Case Studies on E-Governance Efficacy

2.1.6.1 INDIA

E-governance in India started in 1970. It first appeared in areas like defence, monitoring the economy, planning, and using technology for elections, the census, and tax administration. In 1977, the Government of India created the Department of Electronics. During the 1980s, efforts began to connect all district headquarters. By the late 1980s, many government officials were using computers, mainly for word processing.

The launch of the National Satellite-Based Computer Network (NICNET) in 1987 helped to boost e-governance. In the 1990s, the use of

information technology expanded, focusing on reaching rural areas and involving NGOs and the private sector. India was one of the first developing countries to adopt e-governance.

Since the 1970s, India has introduced many e-governance initiatives. Some of these include Gyandoot, e-Seva, N-Logue, the Union Ministry of IT, Smart Government, the National E-Governance Plan, E-Kranti, Digital Locker, and Digital India.

According to Sheela and Ramya (2018), connecting digitally can improve the social and economic conditions of people in India. This includes promoting non-agricultural economic activities and providing better access to education, health, and financial services. Digitalization contributes to the overall development of the nation. Sustainable growth depends on enhancing literacy, basic infrastructure, the business environment, and regulations.

India's digital infrastructure is rapidly advancing, thanks to effective policies and technological innovation. The country is moving toward a digital-first economy. Digitalization drives development and is key to helping India become a developed economy soon.

Since 1970, many initiatives have been launched to improve e-governance. These initiatives are new processes created by the government to support e-governance. As the population has grown, the government has

needed to provide essential services and goods to everyone. The following table highlights some of these initiatives at the national and state levels.

Sl. No	State/Union Territories	e-Projects
1.	Andhra Pradesh	e-seva, card, VOICE, MPHS, FAST, e-cops, Saukaryam
2.	Bihar	E-Khajane, Sales Tax Administration Management Information
3.	Chhattisgarh	Chhattisgarh Info Tech Promotion Society, Treasury Office, e-linking project
4.	Delhi	Automatic Vehicle Tracking System, Electronic Clearance System, Delhi Slum Computer Kiosks.
5.	Goa	Dharani Project
6.	Gujarat	Dairy Information System Kiosk(DISK), Form Book Online, Census Online, Tender Notice
7.	Haryana	Nai Disha, Result through Binocular
8.	Himachal Pradesh	Lok- Mitra, e-pension, Unreserved Ticketing System by Indian Railways
9.	Jharkhand	Vahan, Tender Notice
10.	Karnataka	Bhoomi, Kaveri, Khazane
11.	Kerala	RD Net, Fast, Reliable, Instant, Efficient Network for the Disbursement of Services(FRIENDS)
12.	Madhya Pradesh	Gyandoot, Gram Sampark, Smart Card in Transportation Department, Headstart.
13.	Maharashtra	SETU, Koshvani, Telemedicine Project, Online Complaint Management System Mumbai
14.	Orissa	E-Shishu, Common Service Centers(CSCS) in Panchayats
15.	Punjab	SUWIDHA(Single User Window Disposal Help Line for Applicants),SUBS (Suwidha Backend Services),SSIS (Social Security Information System) WEBPASS (District Passport Application Collection Centre)
16.	Rajasthan	Jan Mitra, Lokmitra, RajNidhi, Aarakshi-Online FIR, Professional e-Delivery of Tax Payers by Income Tax
17.	Tamil Nadu	Application Forms Related to Public Utility, Tender Notice & Display
18.	Uttar Pradesh	Lokvani, e-Suvidha, Bhulekh, Treasury Computerization, PRERNA: Property Evaluation and Registration Application
19.	Uttarakhand	Kisan Soochna Kutirs (KSKs),Village Information Centre(VICS), Computerization of Land Record Department
20.	West Bengal	Vehicle Registration, Land Records, Birth and Death Registration, Computerization of Heath Records, Payment of Excise Duty, Sales Tax and Local Tax, Electronic Bill Payment of Water and Electricity
	North eastern state	
21.	Assam	ASHA

Figure 5: List of e-government initiatives under the government of India (Nagaraja (2016))

Karan (2017) talks about e-Governance and implementation challenges. e-Governance is the use of Information and communication technology to enhance relations between the Government and its citizens. India has

witnessed a tremendous change in the way citizen-centric services have changed from paper-based to completely online

Chand, (2017), discusses the success of e-Governance in India than it is effective but not efficient, hence need is to make it efficient for their proper implementation.

2.1.6.2 SRI LANKA

E-governance in Sri Lanka was first acknowledged with the establishment of a National Computer Policy in 1983. The launch of the "e-Sri Lanka" project in 2002 aimed to create an ICT roadmap designed to reduce the digital divide and ensure equitable distribution of ICT infrastructure across all regions of the country. Since then, various promising e-governance initiatives have been developed, largely through politically driven development plans and policy reforms.

However, evidence is limited (Weerakkody, Dwivedi & Kurunananda, 2009) to ascertain whether these policy documents and roadmaps are underpinned by scientific investigations into the feasibility of such initiatives, particularly regarding their potential opportunities and challenges. The authors conducted a comparative study examining the issues faced by Sri Lanka in implementing e-government in contrast to the UK, highlighting specific challenges such as low ICT literacy, inadequate ICT infrastructure, and difficulties in accessing e-government services in local languages.

As recommended by Sharma (2020) and Rahman & Rajon (2011), e-strategies should be grounded in a formal assessment of the business environment to identify trends that could lead to success or failure. Regrettably, the proposed e-governance initiatives in Sri Lanka thus far provide little evidence that they are supported by scientific investigations into the relevant challenges and opportunities (Tennakoon, 2020). Consequently, uncertainty remains regarding the extent to which these initiatives can significantly enhance government services.

2.1.6.3 RWANDA

Rwanda has indeed garnered international recognition for its rapid digital transformation, through its commitment to leveraging technology for socio-economic development is exemplified by projects such as the National Fiber Optic Backbone, which has significantly improved internet connectivity across the nation, and the One Laptop per Child program, aimed at enhancing digital literacy from an early age (Nsengimana et al., 2021). The establishment of the Kigali Innovation City, a tech hub designed to foster innovation and attract international technology companies, further underscores Rwanda's dedication to becoming a knowledge-based economy. Moreover, the government's proactive approach to embracing emerging technologies, such as the use of drones for medical deliveries in rural areas and the implementation of a national digital ID system, has positioned

Rwanda as a leader in digital innovation on the African continent (Chakravorti & Chaturvedi, 2019).

One of the leading initiatives driving e-government adoption at the local level is the Rwanda Online Platform. This platform serves as a central portal for citizens to access a variety of government services electronically. It has notably streamlined service delivery processes within local governments, reducing bureaucracy and enhancing overall efficiency (Twizeyimana & Andersson, 2019). Through the platform, citizens can conveniently access services such as birth registration, land title transfers, and business registration online, thereby minimizing the need for in-person visits to government offices and decreasing opportunities for corruption.

Furthermore, the implementation of the Integrated Financial Management Information System (IFMIS) across all districts has played a vital role in improving financial transparency and accountability within local governments. This system has refined budgeting processes, expenditure tracking, and financial reporting at the district level, contributing to more effective resource allocation and management (World Bank, 2019). The IFMIS also fosters better coordination between local and central government financial systems, facilitating more efficient fiscal decentralization.

Rwanda's comprehensive digital strategy has not only improved public service delivery and governance but has also attracted significant foreign

investment in the tech sector, contributing to Rwanda's rapid economic growth and transformation. As such, e-government initiatives in Rwanda's local governments have emerged as a cornerstone of the country's broader digital transformation strategy, known as the Smart Rwanda Master Plan (SRMP). This comprehensive approach aims to leverage Information and Communication Technologies (ICTs) to enhance public service delivery, improve governance, and foster economic development at both national and local levels (Ministry of ICT and Innovation, 2018). The implementation of e-government solutions in Rwanda's local administrative units, particularly in districts and sectors, has been guided by the overarching vision of creating a knowledge-based economy and achieving middle-income country status by 2035.

2.1.7 Policy Recommendations and Strategic Insights

Many developing countries are pursuing a variety of strategies to tackle the challenges presented by limited institutional capacity and complex socio-cultural environments. These strategies often involve investments in digital literacy programs, the development of ICT infrastructure, and the creation of culturally sensitive e-government services. For example, Rwanda's comprehensive approach to digital transformation highlights significant investments in ICT education and infrastructure as key components of these strategic initiatives (Twizeyimana & Andersson, 2019). Similarly, India's

Digital India program serves as another notable example. It combines large-scale infrastructure projects, such as the National Optical Fiber Network, with initiatives designed to enhance digital literacy and e-governance services that cater to a wide range of linguistic and cultural contexts. This program aims to bridge the digital divide and strengthen institutional capacity through a multi-faceted approach that includes digital identity systems, mobile connectivity, and public internet access points (Bhatia & Bhabha, 2021).

A critical need that has emerged is the establishment of unified e-governance systems, increasingly recognized as vital for generating revenue and delivering efficient public services. These systems integrate various government functions to facilitate seamless, transparent, and efficient interactions with citizens, businesses, and other stakeholders. A growing body of literature underscores the potential of unified systems to address governance challenges, including corruption, inefficiencies, and poor resource allocation, particularly in developing countries. For instance, the integration of government functions and processes through e-governance has been shown to reduce corruption and enhance transparency, as demonstrated in Indonesia's mining sector, where the implementation of unified systems was proposed to optimize non-tax revenue collection and improve operational efficiency (Pramugar & Sinaga, 2021).

The literature also highlights the role of technology in enhancing the efficacy of unified systems for revenue generation. Advanced technologies such

as blockchain, predictive analytics, and artificial intelligence (AI) have been successfully implemented in various contexts to optimize tax collection and improve compliance. Blockchain, in particular, has been noted for its ability to create immutable and transparent records, minimizing opportunities for corruption and enhancing accountability. Predictive analytics has also proven valuable in identifying trends and detecting tax evasion, enabling governments to broaden the tax base and optimize revenue streams (Kommanaboina et al, 2024).

The successful implementation of unified systems relies heavily on the development of a supportive policy framework. Studies stress the importance of adopting comprehensive policies that define objectives, establish oversight mechanisms, and promote interoperability between government agencies. For example, frameworks designed to integrate local and national government functions in developing countries have shown promise in enhancing coordination and efficiency in e-governance systems (Mkude & Wimmer, 2013). Public participation also plays a critical role in fostering trust and ensuring the successful adoption of unified systems. Policies that promote citizen engagement and feedback mechanisms enhance accountability and align e-governance systems with public needs (Ashaye & Irani, 2019).

Capacity building and digital literacy are consistently identified as prerequisites for the effective implementation of unified e-governance systems.

Training government officials and equipping citizens with digital skills can significantly improve the adoption and utilization of these systems. For instance, in Nigeria, e-collection training was found to significantly enhance the willingness of accounting staff to engage with digital revenue collection systems, highlighting the importance of capacity building initiatives (Haruna & Kassim, 2019). Furthermore, investments in robust IT infrastructure are essential to support the scalability and reliability of unified systems. Without adequate infrastructure, the potential of e-governance systems to optimize revenue generation remains limited.

Transparency and accountability are central themes in the literature on unified systems and revenue generation. Mechanisms such as e-procurement platforms and public expenditure tracking systems have demonstrated significant potential to reduce corruption and enhance public trust. In Indonesia, e-procurement platforms have been proposed as a means of improving transparency in public spending, which in turn contributes to increased government revenue (Pramugar & Sinaga, 2021). Similarly, the development of legal and regulatory frameworks to address data privacy, cybersecurity, and compliance issues is critical for fostering trust in e-governance systems (Deane, 2009).

Unified e-governance systems have the potential to generate revenue through multiple streams by addressing inefficiencies, improving compliance, and leveraging digital

innovations. Tax revenue can be significantly enhanced through automated and integrated tax filing systems that improve compliance and reduce evasion. Predictive analytics and big data tools can identify tax evasion patterns and broaden the tax base, ensuring higher revenue collection. Non-tax revenues, such as licensing fees, permits, and fines, can be managed more effectively through unified platforms that automate collection and reconciliation. Indonesia's efforts to optimize revenues from its mining sector through integrated systems exemplify how e-governance can drive efficiency and transparency in non-tax revenue management (Pramugar & Sinaga, 2021). Digital payment gateways integrated into unified e-governance platforms facilitate the seamless collection of service fees for utilities, public records, and municipal services. The convenience of online transactions encourages timely payments, improving revenue flows while reducing administrative costs. Unified systems help governments save costs and optimize procurement processes by reducing corruption, ensuring competitive bidding, and minimizing wastage. These savings indirectly contribute to enhanced fiscal health and resource availability for other initiatives (Kommanaboina et al, 2024).

Digital Economy Integration: Revenue streams from e-commerce and digital marketplaces can be integrated into unified systems for better regulation and taxation. This ensures that transactions in the digital economy are adequately captured, further expanding the tax base.

2.1.8 Research Gap

Questions thus arise regarding how governments, especially those in emerging or developing countries, should conceptualize, handle and continuously improve e-government initiatives. The context of developing countries is important to study because the failure rate of e-government interventions in developing countries is higher than in developed countries (Dada, 2006). Dias (2020) found that developing countries exhibit a significant lack of coordination among various stakeholders, which results in a higher rate of failure in implementing e-government projects.

Despite the growing interest and many studies highlight the theoretical benefits of integrated e-governance systems and their revenue generation potential, notable gaps persist. There is limited empirical data on their long-term impact on revenue generation, particularly in developing economies. Much of the existing research that exists focuses on advanced economies, where infrastructure and digital literacy are less of a concern. There is insufficient exploration of how resource-constrained developing nations can implement unified systems and overcome barriers such as limited funding, digital illiteracy, and resistance to change (Mkude & Wimmer, 2013). The literature often overlooks the role of social factors, such as public trust, digital inclusion, and cultural also attitudes, in the success of unified e-governance systems. Understanding how these factors influence adoption and compliance is crucial for designing effective strategies (Haruna & Kassim, 2019). The literature also fails to recognize the integration challenges and cost benefit tradeoffs. While unified systems promise significant revenue gains, the complexity of integrating multiple departments, systems, and stakeholders into a unified

framework in diverse settings makes it more complex and difficult to estimate the costs of implementation, maintenance, capacity building, and more importantly return of investment remains underexplored.

To address these questions and contribute to the existing literature, the current study takes a comprehensive view of the e-government domain through its research questions and proposes strategies to empower the deployment of e governance platforms in the developing nations.

CHAPTER III:

METHODOLOGY

3.1 Overview of the Research Problem

Building upon the insights from the literature review, this section outlines the research methodology and details the adopted research design, data collection methods, sampling strategies, and analytical approaches to ensure rigorous and context-specific findings that can inform policy and practice in the region. The complex nature of the challenges to implementation and unique challenges specific to the region necessitates a multifaceted research approach. This study adopts a mixed-methods design, combining quantitative and qualitative techniques to comprehensively understand the perceived challenges for implementing e-governance solutions in the southeast Asian region. As Creswell (2003) defined it, a mixed-method approach enables the research to base knowledge claims on pragmatic grounds and provides diverse data. This approach integrates quantitative and qualitative data, providing a robust foundation for knowledge claims and a more complete understanding of the research problem (Johnson & Onwuegbuzie, 2004).

This study is the need to enhance governance effectiveness and project management efficiency in developing economies through the implementation of integrated e-governance methodologies and practices. Despite the growing adoption of e-governance initiatives in these contexts, there remain significant challenges related to technological infrastructure, digital literacy, institutional capacity, and stakeholder engagement. Furthermore, traditional approaches to governance and project management

may not fully leverage the potential of digital technologies and data-driven decision-making. Therefore, the research problem revolves around understanding the current landscape of e-governance practices in developing economies, identifying the key components and characteristics of integrated e-governance methodologies, and assessing their effectiveness in addressing governance challenges and improving project management efficiency. Additionally, the study aims to explore the factors influencing e-governance adoption, such as attitudes toward e-governance initiatives and subjective norms, and to examine the potential benefits of integrated approaches for promoting sustainable development and inclusive governance. Overall, the research problem encompasses the need to bridge the gap between traditional governance practices and emerging digital technologies in developing economies, with the ultimate goal of fostering more transparent, accountable, and citizen-centric governance systems.

3.2 Research Question and Objectives

The purpose of this study is to investigate the implementation of integrated e-governance methodologies and practices in developing economies through literature review and successful case studies with a focus on enhancing governance effectiveness and improving project management efficiency. By examining the adoption of integrated e-governance, the study aims to provide insights into how developing economies can leverage technology and best practices to overcome governance challenges and achieve sustainable development goals with citizen centric approach.

The research objectives included but not restricted to:

- What is the current e-governance practices in developing economies, and how are they addressing governance and project management challenges?
- What are the major barriers and challenges faced by developing economies in implementing integrated e-governance methodologies, and how can these challenges be addressed?
- What are the potential benefits of implementing integrated e-governance methodologies in terms of governance effectiveness and project management efficiency in developing economies?
- How do stakeholders perceive the adoption of integrated e-governance methodologies, and what factors influence their acceptance and adoption?
- What are the success factors and best practices associated with the implementation of integrated e-governance methodologies in developing economies?
- How can lessons learned from successful case studies and experiences in other developing economies be applied to improve the implementation of integrated e-governance in the target context?
- What are the implications of implementing integrated e-governance methodologies for policy formulation, institutional capacity building, and sustainable development in developing economies?
- What are the potential risks and challenges associated with the adoption of integrated e-governance, and how can these risks be mitigated?

- How can governments and policymakers facilitate the transition to integrated e-governance and ensure its long term sustainability and effectiveness in developing economies?

3.3 Research Design

As the study petains to use of e-governace for good governance the research paper adopted a mixed-methods approach, combining qualitative and quantitative methods to provide a comprehensive understanding of integrated e-governance methodologies in developing economies. Qualitative methods, such as interviews, focus groups, and document analysis, are employed to explore stakeholders' perspectives, contextual factors, and implementation challenges. Quantitative methods, including surveys and statistical analysis, are used to gather empirical data on e-governance outcomes, project performance, and user satisfaction. With the aim to determine and qualify the relationship between dependent and independent variables the quantity research was apprehended.

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The way out of the overview of the research design is as shown below :

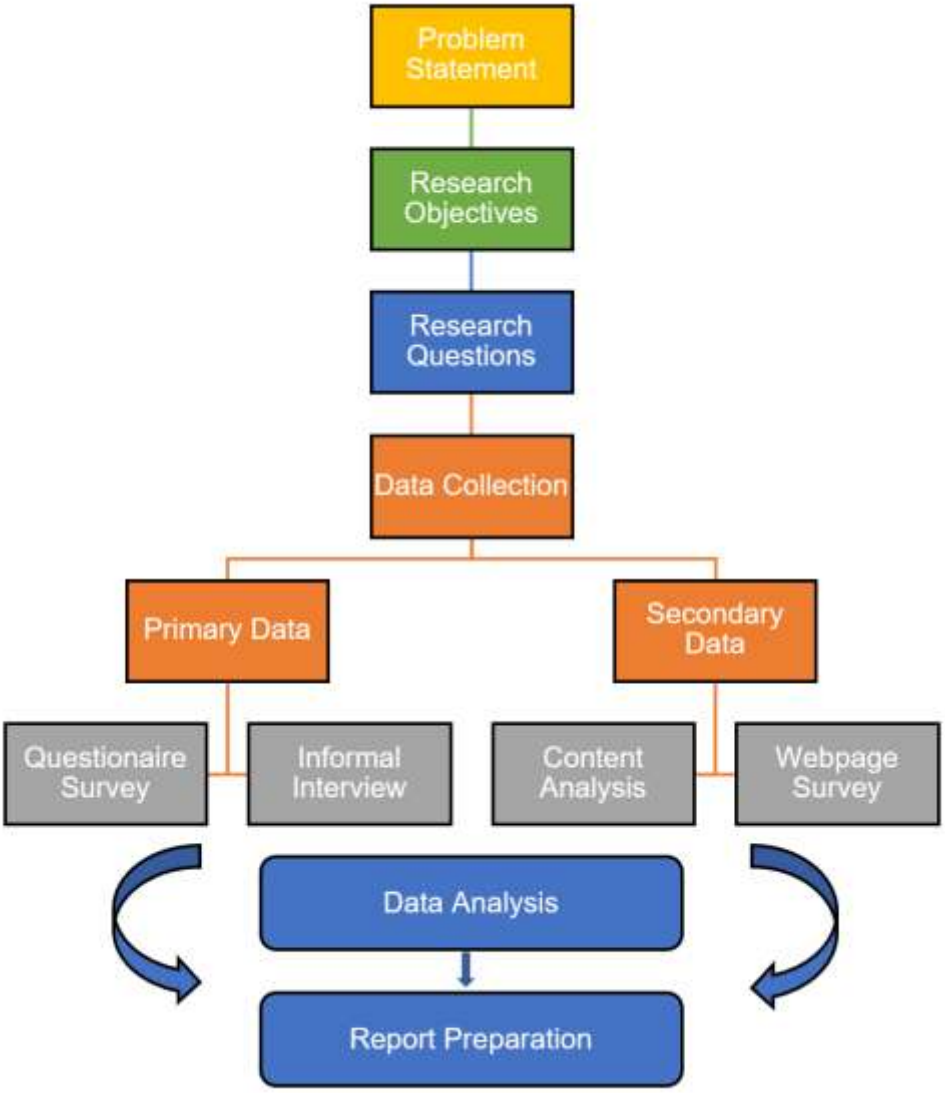

Figure 6: Research Methodology

3.4 Population and Sample

Apart from Secondary data available through reference material, research studies, case studies, success stories available in the of integrated e-governance methodologies

and practices for implementation in developing economies for effective governance and project management, primary data collection through a questionnaire attached in Appendix C was digitally circulated among the officials of Ministry/Department, Citizens, Non-Government Organisations(NGOs), Community Based Organisations(CBOs), Stakeholders to understand the current Scenarios on the area of study in their respective countries. The developing countries covered included India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka etc. The country wise sample collected worked out to be 1054 Nos. The break up country wise, Department, Citizen, NGO's/CBO's/Stakeholders, Ministry wise as given below :

Table 1: Sample Size Data Collected

Country Name	Department	Citizen	NGO's/ CBO's/ Stakeholders	Ministry	Total
India	131	326	95	37	**589**
Bangladesh	65	20	13	20	**118**
Mozambique	10	80	1	8	**99**
Nepal	30	17	6	11	**64**
Mongolia	46	70	9	2	**127**
Sri Lanka	4	38	9	6	**57**
Total:-	**286**	**551**	**133**	**84**	**1054**

The analysis of the above sample size data collected is as given **Chapter IV: Results**

Table 2: Sample Size Data Collected Gender wise and Age Group wise

Country Name	Male	Female	Total
India	**351**	**238**	**589**
- Above 18 < = 40 Years	272	178	
- Above 41 Years	79	60	
Bangladesh	**96**	**22**	**118**
- Above 18 < = 40 Years	83	18	
- Above 41 Years	13	4	
Mozambique	**73**	**26**	**99**
- Above 18 < = 40 Years	63	22	
- Above 41 Years	10	4	
Nepal	**54**	**10**	**64**
- Above 18 < = 40 Years	42	5	
- Above 41 Years	12	5	
Mongolia	**33**	**94**	**127**
- Above 18 < = 40 Years	18	87	
- Above 41 Years	15	7	
Sri Lanka	**38**	**19**	**57**
- Above 18 < = 40 Years	27	15	
- Above 41 Years	11	4	
Total:-			**1054**

3.5 Participant Selection

In the initial phase, after compilation of existing secondary data in form of research papers, literature available, case studies and success stories, quantitative data was gathered through an online survey from a diverse group of professionals involved in e-governance and project management in the countries who caters at large to the developing economies. This included vital actors and influencers throughout the solution lifecycle. A pilot test was conducted with a small group of experts to ensure question clarity, relevance, and validity. Feedback led to necessary questionnaire revisions before the final version was distributed to the target population through emails, google form and other digital modes. Data from the survey was analysed using descriptive and inferential

statistics, enabling the identification of underlying barriers and their grouping into distinct typologies. These results eventually shaped the development of interview questionnaires for the qualitative phase.

The second phase of the research methodology involved conducting in-depth, semi-structured interviews with a purposively selected sample of key stakeholders. This qualitative approach stimulated deep insights into perceptions, experiences, and attitudes shared by stakeholders while implementing e-governance strategies. Participants were recruited using non-probability and purposive sampling techniques to ensure representation across relevant sectors and professional group, including government officials, private sector, subject matter experts and technical professionals. Depending on the participant's preferences and logistical considerations, interviews were conducted face-to-face or via video conferencing. Each interview session lasted approximately 45-60 minutes, allowing for a comprehensive exploration of the research topics. Before commencing each interview, informed consent was obtained from participants, including permission for audio recording wherever applicable. In cases where participants declined audio recording, detailed notes were taken during the interview.

3.6 Instrumentation

The semi-structured interview guide was developed based on themes identified in the literature review and preliminary survey findings. It ensured alignment with the research questions while allowing flexibility to explore emerging topics. Questions were designed to probe e-governance implementations and challenges, potential solutions, and context-specific challenges in the region. The qualitative data from the interviews was

analysed using a thematic analysis approach. This iterative process involved recognising common themes to structure them into apt typologies based on their nature of existence. The findings from the interview phase, triangulated with the quantitative survey results, provide a comprehensive understanding of the challenges.

The questionnaire is used to capture the respondents response is as shown in **Appendix C.** As a summary, here is the overview of the questions asked which included key component of integrated e-governance methodologies that differentiates them from traditional approaches, In developing economies, what is a major challenge that hinders the effective implementation of e-governance, how do integrated e-governance practices contribute to effective project management in developing economies, how are developing economies addressing project management challenges in e-governance initiatives, which of the following e-governance methodologies is most effective in enhancing citizen engagement in developing economies, which of the following is a key benefit of e-governance for citizens in developing countries, which of the following is a major barrier faced by developing economies in implementing integrated e-governance methodologies, what is the key role of public feedback in integrated e-governance systems, which of the following e-governance tools is most likely to improve the efficiency of public service delivery in developing countries, which factor is most critical for ensuring the long term success, Which factor is most critical for ensuring the long-term success of e-governance projects in developing economies, How do stakeholders generally perceive the adoption of integrated e-governance methodologies, What is the primary purpose of using mobile applications for e-governance in developing economies, Which of the following is a

major barrier to e-governance adoption in developing economies, What is a potential benefit of implementing integrated e-governance methodologies in developing economies, how can the risks and challenges of integrated e-governance be mitigated, which of the following strategies can governments and policymakers use to facilitate the transition to integrated e-governance in developing economies, which of the following are key success factors for the successful implementation of integrated e-governance methodologies in developing economies, what is the primary goal of integrating e-governance methodologies in developing economies, how do integrated e-governance systems impact governance in developing economies, how can e-governance improve project management in developing countries, how does integrated e-governance enhance the accountability of government officials, in e-governance systems, what is the role of data security in building trust with citizens in developing countries, can IoT based solutions, Artificial Intelligence and Cloud Computing can help in Integrated approach for e-governance, good governance and project management and monitoring purpose in developing economies, which of the following statements best describes the impact of the single point collection system of taxes and the segregation of tax responsibilities between the State and Central Governments in India, what is the primary purpose of integrating the Aadhaar card into government services and programs, what improvements would you like to see in the existing e-governance services etc. was the structured questionnaire designed for understanding the in-depth knowledge on the subject matter. An unstructured questionnaire for one-to-one interview and group discussion of satisfaction level of e-governance, project management and existing decentralized approach through

e-government digital program was also discussed with various stakeholders and their inputs are also given equal importance in finalization of the research paper.

3.7 Data Collection Procedures

The survey form were distributed/circulated through various channels such as online platforms, email and through in-person interviews of 30-40 Minutes each to collect data from the respondents. Adjustments was made to tailor the question further based on specific research objectives or the target audience requirements. The available success case study and secondary data available was looked into it for cross referencing the data collected. The primary data collection through survey between July 2024 to November 2024 was used by adopting various methods and tools :

- Online surveys : Google Forms by creating links and sharing the respondent group through whatapp, email, social media and other relevant websites
- Email Distribution : Survey form was directly send via email to Sr.Government officials, Stakeholders/citizens groups who interact with e-governance services
- Social Media : The survey form link was broadcasted on social media platforms like twitter, facebook, linkedin etc. targetting individuals interested in e-governance or project managament
- Community Groups : Included community organisation, NGOs and local groups focused on technology or governance issues and requested them to further diseminate among their members for have maximum participation and respondent

- In-person interview : Conducted face-to-face interviews through digital mode viz. video calls, social media etc. with Sr.Government officials, various stakeholders and requested them to fill out the survey form in digital(online) mode or in paper forms
- Focus Groups : Organised focus group discussions with stakeholders such as government officials, IT professional, citizens. The survey form created was used as guide for discussions.

The above method was choosen so as to aligns with target demographic and the resouces available for data collection. Ethical considerations such as informed consent and data privacy was maintained while collecting primary data. The primary data were collected by using structured questionnaire(Appendix C) from key respondents and asked set of questions from experts interview. The secondary data was gathered through content analysis from the research articles, case studies and success stories available in website and through contacts from the developing economies to make the research study more relevant and authentic for its implementation/replicating in other developing economies. The success story of ICT Development of Mongolia through 2016 white paper was used as basic secondary data reference for integration of the e-governance for good governance in developing economies.

The qualitative data was collected using interviews through digital mode. The gathering of data piroritizes ethical research protocols by ensuring no harm to the respondents and avoiding invasion of privacy. The purpose of the survey data collected

was explained through digital mode to each respondents. Respondents participated in the interview of their own will.

3.8 Data Analysis

Quantitative and Qualitative data analysis techniques such as thematic coding, content analysis and pattern recognition, is used to analyze interview transcripts, focus group discussions and document texts.

Descriptive statistics, inferential statistics and multivariate analysis technique to analyze survey data and identify patterns, trends, and correlations. Comparative analysis was conducted to compare finding across different countries, case studies and identify commonalities, differences and lesson learned.

Figure 7: Adopted Research Sequencing.

The analysis of the above sample size data collected from 1054 respondents is as given in **Chapter IV: Results**

3.9 Research Design Limitations

Even though extensive coverage was done to cover up the research objectives, but to over commitment of the department officials, there is a possibility of skipping few points and remains a gap for future researchers to work on it in a pilotting phased manner. Since this is a random sampling, perhaps we have looked into a small universe of the population. Due to pre-occupation and busy schedule of the policy decesion

makers from government agencies the data collection process in person and group discussion was typically slow when compared to other online mode of surveys. However the study focussed on qualitative survey, it is unlikely that a significant number of potential respondent got covered.

This research has limitations, including potential biases in the sample selection process, as participants were selected through professional networks, social media, and familiar organisations. The study is confined to the barriers within the southeast Asian region, which may not be widely applicable to other regions or contexts beyond, as the barriers identified may be unique to the region's environmental, social, and political landscape. The study identifies the barriers based on the understanding and perceptions shared by the stakeholders and does not validate the existence of these barriers specifically through any case study. As part of its results and discussions, the study also offers possible steps that could be adopted to mitigate these challenges; however, the integrity of these solutions is not included in this research.

3.10 Conclusion

This research methodology employs a comprehensive mixed-methods approach, combining quantitative surveys and qualitative interviews to thoroughly investigate the barriers to e-governance adoption and analyse their efficacy in the south east Asian countries. This multi-faceted design allows for a robust exploration of the complex landscape of challenges, capturing both broad patterns and nuanced perspectives. The sequential nature of the methodology, progressing from quantitative data collection to in-

depth qualitative inquiry, ensures that each phase builds upon and enriches the findings of the previous one. This approach identifies key perceived barriers and elucidates their intricate relationships, providing a holistic understanding of the obstacles facing e governance implementation in the region. The rigorous and systematic nature of this methodology enhances the validity and reliability of the findings, contributing to a solid foundation for advancing the adoption of these strategies. Furthermore, this approach allows for the emergence of unexpected themes and relationships, potentially uncovering critical factors that may have been overlooked in previous studies or other geographical contexts and generating actionable insights to inform policymaking, urban planning strategies, and future research directions in sustainable urban management for arid regions.

In accordance to the research design that I have chosen and the method of study that I have chosen, the data being collected is being presented in the fashion that best explains the pupose of study.

CHAPTER IV:

RESULTS

4.1 Overview

The study aimed to investigate the implementation of integrated e-governance methodologies and practices in developing economies. It explored the current e-governance landscape, identified key components of integrated e-governance, and compared them with traditional approaches. The research questions focused on understanding the factors influencing e-governance adoption, evaluating the effectiveness of current practices, and assessing the potential benefits of integrated approaches.

4.2 Research Question One

The first research question aims to investigate the existing landscape of e-governance practices and initiatives in developing economies. It also seeks to understand the range of e-governanc projects, platforms, and strategies implemented in these contexts and their effectiveness in addressing goverance challenges and improving project management efficiency. By examining the strengths, weakness, and outcomes of current e-governance initiatives, this study will identify areas for improvement and provide recommendations for enhancing the effectiveness of e-governance in supporting governance processes and project management in developing economies.

4.3 Research Question Two

The second research question aims to explore the concept of integrated e-governance methodologies and best practices in developing economies. It also seeks to

identify and analyze the essential components, features, and principles of integrated e-governance, as well as how they diverge from conventional approaches to governance.

By comparing integrated e-governance methodologies with traditional practices the study highlights the innovative aspects and potential advantages of integrated approaches, such as increased efficiency, improved service delivery, and enhance citizen engagement.

By in-depth understanding these differences one can inform policymakers, government officials, and practitioners about the potential benefits of transitioning to integrated e-governance models in developing economies.

4.4 Summary of Findings

Keeping in mind both the research question 1 and question 2 and overall research objectives of integrated e-governance methodologies and practices for implementation in developing economies for effective governance and project management, primary data collection through a questionnaire attached in Appendix C was digitally circulated among the officials of Ministry/Department, Citizens, Non-Government Organisations(NGOs), Community Based Organisations(CBOs), Stakeholders to understand the current Scenarios on the area of study in their respective countries. The developing countries covered included India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka etc. The country wise total sample collected worked out to be 1054 Nos. The break up Country wise, Department, Citizen, NGO's/CBO's/Stakeholders, Ministry wise as given in **Table 1 & Table 2**.

After statistical analysis of the above sample size data collected the findings are as given as given below :

Table 3 :Key component of integrated e-governance methodologies that differentiates them from traditional approaches

Country	Paper-based documentation	Limited citizen engagement	Digital infrastructure and connectivity	Manual data processing
India	**110 (18.68%)**	**87 (14.77%)**	**304 (51.61%)**	**88 (14.94%)**
-Department	41 (31.3%)	11 (8.4%)	71 (54.2%)	8 (6.11%)
-Citizen	32 (9.82%)	65 (19.94%)	164 (50.31%)	65 (19.94%)
-NGOs/CBOs	27 (28.42%)	7 (7.37%)	49 (51.58%)	12 (12.63%)
-Relevant Ministry	10 (27.03%)	4 (10.81%)	20 (54.05%)	3 (8.11%)
Bangladesh	**23 (19.49%)**	**10 (8.47%)**	**68 (57.63%)**	**17 (14.41%)**
-Department	10 (15.38%)	3 (4.62%)	43 (66.15%)	9 (13.85%)
-Citizen	5 (25%)	3 (15%)	9 (45%)	3 (15%)
-NGOs/CBOs	4 (30.77%)	1 (7.69%)	6 (46.15%)	2 (15.38%)
-Relevant Ministry	4 (20%)	3 (15%)	10 (50%)	3 (15%)
Mozambique	**9 (9.09%)**	**31 (31.31%)**	**50 (50.51%)**	**9 (9.09%)**
-Department	2 (20%)	2 (20%)	5 (50%)	1 (10%)
-Citizen	2 (2.5%)	28 (35%)	42 (52.5%)	8 (10%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)

Country	Paper-based documentation	Limited citizen engagement	Digital infrastructure and connectivity	Manual data processing
-Relevant Ministry	5 (62.5%)	0 (0%)	3 (37.5%)	0 (0%)
Nepal	**1 (1.56%)**	**7 (10.94%)**	**45 (70.31%)**	**11 (17.19%)**
-Department	0 (0%)	0 (0%)	26 (86.67%)	4 (13.33%)
-Citizen	0 (0%)	7 (41.18%)	10 (58.82%)	0 (0%)
-NGOs/CBOs	1 (16.67%)	0 (0%)	2 (33.33%)	3 (50%)
-Relevant Ministry	0 (0%)	0 (0%)	7 (63.64%)	4 (36.36%)
Mongolia	**7 (5.51%)**	**28 (22.05%)**	**77 (60.63%)**	**15 (11.81%)**
-Department	0 (0%)	0 (0%)	39 (84.78%)	7 (15.22%)
-Citizen	7 (10%)	28 (40%)	35 (50%)	0 (0%)
-NGOs/CBOs	0 (0%)	0 (0%)	1 (11.11%)	8 (88.89%)
-Relevant Ministry	0 (0%)	0 (0%)	2 (100%)	0 (0%)
Sri Lanka	**3 (5.26%)**	**8 (14.04%)**	**42 (73.68%)**	**4 (7.02%)**
-Department	1 (25%)	1 (25%)	2 (50%)	0 (0%)
-Citizen	1 (2.63%)	7 (18.42%)	30 (78.95%)	0 (0%)
-NGOs/CBOs	1 (11.11%)	0 (0%)	8 (88.89%)	0 (0%)
-Relevant	0 (0%)	0 (0%)	2 (33.33%)	4 (66.67%)

Country	Paper-based documentation	Limited citizen engagement	Digital infrastructure and connectivity	Manual data processing
Ministry				

It is observed and can be seen from the above analysis that in the age of digital economy least priority by today's fast developing economies is given to paper based documentation and manual data processing. 52%, 58%, 51%, 70%, 61% and 74% respondent from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are in favor of adapting to digital economy.

The highest priority is given to digital infrastructure and connectivity. It indicates that there exists a demand and need for digital infrastructure and connectivity for smooth operations of e-governance, good governance and project management operations.

Table 4:Major challenges hindering the effective implementation of e-governance

Country	Universal access to online services	High levels of digital literacy	Abundance of internet access in rural areas	Insufficient digital infrastructure and cyber security frameworks
India	**94 (15.96%)**	**115 (19.52%)**	**148 (25.13%)**	**232 (39.39%)**
-Department	22 (16.79%)	34 (25.95%)	30 (22.9%)	45 (34.35%)
-Citizen	52 (15.95%)	63 (19.33%)	93 (28.53%)	118 (36.2%)
-NGOs/CBOs	17 (17.89%)	8 (8.42%)	15 (15.79%)	55 (57.89%)
-Relevant Ministry	3 (8.11%)	10 (27.03%)	10 (27.03%)	14 (37.84%)
Bangladesh	**29 (24.58%)**	**22 (18.64%)**	**20 (16.95%)**	**47 (39.83%)**

Country	Universal access to online services	High levels of digital literacy	Abundance of internet access in rural areas	Insufficient digital infrastructure and cyber security frameworks
-Department	19 (29.23%)	12 (18.46%)	11 (16.92%)	23 (35.38%)
-Citizen	5 (25%)	3 (15%)	4 (20%)	8 (40%)
-NGOs/CBOs	2 (15.38%)	1 (7.69%)	3 (23.08%)	7 (53.85%)
-Relevant Ministry	3 (15%)	6 (30%)	2 (10%)	9 (45%)
Mozambique	**31 (31.31%)**	**22 (22.22%)**	**6 (6.06%)**	**40 (40.4%)**
-Department	2 (20%)	2 (20%)	0 (0%)	6 (60%)
-Citizen	29 (36.25%)	19 (23.75%)	6 (7.5%)	26 (32.5%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	0 (0%)	8 (100%)
Nepal	**19 (29.69%)**	**6 (9.38%)**	**12 (18.75%)**	**27 (42.19%)**
-Department	13 (43.33%)	0 (0%)	9 (30%)	8 (26.67%)
-Citizen	2 (11.76%)	0 (0%)	0 (0%)	15 (88.24%)
-NGOs/CBOs	0 (0%)	0 (0%)	2 (33.33%)	4 (66.67%)
-Relevant Ministry	4 (36.36%)	6 (54.55%)	1 (9.09%)	0 (0%)
Mongolia	**33 (25.98%)**	**19 (14.96%)**	**17 (13.39%)**	**58 (45.67%)**
-Department	13 (28.26%)	0 (0%)	11 (23.91%)	22 (47.83%)

Country	Universal access to online services	High levels of digital literacy	Abundance of internet access in rural areas	Insufficient digital infrastructure and cyber security frameworks
-Citizen	20 (28.57%)	19 (27.14%)	6 (8.57%)	25 (35.71%)
-NGOs/CBOs	0 (0%)	0 (0%)	0 (0%)	9 (100%)
-Relevant Ministry	0 (0%)	0 (0%)	0 (0%)	2 (100%)
Sri Lanka	**11 (19.3%)**	**9 (15.79%)**	**8 (14.04%)**	**29 (50.88%)**
-Department	0 (0%)	1 (25%)	0 (0%)	3 (75%)
-Citizen	7 (18.42%)	7 (18.42%)	2 (5.26%)	22 (57.89%)
-NGOs/CBOs	3 (33.33%)	1 (11.11%)	5 (55.56%)	0 (0%)
-Relevant Ministry	1 (16.67%)	0 (0%)	1 (16.67%)	4 (66.67%)

On asking the question 2 of the questionnaire on major challenge that hinders the effective implementation of e-governance, it is observed that 39% of the respondent in India have indicated the hindrance is due to insufficient digital infrastructure and cyber security frameworks whereas the highest is 51% which is reported from Sri Lanka. The high level of digital literacy is recorded by Nepal which works out to be about 9.38%. Universal access to online services is not also up to mark as only 19.3% responded in a positive note.

Table 5: Role of integrated e-governance practices contribute to effective project management in developing economies

Country	By limiting public involvement in decision-making	By providing tools for collaboration and real-time monitoring	By ensuring faster implementation of projects	By reducing government accountability
India	**102 (17.32%)**	**274 (46.52%)**	**136 (23.09%)**	**77 (13.07%)**
-Department	1 (25%)	2 (50%)	0 (0%)	1 (25%)
-Citizen	9 (23.68%)	20 (52.63%)	0 (0%)	9 (23.68%)
-NGOs/CBOs	4 (44.44%)	0 (0%)	0 (0%)	5 (55.56%)
-Relevant Ministry	0 (0%)	4 (66.67%)	1 (16.67%)	1 (16.67%)
Bangladesh	**19 (16.1%)**	**51 (43.22%)**	**28 (23.73%)**	**20 (16.95%)**
-Department	8 (12.31%)	29 (44.62%)	18 (27.69%)	10 (15.38%)
-Citizen	4 (20%)	7 (35%)	4 (20%)	5 (25%)
-NGOs/CBOs	4 (30.77%)	7 (53.85%)	1 (7.69%)	1 (7.69%)
-Relevant Ministry	3 (15%)	8 (40%)	5 (25%)	4 (20%)
Mozambique	**22 (22.22%)**	**51 (51.52%)**	**14 (14.14%)**	**12 (12.12%)**
-Department	2 (20%)	6 (60%)	0 (0%)	2 (20%)
-Citizen	11 (13.75%)	45 (56.25%)	14 (17.5%)	10 (12.5%)
-NGOs/CBOs	1 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant Ministry	8 (100%)	0 (0%)	0 (0%)	0 (0%)

Country	By limiting public involvement in decision-making	By providing tools for collaboration and real-time monitoring	By ensuring faster implementation of projects	By reducing government accountability
Nepal	**1 (1.56%)**	**35 (54.69%)**	**18 (28.13%)**	**10 (15.63%)**
-Department	1 (3.33%)	8 (26.67%)	15 (50%)	6 (20%)
-Citizen	0 (0%)	13 (76.47%)	0 (0%)	4 (23.53%)
-NGOs/CBOs	0 (0%)	4 (66.67%)	2 (33.33%)	0 (0%)
-Relevant Ministry	0 (0%)	10 (90.91%)	1 (9.09%)	0 (0%)
Mongolia	**19 (14.96%)**	**60 (47.24%)**	**32 (25.2%)**	**16 (12.6%)**
-Department	0 (0%)	22 (47.83%)	18 (39.13%)	6 (13.04%)
-Citizen	18 (25.71%)	36 (51.43%)	6 (8.57%)	10 (14.29%)
-NGOs/CBOs	1 (11.11%)	0 (0%)	8 (88.89%)	0 (0%)
-Relevant Ministry	0 (0%)	2 (100%)	0 (0%)	0 (0%)
Sri Lanka	**14 (24.56%)**	**26 (45.61%)**	**1 (1.75%)**	**16 (28.07%)**
-Department	1 (25%)	2 (50%)	0 (0%)	1 (25%)
-Citizen	9 (23.68%)	20 (52.63%)	0 (0%)	9 (23.68%)
-NGOs/CBOs	4 (44.44%)	0 (0%)	0 (0%)	5 (55.56%)
-Relevant Ministry	0 (0%)	4 (66.67%)	1 (16.67%)	1 (16.67%)

On asking the question 3 of the questionnaire on integrated e-governance practices contribute to effective project management in developing economies around 47% of the respondent from India, 43% from Bangladesh, 52% from Mozambique, 55% from Nepal, 60% from Mongolia and 46% from Sri Lanka indicated that by providing tools for collaborating and real time monitoring the above objectives can be achieved. The highest level of is 60% from Mongolia, whose case study and success stories can tested and replicated in the developing economies.

Table 6: How are developing economies addressing project management challenges in e-governance initiatives ?

Country	By avoiding technology-based solutions	By limiting the scope of e-governance projects to small pilot programs	By relying on traditional management methods	Through the automation of routine tasks and improved data analytics
India	**84 (14.26%)**	**116 (19.69%)**	**122 (20.71%)**	**267 (45.33%)**
-Department	24 (18.32%)	25 (19.08%)	31 (23.66%)	51 (38.93%)
-Citizen	44 (13.5%)	47 (14.42%)	75 (23.01%)	160 (49.08%)
-NGOs/CBOs	13 (13.68%)	33 (34.74%)	9 (9.47%)	40 (42.11%)
-Relevant Ministry	3 (8.11%)	11 (29.73%)	7 (18.92%)	16 (43.24%)
Bangladesh	**17 (14.41%)**	**23 (19.49%)**	**33 (27.97%)**	**45 (38.14%)**
-Department	9 (13.85%)	11 (16.92%)	22 (33.85%)	23 (35.38%)
-Citizen	4 (20%)	3 (15%)	6 (30%)	7 (35%)
-NGOs/CBOs	3 (23.08%)	3 (23.08%)	2 (15.38%)	5 (38.46%)

Country	By avoiding technology-based solutions	By limiting the scope of e-governance projects to small pilot programs	By relying on traditional management methods	Through the automation of routine tasks and improved data analytics
-Relevant Ministry	1 (5%)	6 (30%)	3 (15%)	10 (50%)
Mozambique	**8 (8.08%)**	**19 (19.19%)**	**15 (15.15%)**	**57 (57.58%)**
-Department	0 (0%)	3 (30%)	2 (20%)	5 (50%)
-Citizen	1 (1.25%)	14 (17.5%)	13 (16.25%)	52 (65%)
-NGOs/CBOs	1 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant Ministry	6 (75%)	2 (25%)	0 (0%)	0 (0%)
Nepal	**9 (14.06%)**	**6 (9.38%)**	**7 (10.94%)**	**42 (65.63%)**
-Department	7 (23.33%)	0 (0%)	4 (13.33%)	19 (63.33%)
-Citizen	0 (0%)	4 (23.53%)	0 (0%)	13 (76.47%)
-NGOs/CBOs	2 (33.33%)	0 (0%)	0 (0%)	4 (66.67%)
-Relevant Ministry	0 (0%)	2 (18.18%)	3 (27.27%)	6 (54.55%)
Mongolia	**16 (12.6%)**	**16 (12.6%)**	**17 (13.39%)**	**78 (61.42%)**
-Department	9 (19.57%)	0 (0%)	4 (8.7%)	33 (71.74%)
-Citizen	6 (8.57%)	14 (20%)	7 (10%)	43 (61.43%)
-NGOs/CBOs	1 (11.11%)	2 (22.22%)	6 (66.67%)	0 (0%)

Country	By avoiding technology-based solutions	By limiting the scope of e-governance projects to small pilot programs	By relying on traditional management methods	Through the automation of routine tasks and improved data analytics
-Relevant Ministry	0 (0%)	0 (0%)	0 (0%)	2 (100%)
Sri Lanka	**1 (1.75%)**	**24 (42.11%)**	**8 (14.04%)**	**24 (42.11%)**
-Department	0 (0%)	3 (75%)	1 (25%)	0 (0%)
-Citizen	0 (0%)	12 (31.58%)	6 (15.79%)	20 (52.63%)
-NGOs/CBOs	0 (0%)	8 (88.89%)	1 (11.11%)	0 (0%)
-Relevant Ministry	1 (16.67%)	1 (16.67%)	0 (0%)	4 (66.67%)

The above comparative analysis indicates that through the automation of routine tasks and improved data analytics developing economies addressing project management challenges in e-governance initiatives can be met. 45%,38%,58%,66%, 61% and 42% from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka respective agreed upon the above solutions, which endorses the need of this solution for these developing economies to grow much faster by maintaining transparency, reduction in cost and time overrun, reduction in corrupt practices etc.

Table 7: Which of the following e-governance methodologies is most effective in enhancing citizen engagement in developing economies?

Country	Mobile applications for service delivery	E-voting systems	E-billing systems	Government websites for information dissemination
India	**235 (39.9%)**	**140 (23.77%)**	**120 (20.37%)**	**94 (15.96%)**
-Department	52 (39.69%)	32 (24.43%)	35 (26.72%)	12 (9.16%)
-Citizen	123 (37.73%)	78 (23.93%)	65 (19.94%)	60 (18.4%)
-NGOs/CBOs	43 (45.26%)	24 (25.26%)	15 (15.79%)	13 (13.68%)
-Relevant Ministry	17 (45.95%)	6 (16.22%)	5 (13.51%)	9 (24.32%)
Bangladesh	**57 (48.31%)**	**15 (12.71%)**	**26 (22.03%)**	**20 (16.95%)**
-Department	29 (44.62%)	8 (12.31%)	16 (24.62%)	12 (18.46%)
-Citizen	11 (55%)	3 (15%)	4 (20%)	2 (10%)
-NGOs/CBOs	8 (61.54%)	1 (7.69%)	3 (23.08%)	1 (7.69%)
-Relevant Ministry	9 (45%)	3 (15%)	3 (15%)	5 (25%)
Mozambique	**46 (46.46%)**	**20 (20.2%)**	**15 (15.15%)**	**18 (18.18%)**
-Department	8 (80%)	2 (20%)	0 (0%)	0 (0%)
-Citizen	30 (37.5%)	18 (22.5%)	14 (17.5%)	18 (22.5%)
-NGOs/CBOs	0 (0%)	0 (0%)	1 (100%)	0 (0%)
-Relevant Ministry	8 (100%)	0 (0%)	0 (0%)	0 (0%)

Country	Mobile applications for service delivery	E-voting systems	E-billing systems	Government websites for information dissemination
Nepal	**27 (42.19%)**	**8 (12.5%)**	**15 (23.44%)**	**14 (21.88%)**
-Department	11 (36.67%)	7 (23.33%)	12 (40%)	0 (0%)
-Citizen	3 (17.65%)	0 (0%)	0 (0%)	14 (82.35%)
-NGOs/CBOs	5 (83.33%)	1 (16.67%)	0 (0%)	0 (0%)
-Relevant Ministry	8 (72.73%)	0 (0%)	3 (27.27%)	0 (0%)
Mongolia	**56 (44.09%)**	**26 (20.47%)**	**27 (21.26%)**	**18 (14.17%)**
-Department	26 (56.52%)	8 (17.39%)	12 (26.09%)	0 (0%)
-Citizen	20 (28.57%)	18 (25.71%)	14 (20%)	18 (25.71%)
-NGOs/CBOs	9 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant Ministry	1 (50%)	0 (0%)	1 (50%)	0 (0%)
Sri Lanka	**17 (29.82%)**	**9 (15.79%)**	**14 (24.56%)**	**17 (29.82%)**
-Department	3 (75%)	1 (25%)	0 (0%)	0 (0%)
-Citizen	10 (26.32%)	6 (15.79%)	5 (13.16%)	17 (44.74%)
-NGOs/CBOs	0 (0%)	1 (11.11%)	8 (88.89%)	0 (0%)
-Relevant Ministry	4 (66.67%)	1 (16.67%)	1 (16.67%)	0 (0%)

As the survey was undertaken in developing economies due to the respondent financial capacity, affordability and ease of use around 40%, 48%,46%,42%,44% and 30% from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka respectively agreed that Mobile applications for service delivery is one of the best option available as one of the e-governance methodologies for enhancing citizen engagement in developing economies.

Table 8: Which of the following e-governance methodologies is most effective in enhancing citizen engagement in developing economies?

Country	Reduced need for public administration	Increased government expenditure	Faster, more accessible public services	Over-dependence on technology
India	**143 (24.28%)**	**115 (19.52%)**	**229 (38.88%)**	**102 (17.32%)**
-Department	29 (22.14%)	18 (13.74%)	50 (38.17%)	34 (25.95%)
-Citizen	89 (27.3%)	57 (17.48%)	127 (38.96%)	53 (16.26%)
-NGOs/CBOs	17 (17.89%)	32 (33.68%)	36 (37.89%)	10 (10.53%)
-Relevant Ministry	8 (21.62%)	8 (21.62%)	16 (43.24%)	5 (13.51%)
Bangladesh	**17 (14.41%)**	**31 (26.27%)**	**51 (43.22%)**	**19 (16.1%)**
-Department	3 (4.62%)	20 (30.77%)	29 (44.62%)	13 (20%)
-Citizen	4 (20%)	5 (25%)	8 (40%)	3 (15%)
-NGOs/CBOs	3 (23.08%)	3 (23.08%)	6 (46.15%)	1 (7.69%)
-Relevant Ministry	7 (35%)	3 (15%)	8 (40%)	2 (10%)
Mozambique	**11 (11.11%)**	**19 (19.19%)**	**50 (50.51%)**	**19 (19.19%)**
-Department	0 (0%)	6 (60%)	4 (40%)	0 (0%)

Country	Reduced need for public administration	Increased government expenditure	Faster, more accessible public services	Over-dependence on technology
-Citizen	10 (12.5%)	5 (6.25%)	46 (57.5%)	19 (23.75%)
-NGOs/CBOs	1 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	8 (100%)	0 (0%)	0 (0%)
Nepal	**1 (1.56%)**	**1 (1.56%)**	**55 (85.94%)**	**7 (10.94%)**
-Department	1 (3.33%)	1 (3.33%)	26 (86.67%)	2 (6.67%)
-Citizen	0 (0%)	0 (0%)	14 (82.35%)	3 (17.65%)
-NGOs/CBOs	0 (0%)	0 (0%)	6 (100%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	9 (81.82%)	2 (18.18%)
Mongolia	**10 (7.94%)**	**13 (10.32%)**	**82 (65.08%)**	**21 (16.67%)**
-Department	0 (0%)	0 (0%)	44 (95.65%)	2 (4.35%)
-Citizen	8 (11.43%)	12 (17.14%)	37 (52.86%)	13 (18.57%)
-NGOS/CBOSs/ CBOs	2 (22.22%)	1 (11.11%)	0 (0%)	6 (66.67%)
-Relevant Ministry	0 (0%)	0 (0%)	1 (100%)	0 (0%)
Sri Lanka	**15 (26.32%)**	**4 (7.02%)**	**26 (45.61%)**	**12 (21.05%)**
-Department	0 (0%)	3 (75%)	1 (25%)	0 (0%)
-Citizen	9 (23.68%)	0 (0%)	21 (55.26%)	8 (21.05%)
-NGOs/CBOs	6 (66.67%)	0 (0%)	0 (0%)	3 (33.33%)
-Relevant Ministry	0 (0%)	1 (16.67%)	4 (66.67%)	1 (16.67%)

Question on key benefit of e-governance for citizens in developing countries was asked, most of the respondent indicated that it results into Faster, more accessible public services. 39%, 43%, 51%, 86%,65 and 46% from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka respectively agreed. It indicates that people in these countries are well aware of the benefits of e-governance and there bringing in change would be acceptable by the masses.

Table 9: Major barrier faced by developing economies in implementing integrated e-governance methodologies.

Country	Unequal access to technology and the internet	Overabundance of technical infrastructure	Lack of citizen interest in e-governance	Excessive digital literacy among citizens
India	**201 (34.13%)**	**107 (18.17%)**	**148 (25.13%)**	**133 (22.58%)**
-Department	42 (32.06%)	28 (21.37%)	34 (25.95%)	27 (20.61%)
-Citizen	103 (31.6%)	64 (19.63%)	77 (23.62%)	82 (25.15%)
-NGOs/CBOs	38 (40%)	8 (8.42%)	36 (37.89%)	13 (13.68%)
-Relevant Ministry	18 (48.65%)	7 (18.92%)	1 (2.7%)	11 (29.73%)
Bangladesh	**50 (42.37%)**	**27 (22.88%)**	**27 (22.88%)**	**14 (11.86%)**
-Department	25 (38.46%)	16 (24.62%)	16 (24.62%)	8 (12.31%)
-Citizen	9 (45%)	4 (20%)	6 (30%)	1 (5%)
-NGOs/CBOs	5 (38.46%)	3 (23.08%)	4 (30.77%)	1 (7.69%)
-Relevant Ministry	11 (55%)	4 (20%)	1 (5%)	4 (20%)
Mozambique	**47 (47.47%)**	**18 (18.18%)**	**15 (15.15%)**	**19 (19.19%)**

Country	Unequal access to technology and the internet	Overabundance of technical infrastructure	Lack of citizen interest in e-governance	Excessive digital literacy among citizens
-Department	4 (40%)	2 (20%)	4 (40%)	0 (0%)
-Citizen	43 (53.75%)	8 (10%)	10 (12.5%)	19 (23.75%)
-NGOs/CBOs	0 (0%)	0 (0%)	1 (100%)	0 (0%)
-Relevant Ministry	0 (0%)	8 (100%)	0 (0%)	0 (0%)
Nepal	**44 (68.75%)**	**15 (23.44%)**	**2 (3.13%)**	**3 (4.69%)**
-Department	23 (76.67%)	7 (23.33%)	0 (0%)	0 (0%)
-Citizen	9 (52.94%)	6 (35.29%)	2 (11.76%)	0 (0%)
-NGOs/CBOs	4 (66.67%)	2 (33.33%)	0 (0%)	0 (0%)
-Relevant Ministry	8 (72.73%)	0 (0%)	0 (0%)	3 (27.27%)
Mongolia	**73 (57.48%)**	**25 (19.69%)**	**10 (7.87%)**	**19 (14.96%)**
-Department	37 (80.43%)	9 (19.57%)	0 (0%)	0 (0%)
-Citizen	34 (48.57%)	15 (21.43%)	5 (7.14%)	16 (22.86%)
-NGOs/CBOs	0 (0%)	1 (11.11%)	5 (55.56%)	3 (33.33%)
-Relevant Ministry	2 (100%)	0 (0%)	0 (0%)	0 (0%)
Sri Lanka	**20 (35.09%)**	**7 (12.28%)**	**20 (35.09%)**	**10 (17.54%)**
-Department	0 (0%)	1 (25%)	3 (75%)	0 (0%)
-Citizen	16 (42.11%)	6 (15.79%)	8 (21.05%)	8 (21.05%)
-NGOs/CBOs	0 (0%)	0 (0%)	8 (88.89%)	1 (11.11%)
-Relevant Ministry	4 (66.67%)	0 (0%)	1 (16.67%)	1 (16.67%)

The major barrier faced by developing economies in implementing integrated e-governance methodologies around 34%,42%,47%,44%,73% and 20% from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka respectively agreed that unequal access to technology and internet are the reasons for its non-implementation. Few respondents have responded the reason as overabundance of technical infrastructure, lack of citizen interest in e-governance and excessive digital literacy among citizens as major barrier.

Table 10: Key role of public feedback in integrated e-governance systems

Country	To determine government employee salaries	To track political popularity of leaders	To improve project monitoring, service delivery, and policy adjustments	To limit citizen access to government services
India	**71 (12.05%)**	**71 (12.05%)**	**372 (63.16%)**	**75 (12.73%)**
-Department	33 (25.19%)	16 (12.21%)	64 (48.85%)	18 (13.74%)
-Citizen	30 (9.2%)	50 (15.34%)	199 (61.04%)	47 (14.42%)
-NGOs/CBOs	4 (4.21%)	2 (2.11%)	81 (85.26%)	8 (8.42%)
-Relevant Ministry	4 (10.81%)	3 (8.11%)	28 (75.68%)	2 (5.41%)
Bangladesh	**28 (23.73%)**	**20 (16.95%)**	**50 (42.37%)**	**20 (16.95%)**
-Department	16 (24.62%)	13 (20%)	25 (38.46%)	11 (16.92%)
-Citizen	6 (30%)	3 (15%)	8 (40%)	3 (15%)

Country	To determine government employee salaries	To track political popularity of leaders	To improve project monitoring, service delivery, and policy adjustments	To limit citizen access to government services
-NGOs/CBOs	2 (15.38%)	1 (7.69%)	6 (46.15%)	4 (30.77%)
-Relevant Ministry	4 (20%)	3 (15%)	11 (55%)	2 (10%)
Mozambique	**23 (23.23%)**	**25 (25.25%)**	**45 (45.45%)**	**6 (6.06%)**
-Department	2 (20%)	0 (0%)	6 (60%)	2 (20%)
-Citizen	13 (16.25%)	24 (30%)	39 (48.75%)	4 (5%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	8 (100%)	0 (0%)	0 (0%)	0 (0%)
Nepal	**1 (1.56%)**	**3 (4.69%)**	**40 (62.5%)**	**20 (31.25%)**
-Department	0 (0%)	0 (0%)	21 (70%)	9 (30%)
-Citizen	0 (0%)	0 (0%)	7 (41.18%)	10 (58.82%)
-NGOs/CBOs	1 (16.67%)	0 (0%)	4 (66.67%)	1 (16.67%)
-Relevant Ministry	0 (0%)	3 (27.27%)	8 (72.73%)	0 (0%)
Mongolia	**21 (16.54%)**	**24 (18.9%)**	**67 (52.76%)**	**15 (11.81%)**
-Department	0 (0%)	0 (0%)	35 (76.09%)	11 (23.91%)
-Citizen	20 (28.57%)	16 (22.86%)	30 (42.86%)	4 (5.71%)

Country	To determine government employee salaries	To track political popularity of leaders	To improve project monitoring, service delivery, and policy adjustments	To limit citizen access to government services
-NGOs/CBOs	1 (11.11%)	8 (88.89%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	2 (100%)	0 (0%)
Sri Lanka	**11 (19.3%)**	**13 (22.81%)**	**20 (35.09%)**	**13 (22.81%)**
-Department	1 (25%)	0 (0%)	2 (50%)	1 (25%)
-Citizen	3 (7.89%)	9 (23.68%)	14 (36.84%)	12 (31.58%)
-NGOs/CBOs	5 (55.56%)	4 (44.44%)	0 (0%)	0 (0%)
-Relevant Ministry	2 (33.33%)	0 (0%)	4 (66.67%)	0 (0%)

Around 63%, 42%, 45%, 40%, 63% & 35% respondent for India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka respective agree that public feedback in integrated e-governance systems is required to improve project monitoring, service delivery, and policy adjustment. It indicates that there is a need for integrated public feedback system for monitoring and its success of e-governanc for good governance practices

Table 11: E-governance tools is most likely to improve the efficiency of public service delivery in developing countries.

Country	Centralized government databases for service tracking	E-learning platforms for government employees	E-banking systems for government employees	Digital financial platforms for tax collection
India	**319 (54.16%)**	**127 (21.56%)**	**66 (11.21%)**	**77 (13.07%)**
-Department	65 (49.62%)	31 (23.66%)	15 (11.45%)	20 (15.27%)
-Citizen	159 (48.77%)	89 (27.3%)	34 (10.43%)	44 (13.5%)
-NGOs/CBOs	70 (73.68%)	4 (4.21%)	13 (13.68%)	8 (8.42%)
-Relevant Ministry	25 (67.57%)	3 (8.11%)	4 (10.81%)	5 (13.51%)
Bangladesh	**46 (38.98%)**	**24 (20.34%)**	**33 (27.97%)**	**15 (12.71%)**
-Department	23 (35.38%)	15 (23.08%)	18 (27.69%)	9 (13.85%)
-Citizen	8 (40%)	4 (20%)	7 (35%)	1 (5%)
-NGOs/CBOs	7 (53.85%)	2 (15.38%)	4 (30.77%)	0 (0%)
-Relevant Ministry	8 (40%)	3 (15%)	4 (20%)	5 (25%)
Mozambique	**58 (58.59%)**	**21 (21.21%)**	**6 (6.06%)**	**14 (14.14%)**
-Department	6 (60%)	4 (40%)	0 (0%)	0 (0%)
-Citizen	44 (55%)	17 (21.25%)	5 (6.25%)	14 (17.5%)
-NGOs/CBOs	0 (0%)	0 (0%)	1 (100%)	0 (0%)
-Relevant	8 (100%)	0 (0%)	0 (0%)	0 (0%)

Country	Centralized government databases for service tracking	E-learning platforms for government employees	E-banking systems for government employees	Digital financial platforms for tax collection
Ministry				
Nepal	**26 (40.63%)**	**18 (28.13%)**	**18 (28.13%)**	**2 (3.13%)**
-Department	8 (26.67%)	13 (43.33%)	9 (30%)	0 (0%)
-Citizen	9 (52.94%)	0 (0%)	8 (47.06%)	0 (0%)
-NGOs/CBOs	4 (66.67%)	2 (33.33%)	0 (0%)	0 (0%)
-Relevant Ministry	5 (45.45%)	3 (27.27%)	1 (9.09%)	2 (18.18%)
Mongolia	**67 (52.76%)**	**32 (25.2%)**	**14 (11.02%)**	**14 (11.02%)**
-Department	22 (47.83%)	15 (32.61%)	9 (19.57%)	0 (0%)
-Citizen	34 (48.57%)	17 (24.29%)	5 (7.14%)	14 (20%)
-NGOs/CBOs	9 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant Ministry	2 (100%)	0 (0%)	0 (0%)	0 (0%)
Sri Lanka	**24 (42.11%)**	**18 (31.58%)**	**9 (15.79%)**	**6 (10.53%)**
-Department	3 (75%)	1 (25%)	0 (0%)	0 (0%)
-Citizen	16 (42.11%)	7 (18.42%)	9 (23.68%)	6 (15.79%)
-NGOs/CBOs	1 (11.11%)	8 (88.89%)	0 (0%)	0 (0%)
-Relevant Ministry	4 (66.67%)	2 (33.33%)	0 (0%)	0 (0%)

Around 54%, 39%,59%, 41%,53% and 42% respondent are of the view that for improving the efficiency of public service delivery in developing economies that there is need to develop a centralised government database for service tracking, delivables and feed backs. Here comes the need how to integrate and the best solution seems to use of unique identification code (AADHAR Card) and connect all public service delivery for good governance, proper management in developing economies.

Table 12: Which factor is most critical for ensuring the long-term success of e-governance projects in developing economies?

Country	Comprehensive legal frameworks	High-tech infrastructure	Digital literacy programs for citizens	Consistent government funding from international donors
India	**87 (14.77%)**	**66 (11.21%)**	**327 (55.52%)**	**109 (18.51%)**
-Department	39 (29.77%)	21 (16.03%)	54 (41.22%)	17 (12.98%)
-Citizen	39 (11.96%)	38 (11.66%)	166 (50.92%)	83 (25.46%)
-NGOs/CBOs	2 (2.11%)	4 (4.21%)	81 (85.26%)	8 (8.42%)
-Relevant Ministry	7 (18.92%)	3 (8.11%)	26 (70.27%)	1 (2.7%)
Bangladesh	**24 (20.34%)**	**23 (19.49%)**	**45 (38.14%)**	**26 (22.03%)**
-Department	14 (21.54%)	15 (23.08%)	20 (30.77%)	16 (24.62%)
-Citizen	2 (10%)	3 (15%)	10 (50%)	5 (25%)
-NGOs/CBOs	1 (7.69%)	2 (15.38%)	6 (46.15%)	4 (30.77%)

Country	Comprehensive legal frameworks	High-tech infrastructure	Digital literacy programs for citizens	Consistent government funding from international donors
-Relevant Ministry	7 (35%)	3 (15%)	9 (45%)	1 (5%)
Mozambique	**27 (27.27%)**	**17 (17.17%)**	**42 (42.42%)**	**13 (13.13%)**
-Department	2 (20%)	0 (0%)	2 (20%)	6 (60%)
-Citizen	25 (31.25%)	16 (20%)	32 (40%)	7 (8.75%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	8 (100%)	0 (0%)
Nepal	**17 (26.56%)**	**2 (3.13%)**	**41 (64.06%)**	**4 (6.25%)**
-Department	12 (40%)	0 (0%)	18 (60%)	0 (0%)
-Citizen	0 (0%)	0 (0%)	14 (82.35%)	3 (17.65%)
-NGOs/CBOs	2 (33.33%)	0 (0%)	4 (66.67%)	0 (0%)
-Relevant Ministry	3 (27.27%)	2 (18.18%)	5 (45.45%)	1 (9.09%)
Mongolia	**39 (30.71%)**	**16 (12.6%)**	**65 (51.18%)**	**7 (5.51%)**
-Department	14 (30.43%)	0 (0%)	32 (69.57%)	0 (0%)
-Citizen	25 (35.71%)	16 (22.86%)	28 (40%)	1 (1.43%)
-NGOs/CBOs	0 (0%)	0 (0%)	3 (33.33%)	6 (66.67%)
-Relevant	0 (0%)	0 (0%)	2 (100%)	0 (0%)

Country	Comprehensive legal frameworks	High-tech infrastructure	Digital literacy programs for citizens	Consistent government funding from international donors
Ministry				
Sri Lanka	**21 (36.84%)**	**4 (7.02%)**	**25 (43.86%)**	**7 (12.28%)**
-Department	1 (25%)	0 (0%)	0 (0%)	3 (75%)
-Citizen	10 (26.32%)	3 (7.89%)	21 (55.26%)	4 (10.53%)
-NGOs/CBOs	9 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant Ministry	1 (16.67%)	1 (16.67%)	4 (66.67%)	0 (0%)

The critical and major factor for ensuring long-term success of e-governance projects in developing economies. It is found that there is lack digital literacy among its citizens, consistent government funding from international donars etc. are some of the few reasons as indicated by the respondents. For the success of long term e-govenance goals around 55%,38%, 42%,64%,51% and 44% from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the opinion that there is a need for enhancing digital literacy and awarness among its citizens.

Table 13: How do stakeholders generally perceive the adoption of integrated e-governance methodologies?

Country	As a way to increase transparency, efficiency, and citizen engagement	As a disruption to existing systems with no clear benefits	As a temporary trend with limited impact	As a tool for reducing digital literacy among the population
India	**265 (44.99%)**	**107 (18.17%)**	**115 (19.52%)**	**102 (17.32%)**
-Department	59 (45.04%)	25 (19.08%)	39 (29.77%)	8 (6.11%)
-Citizen	151 (46.32%)	70 (21.47%)	56 (17.18%)	49 (15.03%)
-NGOs/CBOs	36 (37.89%)	10 (10.53%)	19 (20%)	30 (31.58%)
-Relevant Ministry	19 (51.35%)	2 (5.41%)	1 (2.7%)	15 (40.54%)
Bangladesh	**48 (40.68%)**	**16 (13.56%)**	**21 (17.8%)**	**33 (27.97%)**
-Department	24 (36.92%)	10 (15.38%)	17 (26.15%)	14 (21.54%)
-Citizen	9 (45%)	2 (10%)	2 (10%)	7 (35%)
-NGOs/CBOs	3 (23.08%)	2 (15.38%)	1 (7.69%)	7 (53.85%)
-Relevant Ministry	12 (60%)	2 (10%)	1 (5%)	5 (25%)
Mozambique	**41 (41.41%)**	**21 (21.21%)**	**2 (2.02%)**	**35 (35.35%)**
-Department	5 (50%)	0 (0%)	2 (20%)	3 (30%)
-Citizen	36 (45%)	20 (25%)	0 (0%)	24 (30%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)

Country	As a way to increase transparency, efficiency, and citizen engagement	As a disruption to existing systems with no clear benefits	As a temporary trend with limited impact	As a tool for reducing digital literacy among the population
-Relevant Ministry	0 (0%)	0 (0%)	0 (0%)	8 (100%)
Nepal	**11 (17.19%)**	**14 (21.88%)**	**21 (32.81%)**	**18 (28.13%)**
-Department	0 (0%)	3 (10%)	16 (53.33%)	11 (36.67%)
-Citizen	5 (29.41%)	9 (52.94%)	3 (17.65%)	0 (0%)
-NGOs/CBOs	0 (0%)	0 (0%)	1 (16.67%)	5 (83.33%)
-Relevant Ministry	6 (54.55%)	2 (18.18%)	1 (9.09%)	2 (18.18%)
Mongolia	**50 (39.37%)**	**23 (18.11%)**	**17 (13.39%)**	**37 (29.13%)**
-Department	26 (56.52%)	3 (6.52%)	17 (36.96%)	0 (0%)
-Citizen	20 (28.57%)	20 (28.57%)	0 (0%)	30 (42.86%)
-NGOs/CBOs	3 (33.33%)	0 (0%)	0 (0%)	6 (66.67%)
-Relevant Ministry	1 (50%)	0 (0%)	0 (0%)	1 (50%)
Sri Lanka	**31 (54.39%)**	**10 (17.54%)**	**6 (10.53%)**	**10 (17.54%)**
-Department	2 (50%)	0 (0%)	1 (25%)	1 (25%)
-Citizen	19 (50%)	9 (23.68%)	5 (13.16%)	5 (13.16%)
-NGOs/CBOs	9 (100%)	0 (0%)	0 (0%)	0 (0%)

Country	As a way to increase transparency, efficiency, and citizen engagement	As a disruption to existing systems with no clear benefits	As a temporary trend with limited impact	As a tool for reducing digital literacy among the population
-Relevant Ministry	1 (16.67%)	1 (16.67%)	0 (0%)	4 (66.67%)

As the survey was undertaken among stakeholders consisting of Sr. government officials, NGOs/CBOs and Citizen the adoption of integrated e-governance methodolodies would result so as to increase transparency, efficiency, and citizen engagement. Around 44%, 41%, 41%, 17%, 39% and 54% from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka endorse the need for an integrated approach.

Table 14: Primary purpose of using mobile applications for e-governance in developing economies

Country	To collect taxes from citizens more efficiently	To increase the size of the government bureaucracy	To reduce the workload of government employees	To deliver services and information more directly to citizens
India	**99 (16.81%)**	**88 (14.94%)**	**104 (17.66%)**	**298 (50.59%)**
-Department	34 (25.95%)	25 (19.08%)	27 (20.61%)	45 (34.35%)
-Citizen	54 (16.56%)	45 (13.8%)	59 (18.1%)	168 (51.53%)
-NGOs/CBOs	8 (8.42%)	13 (13.68%)	15 (15.79%)	59 (62.11%)
-Relevant Ministry	3 (8.11%)	5 (13.51%)	3 (8.11%)	26 (70.27%)

Country	To collect taxes from citizens more efficiently	To increase the size of the government bureaucracy	To reduce the workload of government employees	To deliver services and information more directly to citizens
Bangladesh	**24 (20.34%)**	**32 (27.12%)**	**15 (12.71%)**	**47 (39.83%)**
-Department	14 (21.54%)	18 (27.69%)	10 (15.38%)	23 (35.38%)
-Citizen	3 (15%)	7 (35%)	1 (5%)	9 (45%)
-NGOs/CBOs	4 (30.77%)	2 (15.38%)	1 (7.69%)	6 (46.15%)
-Relevant Ministry	3 (15%)	5 (25%)	3 (15%)	9 (45%)
Mozambique	**12 (12.12%)**	**15 (15.15%)**	**23 (23.23%)**	**49 (49.49%)**
-Department	2 (20%)	0 (0%)	0 (0%)	8 (80%)
-Citizen	9 (11.25%)	15 (18.75%)	23 (28.75%)	33 (41.25%)
-NGOs/CBOs	1 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	0 (0%)	8 (100%)
Nepal	**14 (21.88%)**	**10 (15.63%)**	**5 (7.81%)**	**35 (54.69%)**
-Department	12 (40%)	7 (23.33%)	0 (0%)	11 (36.67%)
-Citizen	0 (0%)	0 (0%)	4 (23.53%)	13 (76.47%)
-NGOs/CBOs	2 (33.33%)	0 (0%)	0 (0%)	4 (66.67%)
-Relevant Ministry	0 (0%)	3 (27.27%)	1 (9.09%)	7 (63.64%)
Mongolia	**23 (18.11%)**	**22 (17.32%)**	**23 (18.11%)**	**59 (46.46%)**
-Department	14 (30.43%)	7 (15.22%)	0 (0%)	25 (54.35%)
-Citizen	9 (12.86%)	15 (21.43%)	23 (32.86%)	23 (32.86%)
-NGOs/CBOs	0 (0%)	0 (0%)	0 (0%)	9 (100%)

Country	To collect taxes from citizens more efficiently	To increase the size of the government bureaucracy	To reduce the workload of government employees	To deliver services and information more directly to citizens
-Relevant Ministry	0 (0%)	0 (0%)	0 (0%)	2 (100%)
Sri Lanka	**8 (14.04%)**	**9 (15.79%)**	**12 (21.05%)**	**28 (49.12%)**
-Department	1 (25%)	0 (0%)	0 (0%)	3 (75%)
-Citizen	6 (15.79%)	2 (5.26%)	9 (23.68%)	21 (55.26%)
-NGOs/CBOs	1 (11.11%)	7 (77.78%)	1 (11.11%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	2 (33.33%)	4 (66.67%)

Mobile being handy, affordable a question on its usage through mobile application for e-governance in developing economies was asked.51%,40%, 49%,55%,46% and 49% India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka agree that using mobile as a mode of communication it would enhance delivery services timely and information more directly communicated to its citizen

Table 15: Major barrier to e-governance adoption in developing economies ?

Country	High levels of citizen digital literacy	Cultural resistance to digital government services	Strong governmental support	Widespread availability of high-speed internet
India	**69 (11.71%)**	**332 (56.37%)**	**131 (22.24%)**	**57 (9.68%)**
-Department	21 (16.03%)	59 (45.04%)	33 (25.19%)	18 (13.74%)
-Citizen	44 (13.5%)	164 (50.31%)	89 (27.3%)	29 (8.9%)

Country	High levels of citizen digital literacy	Cultural resistance to digital government services	Strong governmental support	Widespread availability of high-speed internet
-NGOs/CBOs	0 (0%)	83 (87.37%)	4 (4.21%)	8 (8.42%)
-Relevant Ministry	4 (10.81%)	26 (70.27%)	5 (13.51%)	2 (5.41%)
Bangladesh	**21 (17.8%)**	**48 (40.68%)**	**33 (27.97%)**	**16 (13.56%)**
-Department	13 (20%)	24 (36.92%)	20 (30.77%)	8 (12.31%)
-Citizen	4 (20%)	8 (40%)	6 (30%)	2 (10%)
-NGOs/CBOs	0 (0%)	7 (53.85%)	2 (15.38%)	4 (30.77%)
-Relevant Ministry	4 (20%)	9 (45%)	5 (25%)	2 (10%)
Mozambique	**7 (7.07%)**	**56 (56.57%)**	**5 (5.05%)**	**31 (31.31%)**
-Department	0 (0%)	5 (50%)	3 (30%)	2 (20%)
-Citizen	6 (7.5%)	50 (62.5%)	1 (1.25%)	23 (28.75%)
-NGOs/CBOs	1 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	1 (12.5%)	1 (12.5%)	6 (75%)
Nepal	**4 (6.25%)**	**47 (73.44%)**	**4 (6.25%)**	**9 (14.06%)**
-Department	0 (0%)	26 (86.67%)	0 (0%)	4 (13.33%)
-Citizen	0 (0%)	8 (47.06%)	4 (23.53%)	5 (29.41%)
-NGOs/CBOs	0 (0%)	6 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	4 (36.36%)	7 (63.64%)	0 (0%)	0 (0%)
Mongolia	**7 (5.51%)**	**85 (66.93%)**	**2 (1.57%)**	**33 (25.98%)**
-Department	0 (0%)	42 (91.3%)	0 (0%)	4 (8.7%)

Country	High levels of citizen digital literacy	Cultural resistance to digital government services	Strong governmental support	Widespread availability of high-speed internet
-Citizen	6 (8.57%)	42 (60%)	2 (2.86%)	20 (28.57%)
-NGOs/CBOs	0 (0%)	0 (0%)	0 (0%)	9 (100%)
-Relevant Ministry	1 (50%)	1 (50%)	0 (0%)	0 (0%)
Sri Lanka	**6 (10.53%)**	**19 (33.33%)**	**17 (29.82%)**	**15 (26.32%)**
-Department	0 (0%)	0 (0%)	3 (75%)	1 (25%)
-Citizen	6 (15.79%)	15 (39.47%)	4 (10.53%)	13 (34.21%)
-NGOs/CBOs	0 (0%)	0 (0%)	9 (100%)	0 (0%)
-Relevant Ministry	0 (0%)	4 (66.67%)	1 (16.67%)	1 (16.67%)

On the question asked on major barrier to e-governance adoption in developing economies, respondent have indicated to cultural resistance to digital government services. Around 56%, 41%,56%,73%,67% and 33% from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka agree to the above. Few respondent indicate other reasons as major barrier. More capacity building and awarness programmes can eliminate this gaps.

Table 16 : What is a potential benefit of implementing integrated e-governance methodologies in developing economies?

Country	Limited citizen engagement and participation	Improved governance effectiveness and project management efficiency	Increased reliance on manual administrative processes	Reduced transparency and accountability
India	**88 (14.94%)**	**348 (59.08%)**	**63 (10.7%)**	**90 (15.28%)**
-Department	41 (31.3%)	43 (32.82%)	20 (15.27%)	27 (20.61%)
-Citizen	42 (12.88%)	193 (59.2%)	33 (10.12%)	58 (17.79%)
-NGOs/CBOs	2 (2.11%)	85 (89.47%)	6 (6.32%)	2 (2.11%)
-Relevant Ministry	3 (8.11%)	27 (72.97%)	4 (10.81%)	3 (8.11%)
Bangladesh	**22 (18.64%)**	**50 (42.37%)**	**24 (20.34%)**	**22 (18.64%)**
-Department	16 (24.62%)	23 (35.38%)	12 (18.46%)	14 (21.54%)
-Citizen	2 (10%)	9 (45%)	5 (25%)	4 (20%)
-NGOs/CBOs	1 (7.69%)	8 (61.54%)	3 (23.08%)	1 (7.69%)
-Relevant Ministry	3 (15%)	10 (50%)	4 (20%)	3 (15%)
Mozambique	**7 (7.07%)**	**45 (45.45%)**	**19 (19.19%)**	**28 (28.28%)**
-Department	0 (0%)	5 (50%)	3 (30%)	2 (20%)
-Citizen	1 (1.25%)	39 (48.75%)	14 (17.5%)	26 (32.5%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	6 (75%)	0 (0%)	2 (25%)	0 (0%)
Nepal	**3 (4.69%)**	**34 (53.13%)**	**7 (10.94%)**	**20 (31.25%)**
-Department	3 (10%)	14 (46.67%)	0 (0%)	13 (43.33%)

Country	Limited citizen engagement and participation	Improved governance effectiveness and project management efficiency	Increased reliance on manual administrative processes	Reduced transparency and accountability
-Citizen	0 (0%)	8 (47.06%)	5 (29.41%)	4 (23.53%)
-NGOs/CBOs	0 (0%)	5 (83.33%)	0 (0%)	1 (16.67%)
-Relevant Ministry	0 (0%)	7 (63.64%)	2 (18.18%)	2 (18.18%)
Mongolia	**10 (7.87%)**	**61 (48.03%)**	**16 (12.6%)**	**40 (31.5%)**
-Department	3 (6.52%)	29 (63.04%)	0 (0%)	14 (30.43%)
-Citizen	6 (8.57%)	29 (41.43%)	13 (18.57%)	22 (31.43%)
-NGOs/CBOs	1 (11.11%)	1 (11.11%)	3 (33.33%)	4 (44.44%)
-Relevant Ministry	0 (0%)	2 (100%)	0 (0%)	0 (0%)
Sri Lanka	**14 (24.56%)**	**19 (33.33%)**	**18 (31.58%)**	**6 (10.53%)**
-Department	0 (0%)	0 (0%)	3 (75%)	1 (25%)
-Citizen	9 (23.68%)	15 (39.47%)	10 (26.32%)	4 (10.53%)
-NGOs/CBOs	5 (55.56%)	0 (0%)	4 (44.44%)	0 (0%)
-Relevant Ministry	0 (0%)	4 (66.67%)	1 (16.67%)	1 (16.67%)

On the question asked regarding the potential benefit of implementing integrated e-governance 59%, 42%,45%,53%,48% and 33% respondent from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that it would improve governance effectiveness and project management efficiency.

Table 17:How can the risks and challenges of integrated e-governance be mitigated?

Country	By focusing on physical infrastructure over digital solutions	By limiting citizen participation and involvement in e-governance	By reducing government spending on technology	Through better cybersecurity, digital literacy programs, and infrastructure upgrades
India	**108 (18.34%)**	**86 (14.6%)**	**95 (16.13%)**	**300 (50.93%)**
-Department	18 (13.74%)	33 (25.19%)	19 (14.5%)	61 (46.56%)
-Citizen	86 (26.38%)	41 (12.58%)	70 (21.47%)	129 (39.57%)
-NGOs/CBOs	2 (2.11%)	10 (10.53%)	2 (2.11%)	81 (85.26%)
-Relevant Ministry	2 (5.41%)	2 (5.41%)	4 (10.81%)	29 (78.38%)
Bangladesh	**17 (14.41%)**	**24 (20.34%)**	**29 (24.58%)**	**48 (40.68%)**
-Department	11 (16.92%)	14 (21.54%)	18 (27.69%)	22 (33.85%)
-Citizen	3 (15%)	3 (15%)	6 (30%)	8 (40%)
-NGOs/CBOs	1 (7.69%)	5 (38.46%)	1 (7.69%)	6 (46.15%)
-Relevant Ministry	2 (10%)	2 (10%)	4 (20%)	12 (60%)
Mozambique	**24 (24.24%)**	**12 (12.12%)**	**13 (13.13%)**	**50 (50.51%)**
-Department	3 (30%)	2 (20%)	0 (0%)	5 (50%)
-Citizen	12 (15%)	10 (12.5%)	13 (16.25%)	45 (56.25%)
-NGOs/CBOs	1 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant	8 (100%)	0 (0%)	0 (0%)	0 (0%)

Country	By focusing on physical infrastructure over digital solutions	By limiting citizen participation and involvement in e-governance	By reducing government spending on technology	Through better cybersecurity, digital literacy programs, and infrastructure upgrades
Ministry				
Nepal	**1 (1.56%)**	**7 (10.94%)**	**28 (43.75%)**	**28 (43.75%)**
-Department	0 (0%)	6 (20%)	16 (53.33%)	8 (26.67%)
-Citizen	0 (0%)	0 (0%)	7 (41.18%)	10 (58.82%)
-NGOs/CBOs	0 (0%)	0 (0%)	2 (33.33%)	4 (66.67%)
-Relevant Ministry	1 (9.09%)	1 (9.09%)	3 (27.27%)	6 (54.55%)
Mongolia	**20 (15.75%)**	**16 (12.6%)**	**32 (25.2%)**	**59 (46.46%)**
-Department	0 (0%)	6 (13.04%)	18 (39.13%)	22 (47.83%)
-Citizen	14 (20%)	10 (14.29%)	10 (14.29%)	36 (51.43%)
-NGOs/CBOs	6 (66.67%)	0 (0%)	3 (33.33%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	1 (50%)	1 (50%)
Sri Lanka	**8 (14.04%)**	**18 (31.58%)**	**10 (17.54%)**	**21 (36.84%)**
-Department	3 (75%)	1 (25%)	0 (0%)	0 (0%)
-Citizen	5 (13.16%)	7 (18.42%)	9 (23.68%)	17 (44.74%)
-NGOs/CBOs	0 (0%)	9 (100%)	0 (0%)	0 (0%)
-Relevant	0 (0%)	1 (16.67%)	1 (16.67%)	4 (66.67%)

Country	By focusing on physical infrastructure over digital solutions	By limiting citizen participation and involvement in e-governance	By reducing government spending on technology	Through better cybersecurity, digital literacy programs, and infrastructure upgrades
Ministry				

Question on how to mitigate risks and challenges of integrated e-governance, 51%,41%,50%,44%46% and 37% respondent from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that this can be resolved through better cyber security, digital literacy programs and infrastructures upgrades.

Table 18: Which of the following strategies can governments and policymakers use to facilitate the transition to integrated e-governance in developing economies ?

Country	Limiting e-governance initiatives to government-led projects to retain full control.	Focusing on technology deployment without considering the digital literacy needs of the population.	Developing comprehensive policies and legal regulations that support the digital transformation of government services	None of these
India	**78 (13.24%)**	**132 (22.41%)**	**333 (56.54%)**	**46 (7.81%)**
-Department	29 (22.14%)	25 (19.08%)	60 (45.8%)	17 (12.98%)
-Citizen	38 (11.66%)	102 (31.29%)	163 (50%)	23 (7.06%)
-NGOs/CBOs	6 (6.32%)	2 (2.11%)	85 (89.47%)	2 (2.11%)
-Relevant Ministry	5 (13.51%)	3 (8.11%)	25 (67.57%)	4 (10.81%)
Bangladesh	**25 (21.19%)**	**29 (24.58%)**	**48 (40.68%)**	**16 (13.56%)**

Country	Limiting e-governance initiatives to government-led projects to retain full control.	Focusing on technology deployment without considering the digital literacy needs of the population.	Developing comprehensive policies and legal regulations that support the digital transformation of government services	None of these
-Department	12 (18.46%)	22 (33.85%)	24 (36.92%)	7 (10.77%)
-Citizen	5 (25%)	3 (15%)	8 (40%)	4 (20%)
-NGOs/CBOs	3 (23.08%)	1 (7.69%)	8 (61.54%)	1 (7.69%)
-Relevant Ministry	5 (25%)	3 (15%)	8 (40%)	4 (20%)
Mozambique	**11 (11.11%)**	**17 (17.17%)**	**49 (49.49%)**	**22 (22.22%)**
-Department	0 (0%)	0 (0%)	8 (80%)	2 (20%)
-Citizen	2 (2.5%)	17 (21.25%)	41 (51.25%)	20 (25%)
-NGOs/CBOs	1 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant Ministry	8 (100%)	0 (0%)	0 (0%)	0 (0%)
Nepal	**8 (12.5%)**	**16 (25%)**	**29 (45.31%)**	**11 (17.19%)**
-Department	1 (3.33%)	11 (36.67%)	13 (43.33%)	5 (16.67%)
-Citizen	1 (5.88%)	2 (11.76%)	11 (64.71%)	3 (17.65%)
-NGOs/CBOs	4 (66.67%)	2 (33.33%)	0 (0%)	0 (0%)
-Relevant Ministry	2 (18.18%)	1 (9.09%)	5 (45.45%)	3 (27.27%)
Mongolia	**18 (14.17%)**	**30 (23.62%)**	**54 (42.52%)**	**25 (19.69%)**
-Department	8 (17.39%)	13 (28.26%)	20 (43.48%)	5 (10.87%)

Country	Limiting e-governance initiatives to government-led projects to retain full control.	Focusing on technology deployment without considering the digital literacy needs of the population.	Developing comprehensive policies and legal regulations that support the digital transformation of government services	None of these
-Citizen	9 (12.86%)	11 (15.71%)	32 (45.71%)	18 (25.71%)
-NGOs/CBOs	1 (11.11%)	6 (66.67%)	0 (0%)	2 (22.22%)
-Relevant Ministry	0 (0%)	0 (0%)	2 (100%)	0 (0%)
Sri Lanka	**7 (12.28%)**	**11 (19.3%)**	**22 (38.6%)**	**17 (29.82%)**
-Department	0 (0%)	0 (0%)	3 (75%)	1 (25%)
-Citizen	6 (15.79%)	3 (7.89%)	14 (36.84%)	15 (39.47%)
-NGOs/CBOs	1 (11.11%)	8 (88.89%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	5 (83.33%)	1 (16.67%)

Question on what strategies can governments and policymakers use to facilitate the transition to integrated e-governance in developing economies. 56%, 41%,49%,45%, 42% and 38% of respondents from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that this can be resolved by developing comprehensive policies and legal regulations that support the digital transformation of government services

Table 19: Key success factors for the successful implementation of integrated e-governance methodologies in developing economies.

Country	High levels of bureaucracy, limited citizen access to technology, and minimal investment in infrastructure	Lack of government involvement, no training programs, and limited internet access	Strong political will, investment in digital infrastructure, and citizen engagement	Over-reliance on foreign technology, reduced transparency, and centralized decision-making
India	**67 (11.38%)**	**111 (18.85%)**	**289 (49.07%)**	**122 (20.71%)**
-Department	20 (15.27%)	31 (23.66%)	44 (33.59%)	36 (27.48%)
-Citizen	41 (12.58%)	70 (21.47%)	136 (41.72%)	79 (24.23%)
-NGOs/CBOs	2 (2.11%)	8 (8.42%)	81 (85.26%)	4 (4.21%)
-Relevant Ministry	4 (10.81%)	2 (5.41%)	28 (75.68%)	3 (8.11%)
Bangladesh	**17 (14.41%)**	**28 (23.73%)**	**54 (45.76%)**	**19 (16.1%)**
-Department	10 (15.38%)	17 (26.15%)	29 (44.62%)	9 (13.85%)
-Citizen	2 (10%)	5 (25%)	8 (40%)	5 (25%)
-NGOs/CBOs	1 (7.69%)	4 (30.77%)	6 (46.15%)	2 (15.38%)
-Relevant Ministry	4 (20%)	2 (10%)	11 (55%)	3 (15%)
Mozambique	**16 (16.16%)**	**28 (28.28%)**	**53 (53.54%)**	**2 (2.02%)**
-Department	0 (0%)	0 (0%)	8 (80%)	2 (20%)
-Citizen	16 (20%)	22 (27.5%)	42 (52.5%)	0 (0%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	5 (62.5%)	3 (37.5%)	0 (0%)

Country	High levels of bureaucracy, limited citizen access to technology, and minimal investment in infrastructure	Lack of government involvement, no training programs, and limited internet access	Strong political will, investment in digital infrastructure, and citizen engagement	Over-reliance on foreign technology, reduced transparency, and centralized decision-making
Nepal	**4 (6.25%)**	**22 (34.38%)**	**29 (45.31%)**	**9 (14.06%)**
-Department	0 (0%)	15 (50%)	10 (33.33%)	5 (16.67%)
-Citizen	0 (0%)	3 (17.65%)	10 (58.82%)	4 (23.53%)
-NGOs/CBOs	0 (0%)	2 (33.33%)	4 (66.67%)	0 (0%)
-Relevant Ministry	4 (36.36%)	2 (18.18%)	5 (45.45%)	0 (0%)
Mongolia	**16 (12.6%)**	**44 (34.65%)**	**62 (48.82%)**	**5 (3.94%)**
-Department	0 (0%)	17 (36.96%)	24 (52.17%)	5 (10.87%)
-Citizen	16 (22.86%)	18 (25.71%)	36 (51.43%)	0 (0%)
-NGOs/CBOs	0 (0%)	9 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	2 (100%)	0 (0%)
Sri Lanka	**12 (21.05%)**	**3 (5.26%)**	**26 (45.61%)**	**16 (28.07%)**
-Department	0 (0%)	0 (0%)	3 (75%)	1 (25%)
-Citizen	8 (21.05%)	3 (7.89%)	18 (47.37%)	9 (23.68%)
-NGOs/CBOs	4 (44.44%)	0 (0%)	0 (0%)	5 (55.56%)
-Relevant Ministry	0 (0%)	0 (0%)	5 (83.33%)	1 (16.67%)

On the question asked on the key success factors for the successful implementation of integrated e-governance methodologies in developing economies. 49%,46%,53%,45%, 49% and 46% of respondents from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that this achieved if there is a strong political will, investment in digital infrastructure, and citizen engagement. The case study and success story of Mongolia where 49% agree to this is an example for other developing economies to accept and adopt the integrated approach.

Table 20: Primary goal of integrating e-governance methodologies in developing economies

Country	To outsource government operations to private firms	To increase transparency, efficiency, and citizen participation	To reduce the cost of public services	To centralize government control
India	**91 (15.45%)**	**319 (54.16%)**	**80 (13.58%)**	**99 (16.81%)**
-Department	28 (21.37%)	60 (45.8%)	7 (5.34%)	36 (27.48%)
-Citizen	55 (16.87%)	147 (45.09%)	64 (19.63%)	60 (18.4%)
-NGOs/CBOs	4 (4.21%)	83 (87.37%)	6 (6.32%)	2 (2.11%)
-Relevant Ministry	4 (10.81%)	29 (78.38%)	3 (8.11%)	1 (2.7%)
Bangladesh	**23 (19.49%)**	**49 (41.53%)**	**29 (24.58%)**	**17 (14.41%)**
-Department	15 (23.08%)	22 (33.85%)	16 (24.62%)	12 (18.46%)
-Citizen	2 (10%)	8 (40%)	7 (35%)	3 (15%)
-NGOs/CBOs	2 (15.38%)	7 (53.85%)	3 (23.08%)	1 (7.69%)
-Relevant Ministry	4 (20%)	12 (60%)	3 (15%)	1 (5%)

Country	To outsource government operations to private firms	To increase transparency, efficiency, and citizen participation	To reduce the cost of public services	To centralize government control
Mozambique	**15 (15.15%)**	**49 (49.49%)**	**11 (11.11%)**	**24 (24.24%)**
-Department	0 (0%)	8 (80%)	0 (0%)	2 (20%)
-Citizen	7 (8.75%)	40 (50%)	11 (13.75%)	22 (27.5%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	8 (100%)	0 (0%)	0 (0%)	0 (0%)
Nepal	**3 (4.69%)**	**34 (53.13%)**	**15 (23.44%)**	**12 (18.75%)**
-Department	0 (0%)	15 (50%)	5 (16.67%)	10 (33.33%)
-Citizen	3 (17.65%)	10 (58.82%)	4 (23.53%)	0 (0%)
-NGOs/CBOs	0 (0%)	3 (50%)	3 (50%)	0 (0%)
-Relevant Ministry	0 (0%)	6 (54.55%)	3 (27.27%)	2 (18.18%)
Mongolia	**24 (18.9%)**	**52 (40.94%)**	**19 (14.96%)**	**32 (25.2%)**
-Department	9 (19.57%)	19 (41.3%)	8 (17.39%)	10 (21.74%)
-Citizen	14 (20%)	31 (44.29%)	4 (5.71%)	21 (30%)
-NGOs/CBOs	1 (11.11%)	0 (0%)	7 (77.78%)	1 (11.11%)
-Relevant Ministry	0 (0%)	2 (100%)	0 (0%)	0 (0%)
Sri Lanka	**6 (10.53%)**	**24 (42.11%)**	**16 (28.07%)**	**11 (19.3%)**
-Department	0 (0%)	3 (75%)	0 (0%)	1 (25%)
-Citizen	6 (15.79%)	17 (44.74%)	12 (31.58%)	3 (7.89%)
-NGOs/CBOs	0 (0%)	0 (0%)	2 (22.22%)	7 (77.78%)

Country	To outsource government operations to private firms	To increase transparency, efficiency, and citizen participation	To reduce the cost of public services	To centralize government control
-Relevant Ministry	0 (0%)	4 (66.67%)	2 (33.33%)	0 (0%)

On the question asked about the primary goal of integrating the existing decentralised e-governance methodologies, 54%, 41%,49%, 53%,41% and 42% of respondents from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that this would result into increasing transperancy, efficiency, accountablity and citizen participation.

Table 21: How do integrated e-governance systems impact governance in developing economies ?

Country	They centralize power and limit local government autonomy	They reduce transparency and increase corruption risks	They focus on government secrecy and control	They improve accountability, reduce corruption, and streamline processes
India	**61 (10.36%)**	**115 (19.52%)**	**71 (12.05%)**	**342 (58.06%)**
-Department	28 (21.37%)	30 (22.9%)	18 (13.74%)	55 (41.98%)
-Citizen	26 (7.98%)	75 (23.01%)	49 (15.03%)	176 (53.99%)
-NGOs/CBOs	4 (4.21%)	6 (6.32%)	2 (2.11%)	83 (87.37%)
-Relevant Ministry	3 (8.11%)	4 (10.81%)	2 (5.41%)	28 (75.68%)
Bangladesh	**30 (25.42%)**	**23 (19.49%)**	**14 (11.86%)**	**51 (43.22%)**
-Department	21 (32.31%)	11 (16.92%)	8 (12.31%)	25 (38.46%)

Country	They centralize power and limit local government autonomy	They reduce transparency and increase corruption risks	They focus on government secrecy and control	They improve accountability, reduce corruption, and streamline processes
-Citizen	4 (20%)	5 (25%)	3 (15%)	8 (40%)
-NGOs/CBOs	2 (15.38%)	3 (23.08%)	1 (7.69%)	7 (53.85%)
-Relevant Ministry	3 (15%)	4 (20%)	2 (10%)	11 (55%)
Mozambique	**27 (27.27%)**	**4 (4.04%)**	**17 (17.17%)**	**51 (51.52%)**
-Department	0 (0%)	3 (30%)	1 (10%)	6 (60%)
-Citizen	27 (33.75%)	1 (1.25%)	11 (13.75%)	41 (51.25%)
-NGOs/CBOs	0 (0%)	0 (0%)	1 (100%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	4 (50%)	4 (50%)
Nepal	**5 (7.81%)**	**13 (20.31%)**	**13 (20.31%)**	**33 (51.56%)**
-Department	2 (6.67%)	5 (16.67%)	7 (23.33%)	16 (53.33%)
-Citizen	0 (0%)	2 (11.76%)	4 (23.53%)	11 (64.71%)
-NGOs/CBOs	1 (16.67%)	3 (50%)	0 (0%)	2 (33.33%)
-Relevant Ministry	2 (18.18%)	3 (27.27%)	2 (18.18%)	4 (36.36%)
Mongolia	**40 (31.5%)**	**9 (7.09%)**	**22 (17.32%)**	**56 (44.09%)**
-Department	13 (28.26%)	8 (17.39%)	7 (15.22%)	18 (39.13%)
-Citizen	20 (28.57%)	1 (1.43%)	14 (20%)	35 (50%)
-NGOs/CBOs	7 (77.78%)	0 (0%)	1 (11.11%)	1 (11.11%)
-Relevant Ministry	0 (0%)	0 (0%)	0 (0%)	2 (100%)

Country	They centralize power and limit local government autonomy	They reduce transparency and increase corruption risks	They focus on government secrecy and control	They improve accountability, reduce corruption, and streamline processes
Sri Lanka	**9 (15.79%)**	**21 (36.84%)**	**5 (8.77%)**	**22 (38.6%)**
-Department	0 (0%)	3 (75%)	1 (25%)	0 (0%)
-Citizen	8 (21.05%)	8 (21.05%)	4 (10.53%)	18 (47.37%)
-NGOs/CBOs	1 (11.11%)	8 (88.89%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	2 (33.33%)	0 (0%)	4 (66.67%)

Question on integrated e-governance systems impact governance in developing economies, 58%,43%,51%,52%,48% and 39% of respondents from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that this would result in improving accountability, reduce corruption and streamline processes.

Table 22: How can e-governance improve project management in developing countries?

Country	By centralizing all decision-making to a single government body	By limiting public access to government decision-making	By providing a platform for real-time project monitoring, data collection, and feedback	By reducing the need for government employees
India	**138 (23.43%)**	**79 (13.41%)**	**301 (51.1%)**	**71 (12.05%)**
-Department	27 (20.61%)	33 (25.19%)	50 (38.17%)	21 (16.03%)
-Citizen	106 (32.52%)	40 (12.27%)	142 (43.56%)	38 (11.66%)

Country	By centralizing all decision-making to a single government body	By limiting public access to government decision-making	By providing a platform for real-time project monitoring, data collection, and feedback	By reducing the need for government employees
-NGOs/CBOs	4 (4.21%)	2 (2.11%)	81 (85.26%)	8 (8.42%)
-Relevant Ministry	1 (2.7%)	4 (10.81%)	28 (75.68%)	4 (10.81%)
Bangladesh	**13 (11.02%)**	**20 (16.95%)**	**60 (50.85%)**	**25 (21.19%)**
-Department	8 (12.31%)	14 (21.54%)	40 (61.54%)	3 (4.62%)
-Citizen	2 (10%)	1 (5%)	12 (60%)	5 (25%)
-NGOs/CBOs	2 (15.38%)	1 (7.69%)	4 (30.77%)	6 (46.15%)
-Relevant Ministry	1 (5%)	4 (20%)	4 (20%)	11 (55%)
Mozambique	**17 (17.17%)**	**22 (22.22%)**	**48 (48.48%)**	**12 (12.12%)**
-Department	0 (0%)	1 (10%)	5 (50%)	4 (40%)
-Citizen	17 (21.25%)	20 (25%)	35 (43.75%)	8 (10%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	8 (100%)	0 (0%)
Nepal	**8 (12.5%)**	**9 (14.06%)**	**30 (46.88%)**	**17 (26.56%)**
-Department	2 (6.67%)	7 (23.33%)	14 (46.67%)	7 (23.33%)
-Citizen	0 (0%)	0 (0%)	11 (64.71%)	6 (35.29%)

Country	By centralizing all decision-making to a single government body	By limiting public access to government decision-making	By providing a platform for real-time project monitoring, data collection, and feedback	By reducing the need for government employees
-NGOs/CBOs	4 (66.67%)	0 (0%)	0 (0%)	2 (33.33%)
-Relevant Ministry	2 (18.18%)	2 (18.18%)	5 (45.45%)	2 (18.18%)
Mongolia	**30 (23.62%)**	**27 (21.26%)**	**53 (41.73%)**	**17 (13.39%)**
-Department	13 (28.26%)	7 (15.22%)	17 (36.96%)	9 (19.57%)
-Citizen	17 (24.29%)	20 (28.57%)	25 (35.71%)	8 (11.43%)
-NGOs/CBOs	0 (0%)	0 (0%)	9 (100%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	2 (100%)	0 (0%)
Sri Lanka	**15 (26.32%)**	**11 (19.3%)**	**22 (38.6%)**	**9 (15.79%)**
-Department	0 (0%)	1 (25%)	0 (0%)	3 (75%)
-Citizen	5 (13.16%)	9 (23.68%)	18 (47.37%)	6 (15.79%)
-NGOs/CBOs	8 (88.89%)	1 (11.11%)	0 (0%)	0 (0%)
-Relevant Ministry	2 (33.33%)	0 (0%)	4 (66.67%)	0 (0%)

On the question asked how can e-governance improve project management in developing countries, 51%,51%,48%,47%, 42% and 39% of respondents from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that by

providing a integrated platform for real time project monitoring, data collection and feedback mechanism the developing countries where limited resources including finance and expert manpower are available can be used to the optimum use.

Table 23: How does integrated e-governance enhance the accountability of government officials ?

Country	By allowing government officials to avoid scrutiny	By making it more difficult for citizens to report issues	By centralizing all information and making it accessible to the public	By reducing the need for monitoring and reporting systems
India	**133 (22.66%)**	**84 (14.31%)**	**299 (50.94%)**	**71 (12.1%)**
-Department	29 (22.14%)	35 (26.72%)	62 (47.33%)	5 (3.82%)
-Citizen	92 (28.31%)	42 (12.92%)	127 (39.08%)	64 (19.69%)
-NGOs/CBOs	8 (8.42%)	4 (4.21%)	81 (85.26%)	2 (2.11%)
-Relevant Ministry	4 (11.11%)	3 (8.33%)	29 (80.56%)	0 (0%)
Bangladesh	**27 (23.08%)**	**25 (21.37%)**	**47 (40.17%)**	**18 (15.38%)**
-Department	15 (23.08%)	18 (27.69%)	20 (30.77%)	12 (18.46%)
-Citizen	4 (20%)	2 (10%)	9 (45%)	5 (25%)
-NGOs/CBOs	4 (30.77%)	2 (15.38%)	6 (46.15%)	1 (7.69%)

Country	By allowing government officials to avoid scrutiny	By making it more difficult for citizens to report issues	By centralizing all information and making it accessible to the public	By reducing the need for monitoring and reporting systems
-Relevant Ministry	4 (21.05%)	3 (15.79%)	12 (63.16%)	0 (0%)
Mozambique	**8 (8.08%)**	**29 (29.29%)**	**54 (54.55%)**	**8 (8.08%)**
-Department	0 (0%)	3 (30%)	7 (70%)	0 (0%)
-Citizen	7 (8.75%)	26 (32.5%)	46 (57.5%)	1 (1.25%)
-NGOs/CBOs	1 (100%)	0 (0%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	1 (12.5%)	7 (87.5%)
Nepal	**8 (12.7%)**	**26 (41.27%)**	**28 (44.44%)**	**1 (1.59%)**
-Department	2 (6.67%)	15 (50%)	13 (43.33%)	0 (0%)
-Citizen	0 (0%)	8 (47.06%)	8 (47.06%)	1 (5.88%)
-NGOs/CBOs	4 (66.67%)	0 (0%)	2 (33.33%)	0 (0%)
-Relevant Ministry	2 (20%)	3 (30%)	5 (50%)	0 (0%)
Mongolia	**16 (12.6%)**	**41 (32.28%)**	**62 (48.82%)**	**8 (6.3%)**
-Department	9 (19.57%)	15 (32.61%)	22 (47.83%)	0 (0%)
-Citizen	7 (10%)	18 (25.71%)	38 (54.29%)	7 (10%)
-NGOs/CBOs	0 (0%)	8 (88.89%)	0 (0%)	1 (11.11%)
-Relevant Ministry	0 (0%)	0 (0%)	2 (100%)	0 (0%)
Sri Lanka	**16 (28.07%)**	**13 (22.81%)**	**19 (33.33%)**	**9 (15.79%)**

Country	By allowing government officials to avoid scrutiny	By making it more difficult for citizens to report issues	By centralizing all information and making it accessible to the public	By reducing the need for monitoring and reporting systems
-Department	0 (0%)	4 (100%)	0 (0%)	0 (0%)
-Citizen	9 (23.68%)	8 (21.05%)	15 (39.47%)	6 (15.79%)
-NGOs/CBOs	7 (77.78%)	0 (0%)	0 (0%)	2 (22.22%)
-Relevant Ministry	0 (0%)	1 (16.67%)	4 (66.67%)	1 (16.67%)

On the question asked regarding the enhancement of accountability of government officials by adopting integrated e-governance 51%, 47%, 54%, 44%, 49% and 33% of respondents from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that by providing a integrated centralized all information and making it accessible to the public the government officials will become more cautious in taking any decision which has bad intention and has vested interest in-built in it

Table 24: Role of data security in building trust with citizens in developing countries

Country	It is not necessary as citizens have little interest in government data	It is only relevant for developed countries	It focuses solely on protecting government internal communications	It ensures that citizens' personal and financial data is protected from misuse
India	**81 (13.75%)**	**83 (14.09%)**	**107 (18.17%)**	**318 (53.99%)**
-Department	15 (11.45%)	32 (24.43%)	20 (15.27%)	64 (48.85%)

Country	It is not necessary as citizens have little interest in government data	It is only relevant for developed countries	It focuses solely on protecting government internal communications	It ensures that citizens' personal and financial data is protected from misuse
-Citizen	57 (17.48%)	43 (13.19%)	80 (24.54%)	146 (44.79%)
-NGOs/CBOs	4 (4.21%)	6 (6.32%)	2 (2.11%)	83 (87.37%)
-Relevant Ministry	5 (13.51%)	2 (5.41%)	5 (13.51%)	25 (67.57%)
Bangladesh	**28 (23.73%)**	**25 (21.19%)**	**23 (19.49%)**	**42 (35.59%)**
-Department	17 (26.15%)	16 (24.62%)	12 (18.46%)	20 (30.77%)
-Citizen	4 (20%)	4 (20%)	5 (25%)	7 (35%)
-NGOs/CBOs	2 (15.38%)	3 (23.08%)	1 (7.69%)	7 (53.85%)
-Relevant Ministry	5 (25%)	2 (10%)	5 (25%)	8 (40%)
Mozambique	**19 (19.19%)**	**4 (4.04%)**	**26 (26.26%)**	**50 (50.51%)**
-Department	2 (20%)	3 (30%)	0 (0%)	5 (50%)
-Citizen	9 (11.25%)	1 (1.25%)	25 (31.25%)	45 (56.25%)
-NGOs/CBOs	0 (0%)	0 (0%)	1 (100%)	0 (0%)
-Relevant Ministry	8 (100%)	0 (0%)	0 (0%)	0 (0%)
Nepal	**13 (20.31%)**	**3 (4.69%)**	**12 (18.75%)**	**36 (56.25%)**
-Department	6 (20%)	1 (3.33%)	8 (26.67%)	15 (50%)

Country	It is not necessary as citizens have little interest in government data	It is only relevant for developed countries	It focuses solely on protecting government internal communications	It ensures that citizens' personal and financial data is protected from misuse
-Citizen	7 (41.18%)	0 (0%)	0 (0%)	10 (58.82%)
-NGOs/CBOs	0 (0%)	1 (16.67%)	0 (0%)	5 (83.33%)
-Relevant Ministry	0 (0%)	1 (9.09%)	4 (36.36%)	6 (54.55%)
Mongolia	**23 (18.11%)**	**13 (10.24%)**	**33 (25.98%)**	**58 (45.67%)**
-Department	6 (13.04%)	12 (26.09%)	8 (17.39%)	20 (43.48%)
-Citizen	16 (22.86%)	1 (1.43%)	17 (24.29%)	36 (51.43%)
-NGOs/CBOs	1 (11.11%)	0 (0%)	8 (88.89%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	0 (0%)	2 (100%)
Sri Lanka	**14 (24.56%)**	**9 (15.79%)**	**13 (22.81%)**	**21 (36.84%)**
-Department	2 (50%)	2 (50%)	0 (0%)	0 (0%)
-Citizen	10 (26.32%)	2 (5.26%)	9 (23.68%)	17 (44.74%)
-NGOs/CBOs	0 (0%)	5 (55.56%)	4 (44.44%)	0 (0%)
-Relevant Ministry	2 (33.33%)	0 (0%)	0 (0%)	4 (66.67%)

On the question asked regarding e-governance systems, what is the role of data security in building trust with citizens in developing countries. 54%,36%,50%,56%,46% and 36% of respondents from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri

Lanka are of the view that it will ensures its citizens' personal and financial data is well protected from its misuse

Table 25: Can IoT based solutions, Artificial Intelligence and Cloud Computing can help in Integrated approach for e-governance, good governance and project management and monitoring purpose in developing economies ?

Country	Not Sure due to resistance and acceptability	Surely it will be possible	Definitely to some extend	None of the above
India	**77 (13.07%)**	**310 (52.63%)**	**139 (23.6%)**	**63 (10.7%)**
-Department	52 (39.69%)	61 (46.56%)	12 (9.16%)	6 (4.58%)
-Citizen	14 (4.29%)	138 (42.33%)	122 (37.42%)	52 (15.95%)
-NGOs/CBOs	10 (10.53%)	83 (87.37%)	0 (0%)	2 (2.11%)
-Relevant Ministry	1 (2.7%)	28 (75.68%)	5 (13.51%)	3 (8.11%)
Bangladesh	**9 (7.63%)**	**55 (46.61%)**	**37 (31.36%)**	**17 (14.41%)**
-Department	2 (3.08%)	29 (44.62%)	26 (40%)	8 (12.31%)
-Citizen	1 (5%)	8 (40%)	6 (30%)	5 (25%)
-NGOs/CBOs	5 (38.46%)	7 (53.85%)	0 (0%)	1 (7.69%)
-Relevant Ministry	1 (5%)	11 (55%)	5 (25%)	3 (15%)
Mozambique	**1 (1.01%)**	**57 (57.58%)**	**30 (30.3%)**	**11 (11.11%)**

Country	Not Sure due to resistance and acceptability	Surely it will be possible	Definitely to some extend	None of the above
-Department	0 (0%)	8 (80%)	2 (20%)	0 (0%)
-Citizen	1 (1.25%)	48 (60%)	28 (35%)	3 (3.75%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	0 (0%)	8 (100%)
Nepal	**8 (12.5%)**	**26 (40.63%)**	**27 (42.19%)**	**3 (4.69%)**
-Department	2 (6.67%)	7 (23.33%)	21 (70%)	0 (0%)
-Citizen	5 (29.41%)	7 (41.18%)	2 (11.76%)	3 (17.65%)
-NGOs/CBOs	0 (0%)	4 (66.67%)	2 (33.33%)	0 (0%)
-Relevant Ministry	1 (9.09%)	8 (72.73%)	2 (18.18%)	0 (0%)
Mongolia	**3 (2.36%)**	**62 (48.82%)**	**51 (40.16%)**	**11 (8.66%)**
-Department	2 (4.35%)	21 (45.65%)	23 (50%)	0 (0%)
-Citizen	1 (1.43%)	39 (55.71%)	20 (28.57%)	10 (14.29%)
-NGOs/CBOs	0 (0%)	0 (0%)	8 (88.89%)	1 (11.11%)
-Relevant Ministry	0 (0%)	2 (100%)	0 (0%)	0 (0%)
Sri Lanka	**8 (14.04%)**	**28 (49.12%)**	**7 (12.28%)**	**14 (24.56%)**

Country	Not Sure due to resistance and acceptability	Surely it will be possible	Definitely to some extend	None of the above
-Department	0 (0%)	3 (75%)	1 (25%)	0 (0%)
-Citizen	7 (18.42%)	16 (42.11%)	2 (5.26%)	13 (34.21%)
-NGOs/CBOs	1 (11.11%)	5 (55.56%)	3 (33.33%)	0 (0%)
-Relevant Ministry	0 (0%)	4 (66.67%)	1 (16.67%)	1 (16.67%)

On the question asked regarding IoT based solutions, Artificial Intelligence and Cloud Computing can help in Integrated approach for e-governance, good governance and project management and monitoring purpose in developing economies**.** 53%, 47%, 58%,41%, 49% and 49% of respondents from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that it will surely be possible.

Table 26: Impact of the single point collection system of taxes and the segregation of tax responsibilities between the State and Central Governments

Country	It leads to the simplification of tax administration and ensures a clearer division of tax revenues between the state and central governments.	It allows the central government to collect all taxes, while states have no role in tax administration.	It eliminates the need for states to collect any taxes, shifting all responsibility to the central government.	It creates confusion in tax administration due to overlapping tax responsibilities between the state and central governments.
India	**309 (52.46%)**	**82 (13.92%)**	**93 (15.79%)**	**105 (17.83%)**

Country	It leads to the simplification of tax administration and ensures a clearer division of tax revenues between the state and central governments.	It allows the central government to collect all taxes, while states have no role in tax administration.	It eliminates the need for states to collect any taxes, shifting all responsibility to the central government.	It creates confusion in tax administration due to overlapping tax responsibilities between the state and central governments.
-Department	53 (40.46%)	17 (12.98%)	21 (16.03%)	40 (30.53%)
-Citizen	142 (43.56%)	55 (16.87%)	67 (20.55%)	62 (19.02%)
-NGOs/CBOs	85 (89.47%)	6 (6.32%)	2 (2.11%)	2 (2.11%)
-Relevant Ministry	29 (78.38%)	4 (10.81%)	3 (8.11%)	1 (2.7%)
Bangladesh	**56 (47.46%)**	**27 (22.88%)**	**18 (15.25%)**	**17 (14.41%)**
-Department	28 (43.08%)	14 (21.54%)	10 (15.38%)	13 (20%)
-Citizen	8 (40%)	6 (30%)	4 (20%)	2 (10%)
-NGOs/CBOs	8 (61.54%)	3 (23.08%)	1 (7.69%)	1 (7.69%)
-Relevant Ministry	12 (60%)	4 (20%)	3 (15%)	1 (5%)
Mozambique	**43 (43.43%)**	**27 (27.27%)**	**10 (10.1%)**	**19 (19.19%)**
-Department	6 (60%)	2 (20%)	2 (20%)	0 (0%)
-Citizen	37 (46.25%)	16 (20%)	8 (10%)	19 (23.75%)
-NGOs/CBOs	0 (0%)	1 (100%)	0 (0%)	0 (0%)
-Relevant Ministry	0 (0%)	8 (100%)	0 (0%)	0 (0%)
Nepal	**30 (46.88%)**	**16 (25%)**	**15 (23.44%)**	**3 (4.69%)**

Country	It leads to the simplification of tax administration and ensures a clearer division of tax revenues between the state and central governments.	It allows the central government to collect all taxes, while states have no role in tax administration.	It eliminates the need for states to collect any taxes, shifting all responsibility to the central government.	It creates confusion in tax administration due to overlapping tax responsibilities between the state and central governments.
-Department	8 (26.67%)	12 (40%)	10 (33.33%)	0 (0%)
-Citizen	9 (52.94%)	0 (0%)	5 (29.41%)	3 (17.65%)
-NGOs/CBOs	4 (66.67%)	2 (33.33%)	0 (0%)	0 (0%)
-Relevant Ministry	9 (81.82%)	2 (18.18%)	0 (0%)	0 (0%)
Mongolia	**52 (40.94%)**	**38 (29.92%)**	**18 (14.17%)**	**19 (14.96%)**
-Department	22 (47.83%)	14 (30.43%)	10 (21.74%)	0 (0%)
-Citizen	24 (34.29%)	19 (27.14%)	8 (11.43%)	19 (27.14%)
-NGOs/CBOs	4 (44.44%)	5 (55.56%)	0 (0%)	0 (0%)
-Relevant Ministry	2 (100%)	0 (0%)	0 (0%)	0 (0%)
Sri Lanka	**28 (49.12%)**	**9 (15.79%)**	**13 (22.81%)**	**7 (12.28%)**
-Department	2 (50%)	1 (25%)	1 (25%)	0 (0%)
-Citizen	21 (55.26%)	7 (18.42%)	4 (10.53%)	6 (15.79%)
-NGOs/CBOs	0 (0%)	1 (11.11%)	8 (88.89%)	0 (0%)
-Relevant Ministry	5 (83.33%)	0 (0%)	0 (0%)	1 (16.67%)

On the question of best statement which suit the impact of the single point collection system of taxes and the segregation of tax responsibilities between the State and Central Governments in India. 52%, 47%,43%,47%,41% and 49% of respondents from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that it would leads to the simplification of tax administration and ensures a clearer division of tax revenues between the state and central governments

Table 27: Primary purpose of integrating the Aadhaar card into government services and programs.

Country	To ensure that all citizens receive a unique identification number for personal use.	To create a database for tracking citizens' health records exclusively.	To streamline and enhance the efficiency of service delivery and welfare schemes through a centralized database.	To monitor financial transactions of citizens across all sectors.
India	**62 (10.53%)**	**122 (20.71%)**	**297 (50.42%)**	**108 (18.34%)**
-Department	21 (16.03%)	24 (18.32%)	60 (45.8%)	26 (19.85%)
-Citizen	37 (11.35%)	89 (27.3%)	127 (38.96%)	73 (22.39%)
-NGOs/CBOs	2 (2.11%)	4 (4.21%)	83 (87.37%)	6 (6.32%)
-Relevant Ministry	2 (5.41%)	5 (13.51%)	27 (72.97%)	3 (8.11%)
Bangladesh	**21 (17.8%)**	**22 (18.64%)**	**52 (44.07%)**	**23 (19.49%)**
-Department	12 (18.46%)	11 (16.92%)	27 (41.54%)	15 (23.08%)
-Citizen	6 (30%)	4 (20%)	8 (40%)	2 (10%)

Country	To ensure that all citizens receive a unique identification number for personal use.	To create a database for tracking citizens' health records exclusively.	To streamline and enhance the efficiency of service delivery and welfare schemes through a centralized database.	To monitor financial transactions of citizens across all sectors.
-NGOs/CBOs	1 (7.69%)	2 (15.38%)	7 (53.85%)	3 (23.08%)
-Relevant Ministry	2 (10%)	5 (25%)	10 (50%)	3 (15%)
Mozambique	**14 (14.14%)**	**8 (8.08%)**	**57 (57.58%)**	**20 (20.2%)**
-Department	4 (40%)	0 (0%)	6 (60%)	0 (0%)
-Citizen	10 (12.5%)	8 (10%)	50 (62.5%)	12 (15%)
-NGOs/CBOs	0 (0%)	0 (0%)	1 (100%)	0 (0%)
-Relevant Ministry	0 (0%)	0 (0%)	0 (0%)	8 (100%)
Nepal	**4 (6.25%)**	**17 (26.56%)**	**40 (62.5%)**	**3 (4.69%)**
-Department	0 (0%)	9 (30%)	20 (66.67%)	1 (3.33%)
-Citizen	2 (11.76%)	5 (29.41%)	9 (52.94%)	1 (5.88%)
-NGOs/CBOs	0 (0%)	2 (33.33%)	3 (50%)	1 (16.67%)
-Relevant Ministry	2 (18.18%)	1 (9.09%)	8 (72.73%)	0 (0%)
Mongolia	**10 (7.87%)**	**19 (14.96%)**	**66 (51.97%)**	**32 (25.2%)**
-Department	0 (0%)	11 (23.91%)	23 (50%)	12 (26.09%)

Country	To ensure that all citizens receive a unique identification number for personal use.	To create a database for tracking citizens' health records exclusively.	To streamline and enhance the efficiency of service delivery and welfare schemes through a centralized database.	To monitor financial transactions of citizens across all sectors.
-Citizen	2 (2.86%)	8 (11.43%)	41 (58.57%)	19 (27.14%)
-NGOs/CBOs	8 (88.89%)	0 (0%)	0 (0%)	1 (11.11%)
-Relevant Ministry	0 (0%)	0 (0%)	2 (100%)	0 (0%)
Sri Lanka	**11 (19.3%)**	**7 (12.28%)**	**35 (61.4%)**	**4 (7.02%)**
-Department	2 (50%)	0 (0%)	2 (50%)	0 (0%)
-Citizen	0 (0%)	5 (13.16%)	29 (76.32%)	4 (10.53%)
-NGOs/CBOs	5 (55.56%)	2 (22.22%)	2 (22.22%)	0 (0%)
-Relevant Ministry	4 (66.67%)	0 (0%)	2 (33.33%)	0 (0%)

On the question of primary purpose of integrating the Aadhaar card/UID into government services and programs, 50%, 44%, 58%,62%,52% and 61% of respondents from India, Bangladesh, Mozambique, Nepal, Mongolia and Sri Lanka are of the view that it would streamline and enhance the efficiency of service delivery and welfare schemes through a centralized database with transparency, timeliness and reduction in corrupt practices so as to encourage fair means of distribution system among masses.

4.5 Conclusion

In the new economy, underpinned by revolutionary changes in science and technology, information and knowledge has become a key factor in economic competitiveness. Developing countries must pursue a more active role in the formulation of national policies and strategies to promote the information economy, to reap huge benefits in terms of economic and social growth/development. E-governance for good governance is believed to play a fundamental role to this end. If does not facilitate market – led initiating but it also plays a major role in initiating the process of capability building and in coordinating the actions of a large number of interested stake holders. It offers the potential of reshaping the public sector activities and processes, building relationships between citizens and the government, enhancing transparency, increasing government capacity and providing a "voice" for those outside the government. The results from the survey indicate that there is a preparedness and acceptability among the masses of these developing economies to begin with the new chapter of integrated e-governance concept keeping in view the benefits of it and moving towards a developed economy.

CHAPTER V:

DISCUSSION

5.1 Discussion of Results

The implementation of integrated e-governance methodologies in developing economies presents both opportunities and challenges. Findings from various case studies, research, and practical implementations and primary surveys reveal a mixture of successes and hurdles that influence how e-governance systems are adopted and function in these settings.

One of the most significant advantages of e-governance is the increased transparency it brings to government operations. Automation and digitization reduce human involvement in repetitive processes, thereby reducing corruption and bureaucratic inefficiencies. For instance, the automation of processes such as tax filing, property registration, and government tendering ensures transparency and limits opportunities for bribery or manipulation. Findings in countries like India (through initiatives like Aadhaar and e-seva) demonstrate substantial progress in reducing corruption and increasing transparency.

E-governance offers an efficient way to provide public services to citizens, particularly in rural or underserved areas. By enabling access to services like health, education, and administrative procedures online, governments can overcome geographic barriers. In developing economies such as Rwanda, the adoption of ICT-based services has shown a marked improvement in public service delivery. The success stories of

Mongolia can be a considered as remarkable example and can be a stepping stone to the developing nations to replicate their best practices for successful implementation of ICT based services in their countries.

The integration of digital platforms allows citizens to engage with government more actively, submit grievances, give feedback, and track the progress of projects. This fosters a sense of inclusion and accountability. In Kenya, for example, e-governance platforms have empowered citizens to track government spending and hold officials accountable, contributing to greater public trust in governance. In Mongolia almost all public dealing are through use of ICT (E-governance) which brings in transparency and public trust in governance.

Integrated e-governance systems provide real-time data on ongoing projects, enabling better decision-making and resource allocation. Digital platforms reduce project delays by offering centralized monitoring systems, which streamline communication between various departments and stakeholders. The "e-GP" (Electronic Government Procurement) system in Bangladesh is an example where better management of public procurement has led to cost savings and improved project execution.

There is no doubt that the global revolution in the internet is reshaping our lives, particularly in the way we work, learn, and interact. Cloud computing, artificial intelligence (AI), and the Internet of Things (IoT) have become pivotal advancements in the field of information technology. Currently, numerous developed and developing nations are adopting cloud technologies due to their various benefits, which significantly enhance the efficiency of e-governance.

Cloud computing enables users to easily rent access to fully featured applications. It also offers environments for software development and deployment, along with computing infrastructure assets such as network-accessible data storage and processing models. Cloud services are primarily categorized into three types: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). These services can simultaneously support many customers.

Importantly, cloud performance remains consistent even during periods of high demand. The accompanying figures—Figure 8: E-Governance and Open Source Environment, Figure 9: E-Governance Structure, and Figure 10: Cloud Services—further illustrate these concepts.

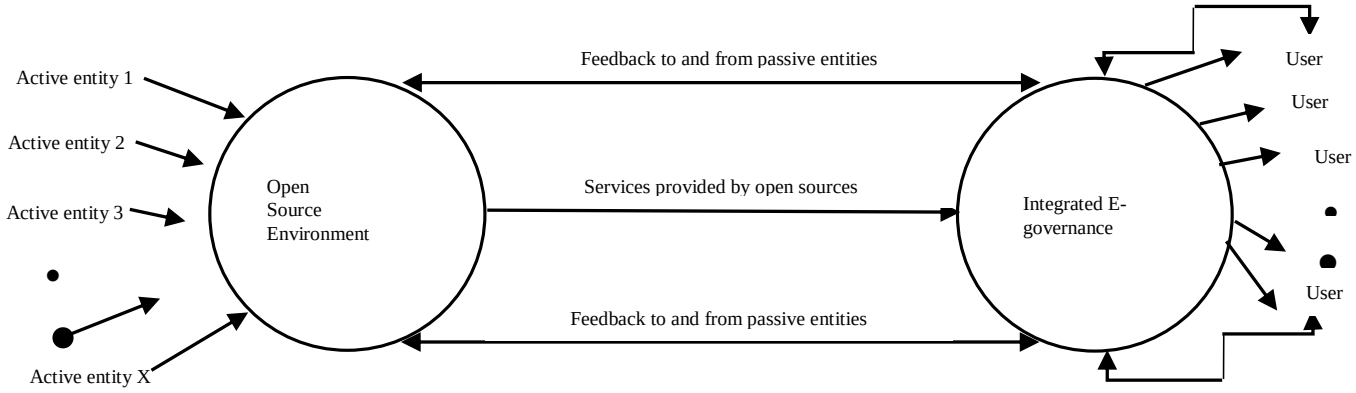

Figure 8: E-governance and open-source environment

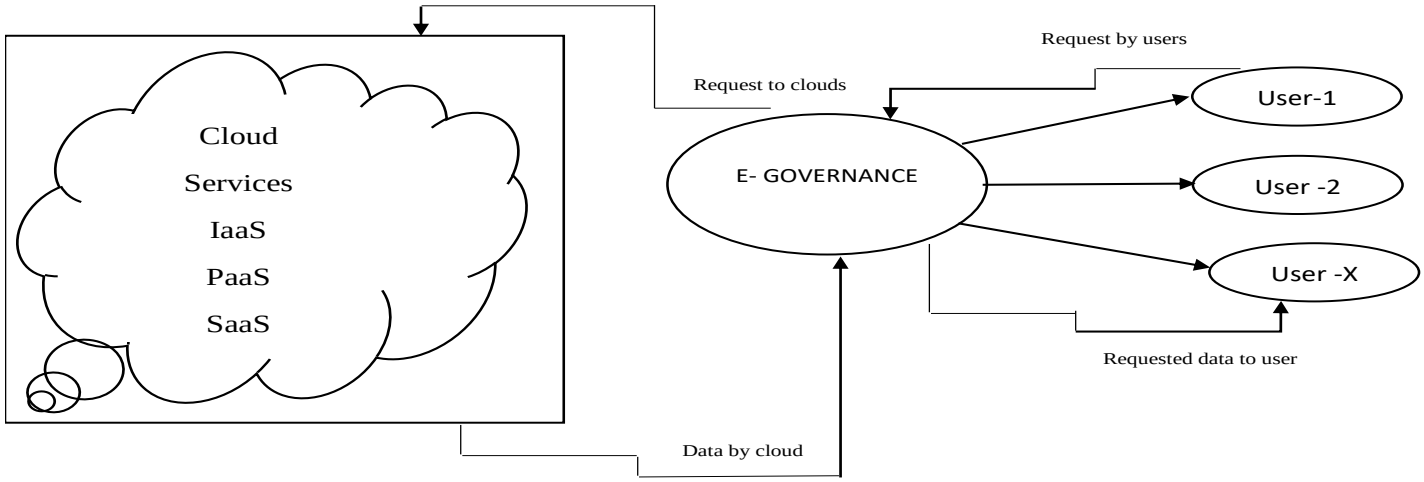

Figure 9: E- Governance structure

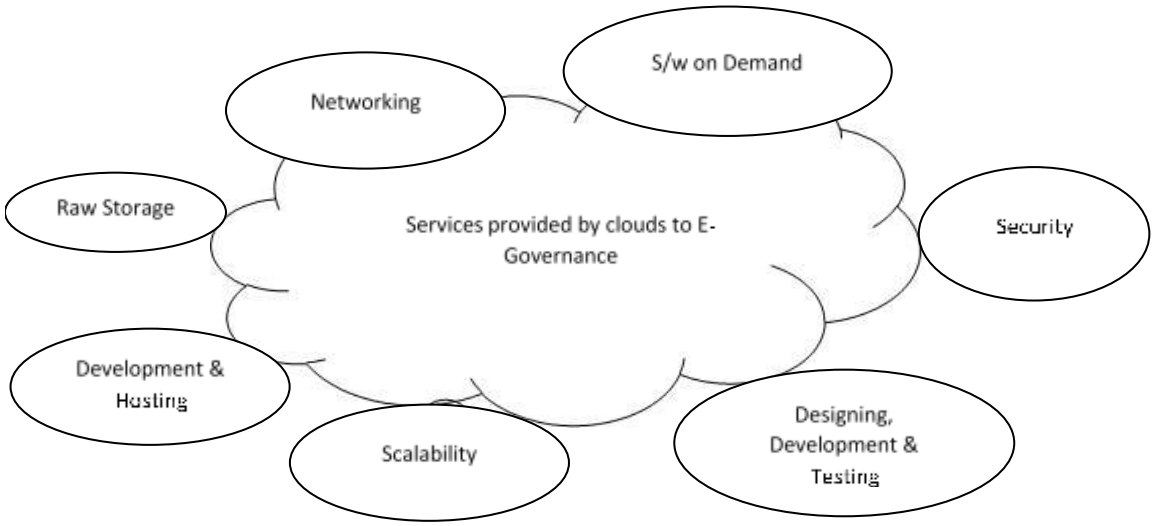

Figure 10: Cloud Services

The primary data collected from 6 developing economies viz. India, Bangladesh, Mozambique, Nepal, Mongolia & Sri Lanka from various stakeholders viz. Relevant Ministries/Departments, NGO's/CBOs and Citizens with a sampling size of 1054 (Refer Table – 1). Detailed analysis was carried out and a Comparative Analysis Country, Stakeholder Wise of the Respondent (Refer Table – 2) was prepared. Based on the findings the discussion on research question one and question two are as given below.

5.2 Discussion of Research Question One

Based on the comparative analysis country, stakeholder wise it is observed that most of the respondents are of the opinion that enhancement of e-governance through integrated approach for developing economies is the need of the hour for the fast-changing technologies and way forward for moving towards developed economies. It is observed that the fastest growing economy been India, should adopt and lead and undertake as a pilot project and other developing economise to follow the same. As India is far ahead in e-governance etc. through its digital india programme in a decentralised or segregated e-governance module operation, integration of its activities would not be a difficult task.

All citizens of India hold a Unique Identification (UID) number named as AADHAAR Card. This UID Number is issued to its citizen based on issue of birth certificate by the hospital and is used throughout his/her life for any financial transaction/payments including any purchases etc. throughout his/her life term. This UID

Number is used as reference and for updating population census data at the time of cremation/burial. At present this practise is in use and is strickly abided in India.

For purchase of properties, vehicle, house tax payments, water connection and its bill payments, electricity connection and its bill payments, telephone connection and its bill payments, gas connection and its bill payments, toll tax tag connection and its bill payments, insurance procurement and its premium payments the UIDs Number is used as of date. All the above payments are through digital mode as of today in a decentralised mode. The answer to the research question can be met by the usage of this recommended solution.

In developing economies, the Government should involve directly or through Public Private Partnership mode (PPP) mode to develop an integrated module by the usage of Cloud computing (IaaS, PaaS and SaaS, Big Data (vast amounts of structured and unstructured data that are generated at high velocity and volume)) by involving Artificial Intelligence (AI) and Internet of Things(IoTs) tools as a support module. The integrated approach should be UID/AADHAAR card-based, under which compiling data, including migration from various sources to a centralised Relational Database Management System (RDBMS), will not be a difficult task. The integrated module covering the following modules can be piloted, and later, its success factors as and when additional modules can be added or deleted.

The modules should include the following as a pilot study and later modules can be added or deleted based on its success factor:

- UID/ADHAAR card number should be user login with user-controlled password change, self-protected through One time Password (OTP) on email or registered mobile number for data privacy and updating its own records etc.
- Integrated E-Governance Module viz. Birth/Death Certificate, Payment of House Tax, Water Bill, Electricity Bill, Gas Bill, Insurance Premium, Credit Card Bill etc.
- As all the above services are linked with UIDs/ADHAAR cards, linking with the bank account number or credit card number, all service payments will be debited/cleared as on the due date without being remembered by the user of its due date payments. This can avoid delayed payments, penalties and fines. An alarm system through SMS or emails can be posted to the user's registered mobile or email IDs just informing the transactions going to happen on the respective dates, etc., for making available adequate funds in their bank account, etc.

The above-integrated module can be used by the masses, which does not involve individual intervention or additional manpower/efforts by the government. With automation and the usage of e-governance, the integrated module can be a boom once it is implemented.

Improving all government services delivery systems through an integrated approach through a single window controlled and monitored through unique identification (UID) by using an ICT solution that would be available online and citizens

can use on their own (no third party required/agents required) would surely benefit the citizens in providing efficient, transparent, and time-saving services.

5.3 Discussion of Research Question Two

Integrated approach for project management information system for the flagship project of national repute from concept to commissioning by use of ICT based tools including IoT, AI, Drone based technologies for its timely, effective, qualitatively, cost effective implementation leading to no cost and time overrun would definitely help the developing economies. Eliminating Cost overrun and Time overrun will result into cost cutting in terms of financial as well as optimum utilization of limited available expert's manpower wherein their utilization is for multiple projects in these developing countries. At present in India Project Management through Enterprise Resource Planning (ERP) are available for individual schemes/projects which do not consolidate the profits and losses due to cost and time overrun on the projects as a country. Government intervention on its own or through Public Private Partnership (PPP) mode should get involved for development of integrated project management information system which can give a holistic picture at a national level. Timely corrective actions, intervention on concurrent monitoring basis can eliminate substantial losses of finance and manpower of the developing economy countries.

Revenue Generation

The existing practices being adopted in India which is an evolving and a fast-developing economy is that the commercial taxes i.e. Goods and Service Taxes (GST) are

collected in a decentralized manner. There is a sharing of taxes revenue among the State(province) government and the Central government. Secondly the taxes paid by one party is reconciled manually on quarterly basis to match that the second party who has received taxes from the first party has deposited to the tax department or not vis a versa it can be other way too.

Many times, this reconciliation activity becomes tiresome and a big headache for the payer as well as the receiver. With an intention to have 100% recovery of taxes and immediate accounting and reconciliation, it needs to be piloted to have the concept of big data through cloud computing and an integrated approach wherein the share of each state(province) and central government get segregated and directly deposited in their books of account. This would result in quick availability/disbursement of eligible revenue to the centre and state. The case study and success story of Mongolia, where the taxes are collected and distributed instantly online when the transaction takes place, can be piloted and tried to be replicated in India and other neighbouring developing countries/economies. Cyber threats and security need to be well taken care of prior to its implementation. The findings and recommendations indicate that its implementation in field and tested tools results in a higher probability of its acceptance by the masses.

Referring to the case study and success stories of Mongolia, revenue-generating modules, it is noticed that government has framed a policy to hand over a pre-loaded integrated taxation module on the laptop on a payment basis to corporate houses, business entities at the time of licensing their business or needs to distribute this on payment basis to the existing corporate houses and business entities. These agencies need to connect the

integrated module through the internet and start working from day one of their operations. For each billing the tax share of state (province) government and central government gets segregated and booked in their respective head of accounts. Since all the taxpayers are in the single umbrella, taxes are paid from one party to another party and simultaneously the receiving party accounts get deducted and paid to taxes department by the other party automatically, hence reconciliation and matching of this transaction manually is not required. At the end of month, a summary statement is generated which is sign investigated of acceptance and uploaded by the respective dealing office. This reduces the work of reconciliation and distribution of taxes among state(province) government and central government. Apart from this there is very less scope for tax evasion and maximum revenue would be generated which can be utilized by the developing economies through budgeting, planning for taking up developmental/infrastructural projects in these developing economies where there is always an issues/challenges of finances and other limited resources.

The case analysis unveils several key insights that can pave the way for effective design and implementation of integrated e-governance initiatives. Here are some valuable tips to keep in mind for success in this transformative journey:

- Initiate an e-readiness assessment study to provide stakeholders with a comprehensive understanding of the current state of telecommunication network infrastructure, the legal and regulatory framework, the available human resources and skillsets, and the primary challenges faced within the country. Utilizing the findings from this assessment, tailored strategies and action plans can be

formulated to effectively develop an integrated e-governance module that supports good governance.

- Promote awareness among public and private organizations by organizing workshops, events, seminars, and conferences aimed at educating a broad audience about the genuine opportunities and benefits presented by the ICT revolution. Develop a long-term strategy and solutions to address current challenges by ensuring access to suitable training programs for the effective management of future technological and business changes.
- Think small, be agile and fast: Begin with a feasible pilot project tailored to specific contexts. Built up steadily the qualifications necessary for facing hindrances. Be prepared to make the required changes as per the need. Agility and flexibility assure success.
- Stimulate collaboration and coordination among government departments and agencies to increase efficiency and effectiveness in process handling. Address challenges and opportunities in strong partnership with private organisations, major donors, research institutions, and universities and support the cross-fertilisation of ideas, solutions, and knowledge.
- Investing in human development is crucial, as the success of e-initiatives primarily relies on the skills and capabilities of individuals. Consequently, prioritizing education and capacity-building measures is essential. Staff should receive training to effectively manage new processes and activities. Additionally, providing non-monetary incentives can help retain skilled individuals and

mitigate brain drain. It is vital for employees to feel included in the organization by engaging them in the decision-making process.

Moreover, basic training should be extended to community members, influential individuals, stakeholders, NGOs, and CBOs. This training will empower them to utilize new resources for accessing electronic information and services effectively.

- Demonstrate sensitivity to local conditions by assessing and evaluating various alternatives, approaches, and solutions for developing digital government. This includes utilizing mobile phones, kiosks, and multi-channel access to services. Identify viable solutions to ensure effective community participation in the information economy.
- Adopt a holistic and comprehensive approach that includes a clear vision and strategy to address the barriers and challenges associated with change. Integrate e-government with other development strategies and policies to ensure widespread adoption. The active involvement of top leaders is crucial, especially in the early stages, to raise awareness, prioritize ICT development at a national level, and foster broad commitment and engagement from both the public and private sectors.
- Prepare to effectively manage knowledge and change by implementing robust knowledge management processes and tools. This will enable the efficient storage, utilization, and retrieval of strategic information and knowledge, ultimately enhancing decision-making. The aim is to support adaptation and

development, facilitate necessary improvements, and consistently pursue innovative and value-added services and solutions.

Developing economies can drive significantly in its improvement/enhancement in its governance, service delivery, and economic growth through integrated methodologies and practices which needs to be designed to align with needs of these economies and leverage technology for broader societal impact. Based on the findings following strategies which needs to include are:

- Strengthening digital infrastructure :
    - Develop robust ICT infrastructure to support e-governance platforms which includes investment in scalable and secure digital infrastructure, broadband internet, data centres and cloud computing solutions.
    - Ensure accessibility i.e. digital platforms in urban and rural areas with low cost and affordable technologies with emphasis on mobile friendly interfaces.
- Integrated e-governance frameworks implementation
    - Single window digital platforms - need to develop integrated, user-friendly digital platform for all government services which can include tax filing, social welfare and health services easily allowable and accessible to its citizens through a single portal
- Data Sharing – Create secure data-sharing frameworks among various department/ministries of government. It would facilitate better decision making,

reduction in redundancies and increases the accuracy and efficiency of public services

  - Cloud based solution by adopting cloud technologies to enable cost-effective, scalable solutions that can be updated regularly without large infrastructure investments

- Improving transparency and accountability
  - Encourage active citizens participation through e-participation platforms, which would help in bridging the communication gaps between governments and citizens, improving transparency and accountability
  - Make public data open and accessible to citizens, businesses which would ensure transparency in government actions and decision-making leading to enhance trust and reduction in corruption
  - To use digital tools for real time monitoring of public projects and expenditure, allowing citizens and watchdog organisations to tract government performance
- Capacity building and skill development
  - Develop e-governance training programs for public servants to improve their digital literacy and project management capabilities. This helps ensure successful implementation and use of e-governance tools.
  - Offer digital literacy programs to empower citizens to fully participate in e-governance systems. This should target underserved communities, women, and marginalized groups.

- Implement specialized training programs in modern project management methodologies (e.g., Agile, Scrum) for government officials involved in e-governance projects to ensure better execution and timely delivery.

- Reforms enhancement – policy and regulatory
  - Establish clear policies and legal frameworks that support e-governance, such as data privacy laws, cyber security regulations, and digital signature leading to trust building in digital systems
  - Collaborations between public sector, private sector companies and NGOs for creating innovative e-governance solutions. It would bring efficiency in service delivery and infrastructure development
  - Create national standards for e-governance systems that promote interoperability, data consistency, and ease of use across platforms and services
- Focus on citizen-centric service delivery
  - Ensure that e-governance solutions are designed with the needs of citizens in mind. It includes reducing complexity, improving accessibility, and ensuring multi-channel availability(mobile apps, websites, offline success points)
  - Incorporate continuous feedback loops from citizens to improve services and systems based on real world usage and issues faced by the population
  - Use AI and data analytics to offer personalized services and solutions to citizens, making government services more relevant and efficient

- Project Management Efficiency in E-Governance Projects
    - Implement agile project management to foster flexibility, rapid response to changes, and iterative improvement in e-governance projects. This is particularly useful in dynamic environments where needs and technologies evolve quickly.
    - Define clear project objectives and measurable outcomes. Break larger e-governance projects into smaller phases with achievable milestones to prevent delays and ensure steady progress.
    - Implement proactive risk management strategies to address potential project delays, cost overruns, or scope changes. Establish contingency plans and ensure regular project audits.
- Leveraging data and technology for policy making
    - Utilize big data analytics to inform government decision-making processes. By analyzing trends and feedback, policymakers can better understand citizen needs, predict challenges, and improve service delivery.
    - Implement AI and machine learning in decision-making, automating processes like fraud detection, public health predictions, and resource allocation for more efficient governance.
- Fostering Inclusivity
    - Address the digital divide by ensuring equitable access to technology. This can involve providing free internet access in remote areas, offering

government-provided mobile devices, or facilitating partnerships with local businesses to improve accessibility.

    - Make sure e-governance systems are designed to serve the needs of marginalized communities, including people with disabilities, women, elderly citizens, and rural populations.

- Concurrent monitoring and evaluation
    - Use monitoring tools that track the performance of e-governance services in real time. This can help identify inefficiencies or failures early, ensuring rapid corrective actions.
    - Regularly assess the impact of e-governance initiatives on citizens' lives, identifying areas where improvements are needed and ensuring the intended outcomes are being met.

By integrating these strategies into the e-governance framework, developing economies can improve their governance systems, enhance service delivery, and ensure greater project management efficiency. These measures also help to make the digital transformation more inclusive, transparent, and sustainable, ultimately benefiting the masses in the long run.

Developing economies through the adoption of effective project management practices and integrated e-governance methodologies will lead to create more efficient, transparent and accessible systems that would streamline revenue collection, improvement in accountability and reduction in corrupt practices. Based on the finding these developing economies through their government can achieve this by following :

- Digital revenue collection system
    - Implement integrated e-taxation platforms that automate tax filing and collection for individuals and businesses. This reduces human error and minimizes the chances of tax evasion. Systems can also send automated reminders and updates to taxpayers, ensuring timely payments.
    - Introduce online payment options for all government services, including taxes, fines, licenses, and utility bills. By providing easy and secure digital payment gateways, governments can increase compliance and reduce administrative overhead.
    - Modernize customs and border control systems with e-governance technologies to reduce delays, enhance security, and ensure timely revenue collection from imports and exports. Integrated systems can automatically calculate and collect duties, taxes, and other fees at ports.
- Enhancing Transparency and Reducing Corruption
    - Make government financial data available to the public through open data platforms. Transparency in how revenues are collected and spent builds trust in the system and encourages voluntary compliance among taxpayers.
    - Implement digital audit and monitoring systems to track the flow of funds in real-time, ensuring that revenues are not siphoned off through corruption. Governments can use AI tools for detecting irregularities in revenue collection, thus improving accountability and efficiency.

- Use e-procurement systems to streamline the purchasing process, ensuring that contracts and tenders are awarded transparently, thereby reducing leakages and increasing government revenue through efficient public spending.

- Improving Project Management Efficiency in Revenue-Related Initiatives
  - Use Agile or Lean project management methodologies to ensure flexibility and efficiency in the implementation of revenue-generating projects. This approach allows governments to adapt quickly to changes, meet deadlines, and optimize resource allocation for better results.
  - For revenue-enhancing initiatives (like tax reform, infrastructure development, etc.), ensure that projects have clear objectives, timelines, and measurable outcomes. Break large projects into smaller, manageable phases with deliverables to monitor progress and avoid delays.
- Train government employees in modern project management techniques and tools, such as cloud-based platforms for task management, project tracking, and collaboration. This ensures that projects are completed on time and within budget, boosting the chances of successful revenue-generation programs.
- Leveraging Technology for Data-Driven Decision Making
  - Big Data Analytics for Taxation and Auditing: Use data analytics to better understand tax compliance patterns, identify underreporting, and optimize tax rates. Big data can help detect trends in revenue generation, inform tax policy decisions, and improve fiscal planning.

- AI for Predictive Analytics: Implement AI-based tools to predict potential sources of tax evasion and improve the accuracy of revenue forecasts. Machine learning models can analyze historical data to identify tax gaps and optimize collection strategies.
- Integrated Taxpayer Identification Systems (TIN): Develop a centralized taxpayer database using unique identifiers (TIN) to ensure every individual and business is accounted for. This can eliminate fraud, improve tax compliance, and enhance the efficiency of audits.

- Expanding the Tax Base
  - Formalizing the Informal Economy: Use e-governance platforms to bring informal businesses into the tax net by offering simple, digital-based tax registration systems. These platforms can help businesses understand their tax obligations and enable small enterprises to easily file taxes online.
  - Incentives for Voluntary Compliance: Offer digital tools and incentives (e.g., tax discounts, access to government services) for businesses and individuals who voluntarily comply with tax regulations. Implementing user-friendly platforms for online registration and filing can encourage wider participation in the formal economy.
  - Simplifying Taxation Processes: Simplify the tax filing process using e-governance systems that are intuitive and easy to use, thus reducing the compliance burden for taxpayers. A simpler process increases the likelihood of voluntary compliance and maximizes tax collection.

- Public Awareness Campaigns Through Digital Channels
    - E-Government Communication Platforms: Use social media, websites, mobile apps, and SMS alerts to educate citizens about their tax obligations, benefits of compliance, and the importance of revenue generation. These campaigns can be interactive and tailored to target specific groups.
    - Digital Education for Financial Literacy: Invest in e-learning programs to improve financial literacy among the population, particularly focusing on the tax system, financial planning, and the benefits of contributing to public coffers. Educated citizens are more likely to pay taxes willingly and correctly.
- Integrating Public-Private Partnerships (PPPs)
    - Collaborate with the Private Sector on Digital Tax Collection: Governments can partner with private-sector technology companies to create more robust, user-friendly tax and payment systems. These partnerships can help governments tap into the expertise and infrastructure of the private sector to develop more efficient systems.
    - Encourage Private Sector Innovation in Revenue Generation: Use PPPs to fund and implement innovative revenue-generating projects, such as digital infrastructure, public transportation systems, or green energy projects, which can lead to long-term economic growth and enhanced government revenue.

- Implementing Advanced Security Measures
    - Cybersecurity Frameworks: Strengthen digital security for e-governance systems to protect sensitive taxpayer data and prevent fraud. Using advanced encryption methods and multi-factor authentication ensures the integrity and trustworthiness of the revenue collection systems.
    - Blockchain for Transparent Transactions: Implement blockchain technology for transparent and tamper-proof records of transactions, particularly in areas like land registration, contracts, and public procurement. Blockchain can reduce fraud, ensure accurate revenue records, and enhance public confidence in government systems.
- Enhancing E-Government Service Delivery
    - One-Stop Digital Service Centers: Develop integrated portals for accessing all government services related to revenue collection, such as licensing, permits, and payments. These portals streamline processes and enhance efficiency, making it easier for citizens and businesses to comply with regulations and contribute to government revenue.
    - Integration with Financial Systems: Connect government revenue collection platforms with national financial systems to ensure real-time updates and coordination between different agencies (e.g., tax departments, finance ministries). This integration reduces inefficiencies and ensures that all revenue is tracked accurately.
- Establishing Real-Time Monitoring and Reporting Systems

- Revenue Tracking Dashboards: Create centralized dashboards that provide real-time insights into revenue collection, spending, and financial performance. This helps government agencies monitor trends, make data-driven decisions, and respond quickly to challenges that may impact revenue collection.
- Continuous Project Evaluation: Regularly evaluate the performance of e-governance revenue-enhancement projects to ensure they are meeting targets and being executed efficiently. Use project management tools to track progress and make adjustments as needed.

By adopting these strategies, developing economies can leverage the power of integrated e-governance systems and effective project management to streamline revenue collection, increase transparency, expand the tax base, and create a more efficient government. This can ultimately result in enhanced revenue generation, better public service delivery, and sustainable economic growth.

CHAPTER VI:

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

Integrated e-governance methodologies are designed to digitize and streamline governmental functions with the objective of enhancing transparency, efficiency, and accessibility in public service delivery. In the context of developing economies, e-governance plays a pivotal role in addressing governance challenges, curbing bureaucratic inefficiencies, and fostering greater public engagement. By enabling seamless collaboration across various government departments, integrated e-governance systems facilitate improved data sharing, more informed decision-making processes, and overall enhanced service delivery. The application of Information and Communication Technology (ICT) is central to these systems, allowing for the automation of public services, integration of information across sectors such as health, education, and infrastructure, and promoting accountability through real-time monitoring of public projects and expenditures.

The ultimate goal of integrated e-governance is to build a more citizen-centric governance model, which prioritizes the needs of the public while improving the accessibility and delivery of services. Moreover, it aims to reduce corruption by increasing transparency and enhancing the capacity for effective project management through continuous monitoring. While the benefits of e-governance are clear, developing economies face substantial barriers to its successful implementation. These barriers

include inadequate infrastructure, limited technical expertise, a lack of digital literacy, and significant resistance to change, all of which can hinder the adoption of e-governance systems. Nevertheless, if these challenges are overcome, integrated e-governance holds the potential to transform governance structures, providing more equitable access to services and ensuring a more efficient use of resources.

This study has critically examined the current state of e-governance in developing economies, analyzing the key strategies and practices required for successful implementation and the potential of integrated e-governance systems to drive governance improvements, economic growth, and societal development. The findings suggest that while many developing countries have made significant strides in adopting e-governance frameworks, the journey remains complex and multifaceted, involving not only technological advancements but also a comprehensive approach to institutional, human, and policy development.

6.2 Implications

While integrated e-governance presents significant opportunities for improving governance, public service delivery, and societal development, its successful implementation in developing economies requires addressing a range of challenges. By carefully navigating these barriers and leveraging the power of ICT, governments can move toward a more efficient, transparent, and citizen-centric governance system.

The findings of this study highlight five critical categories of implications and challenges that need to be addressed for the successful implementation of integrated e-

governance systems in developing economies. The first of these is technical challenges, which encompass issues such as the lack of ICT infrastructure, concerns about data privacy and security, and the general availability and accessibility of technology. These challenges are particularly pronounced in regions with underdeveloped digital infrastructure and limited access to high-speed internet or reliable communication networks.

Second, there are organizational challenges that stem from insufficient support at the leadership and top management levels, resistance to change within government bodies, and the lack of adequate partnerships and collaborations across sectors. Additionally, the absence of a well-qualified workforce and the need for training in ICT skills are critical barriers to the successful implementation of e-governance. Policy and regulatory issues, such as the absence of frameworks to govern digital services, further complicate the adoption of e-governance.

Social issues represent the third category of challenges. Cultural resistance to new technologies, compounded by a digital divide, can significantly slow the adoption of e-governance systems. The societal context—including religion, beliefs, language, values, education, and behavioral characteristics—can influence citizens' willingness to engage with digital platforms. The digital divide, in particular, is exacerbated by low literacy levels, inadequate infrastructure, slow technological adoption, and widespread poverty, further limiting access to modern technologies and services.

Financial challenges also pose a major barrier to the adoption of e-governance. The substantial investment required to build robust ICT infrastructure, implement secure

systems, and provide the necessary communication facilities and setups is often beyond the reach of governments in developing economies. Securing sustainable funding for these initiatives is essential to overcome this hurdle.

Lastly, the human challenge involves the lack of awareness and technical skills among both public officials and the general population. Limited ICT literacy and training opportunities create gaps in understanding and utilizing the benefits of e-governance systems, further hindering their adoption. To address these human challenges, substantial efforts are needed to build capacity, increase awareness, and train personnel at all levels of government, as well as among citizens, to use digital platforms effectively.

The study further highlights a need for a holistic e-readiness assessment to ensure the alignment of infrastructure, human resources, and legal frameworks with the country's development goals. This foundational step provides a clear understanding of current capabilities and obstacles, enabling the creation of targeted, actionable plans. Furthermore, the study emphasizes the importance of raising awareness and fostering collaboration among public and private sectors, academic institutions, and civil society to build a shared understanding of the benefits and potential of ICT in governance.

A critical finding of the study suggests that pilot projects tailored to specific local contexts—along with an emphasis on agility and flexibility—serve as a practical starting point for broader e-governance initiatives. The flexibility to adapt to unforeseen challenges as they arise is crucial for long-term success. Additionally, fostering human capacity development through targeted training and continuous education is identified as

a key enabler for sustained e-governance progress, ensuring that both public servants and citizens are equipped to navigate and fully benefit from digital platforms.

The findings also highlight the importance of data sharing, transparency, and accountability in enhancing governance outcomes. By implementing robust data-sharing frameworks and utilizing digital tools for real-time monitoring and public participation, e-governance systems can contribute to reducing corruption, improving service delivery, and increasing public trust in government institutions. The study further identifies policy reforms and clear regulatory frameworks—such as data privacy laws and digital signature regulations—as crucial to creating an environment conducive to the successful implementation of e-governance.

Finally, the research concludes that integrating e-governance with revenue-generating systems presents a powerful opportunity for improving financial transparency and enhancing the efficiency of public administration. Digital revenue collection systems, combined with data analytics and AI tools, can streamline taxation processes, expand the tax base, and significantly reduce fraud and corruption. When supported by public-private partnerships, these initiatives can lead to sustainable economic growth and more effective governance.

In sum, the successful implementation of integrated e-governance in developing economies requires a multi-dimensional approach that goes beyond technology adoption. It necessitates building strong digital infrastructure, ensuring inclusive participation, enhancing institutional capacity, and aligning policy frameworks. By following these

strategies, developing economies can unlock the full potential of e-governance to enhance governance, improve service delivery, and contribute to long-term societal benefits.

6.3 Recommendations for Future Research

While the existing research provides valuable insights of the e-governance, good governance and project management in these developing economies there is still room for further exploration especially in the Asian context. By conducting further research in these areas, scholars can deepen their understanding on the following:

- Collaborate with private sector to ensure funding sources for e-government implementation.
- Implement and develop a strong ICT infrastructure including the concept of IoTs, AI and Big Data etc.
- Laws and regulations that organize e-government transaction and ensure the system secure and citizens' privacy.
- Work on changing society culture to eliminate resistance to change.
- Pilot Projects and Phased Implementation
- Study on common integrated module for all the developing economies, which can result in cost cutting and working globally on the same work process. The best example is civil aviation sector integrated module, which is used world over, the same can be an area of study for e-governance for good governance and project management.

6.4 Conclusion

This study has provided valuable insights into the implementation of integrated e-governance methodologies and practices in developing economies. By examining the current e-governance landscape, identifying key components of integrated approaches, and evaluating their effectiveness, the research has shed light on the potential benefits and challenges associated with e-governance adoption in these contexts.

The finding of the study emphasizes the importance of e-governance in addressing governance challenges and improving project management efficiency in developing economies. Despite the diverse range of e-governance initiatives, there remain significant hurdles related to technological infrastructure, digital literacy, and institutional capacity. Moreover, the study highlights the role of attitudes and subjective norms in influencing individuals' behavioral intentions to engage with e-governance platforms. Positive attitudes and perceived social support were found to be critical factors in driving e-governance adoption. Therefore, efforts to promote e-governance should focus on fostering positive attitudes and enhancing social support through targeted awareness campaigns, capacity-building programs, and stake holder's engagement activities.

Moving forward, it is essential for policymakers, government officials, and practitioners in developing economies to prioritize the adoption of integrated e-governance methodologies. By leveraging technology, data analytics, and multi-channel service delivery, integrated approaches can improve governance effectiveness, enhance

project management efficiency, and ultimately contribute to sustainable development and inclusive governance

In conclusion the study stresses on the transformative potential of integrated e-governance methodologies in shaping the future of governance and public administration in developing economies. By addressing the challenges and harnessing the opportunities presented by e-governance, these economies can embark on a path towards greater transparency, accountability, and citizen participation, ultimately leading to more responsive and inclusive governance systems.

Nevertheless, the ability of developing countries to reap the full benefits of e-governance is limited and is largely hampered by the existence of many political, social and economic hindrances, but despite barriers and impediments they experienced, the case study and the success stories of Mongolia can show case that the developing countries should and could take advantages of the ICT revolution.

APPENDIX A

SURVEY COVER LETTER

Date : DD/MM/YYYY

[Recipient's Name] [Title/Position][Organisation Name & Address][City,State,Zip Code]

Dear [Recipient's Name],

Subject : Invitation to Participate in Survey on Integrated E-Governance Methodologies and Practices for Implementation in Developing Economies: Enhancing Effective Governance and Project Management

I hope this letter find you well. My name is XXXXX XXX and I am a research scholar. As part of research study I am conducting a comprehensive study on the implementation of integrated e-governance methodology and practices in developing economies and I would greatly appreciate your valuable insights.

The purpose of this survey is to gather date and perspectives from professional like yourself who have vast and inDepartmenth experience in e-governance or project management working within developing economies. Your response will contribute significantly to our understanding of the challenges, effectiveness, and future directions of integrated e-governance practices in these contexts.

Your participation in this survey is completely voluntary, and all responses will be kept confidential. This survey should take approximately 30-40 Minutes to complete. Your input will be instrumental in shaping recommendation and best practices for enhancing governance and project management effectiveness in developing economies.

To access the survey, please click on the following link : [Survey link]

Should you have any questions or concerns regarding the survey, please do not hesitate to contact me at [Mobile Number/Email ID]. Your cooperation and participation are highly valued, and I sincerely thank you in advance for your time and contributions.

I look forward to receiving your responses and to the insights they will provide for my study.

Warm regards,

[Name][Position/Designation/Role][Contact Information]

APPENDIX B

INFORMED CONSENT

My name is Khan Mohamed Ayub A.S. and I am a research scholar. As part of research study I am conducting a comprehensive study on the implementation of integrated e-governance methodology and practices in developing economies and I would greatly appreciate your valuable insights.

The purpose of this survey is to gather date and perspectives from professional like yourself who have vast and in Departmenth experience in e-governance or project management working within developing economies. Your response will contribute significantly to our understanding of the challenges, effectiveness, and future directions of integrated e-governance practices in these contexts.

Your participation in this survey is completely voluntary, and all responses will be kept confidential. This survey should take approximately 30-40 Minutes to complete. Your input will be instrumental in shaping recommendation and best practices for enhancing governance and project management effectiveness in developing economies. The survey records will be analysed and use as part of the research process and kept on records

Khan Mohamed Ayub A.S.

Research Scholar

APPENDIX C

INTERVIEW GUIDE

IMPLEMENTATION OF INTEGRATED E-GOVERNANCE METHODOLOGIES AND PRACTICES IN DEVELOPING ECONOMIES FOR EFFECTIVE GOVERNANCE AND PROJECT MANAGEMENT

Thank you for participating in this survey. This doctoral research investigates to identify the current state of e-governance methodologies and practices in developing economies and its effectiveness in offering benefits towards governance and project management from an infrastructure point of view. The study will further examine the challenges faced in development and implementation of e-governance methodologies and practices and investigate the potential benefits of integrating e-governance methodologies and practices for effective governance and project management in developing economies. Your feedback is valuable for understanding the current status and challenges of e-governance in developing economies. Please answer the following questions honestly and to the best of your knowledge

Name

Gender

Occupation

Address/Country

Email

Contact No.

Please tick one of the following options

1. What is a key component of integrated e-governance methodologies that differentiates them from traditional approaches?

A) Paper-based documentation
B) Digital infrastructure and connectivity
C) Manual data processing
D) Limited citizen engagement

2. In developing economies, what is a major challenge that hinders the effective implementation of e-governance?

A) High levels of digital literacy
B) Abundance of internet access in rural areas
C) Insufficient digital infrastructure and cybersecurity frameworks
D) Universal access to online services

3. How do integrated e-governance practices contribute to effective project management in developing economies?

A) By ensuring faster implementation of projects
B) By providing tools for collaboration and real-time monitoring
C) By reducing government accountability
D) By limiting public involvement in decision-making

4. How are developing economies addressing project management challenges in e-governance initiatives?

A) By avoiding technology-based solutions
B) By relying on traditional management methods
C) Through the automation of routine tasks and improved data analytics
D) By limiting the scope of e-governance projects to small pilot programs

5. Which of the following e-governance methodologies is most effective in enhancing citizen engagement in developing economies?

A) E-voting systems
B) Mobile applications for service delivery
C) Government websites for information dissemination
D) E-billing systems

6. Which of the following is a key benefit of e-governance for citizens in developing countries?

A) Increased government expenditure
B) Faster, more accessible public services
C) Reduced need for public administration
D) Over-dependence on technology

7. Which of the following is a major barrier faced by developing economies in implementing integrated e-governance methodologies?

A) Excessive digital literacy among citizens
B) Unequal access to technology and the internet
C) Overabundance of technical infrastructure
D) Lack of citizen interest in e-governance

8. What is the key role of public feedback in integrated e-governance systems?

A) To determine government employee salaries
B) To improve project monitoring, service delivery, and policy adjustments
C) To track political popularity of leaders
D) To limit citizen access to government services

9. Which of the following e-governance tools is most likely to improve the efficiency of public service delivery in developing countries?

A) E-learning platforms for government employees
B) Centralized government databases for service tracking
C) Digital financial platforms for tax collection
D) E-banking systems for government employees

10. Which factor is most critical for ensuring the long-term success of e-governance projects in developing economies?

A) Comprehensive legal frameworks
B) High-tech infrastructure
C) Consistent government funding from international donors
D) Digital literacy programs for citizens

11. How do stakeholders generally perceive the adoption of integrated e-governance methodologies?

A) As a disruption to existing systems with no clear benefits
B) As a way to increase transparency, efficiency, and citizen engagement
C) As a temporary trend with limited impact
D) As a tool for reducing digital literacy among the population

12. What is the primary purpose of using mobile applications for e-governance in developing economies?

A) To reduce the workload of government employees
B) To deliver services and information more directly to citizens
C) To collect taxes from citizens more efficiently
D) To increase the size of the government bureaucracy

13. Which of the following is a major barrier to e-governance adoption in developing economies?

A) Strong governmental support
B) Widespread availability of high-speed internet
C) Cultural resistance to digital government services
D) High levels of citizen digital literacy

14. What is a potential benefit of implementing integrated e-governance methodologies in developing economies?

A) Reduced transparency and accountability
B) Improved governance effectiveness and project management efficiency
C) Increased reliance on manual administrative processes
D) Limited citizen engagement and participation

15. How can the risks and challenges of integrated e-governance be mitigated?

A) By reducing government spending on technology
B) Through better cyber security, digital literacy programs, and infrastructure upgrades
C) By limiting citizen participation and involvement in e-governance
D) By focusing on physical infrastructure over digital solutions

16. Which of the following strategies can governments and policymakers use to facilitate the transition to integrated e-governance in developing economies?

A) Developing comprehensive policies and legal regulations that support the digital transformation of government services
B) Limiting e-governance initiatives to government-led projects to retain full control.
C) Focusing on technology deployment without considering the digital literacy needs of the population.
D) None of these

17. Which of the following are key success factors for the successful implementation of integrated e-governance methodologies in developing economies?

A) Strong political will, investment in digital infrastructure, and citizen engagement
B) High levels of bureaucracy, limited citizen access to technology, and minimal investment in infrastructure
C) Over-reliance on foreign technology, reduced transparency, and centralized decision-making
D) Lack of government involvement, no training programs, and limited internet access

18. What is the primary goal of integrating e-governance methodologies in developing economies?

A) To reduce the cost of public services
B) To increase transparency, efficiency, and citizen participation
C) To centralize government control
D) To outsource government operations to private firms

19. How do integrated e-governance systems impact governance in developing economies?

A) They reduce transparency and increase corruption risks
B) They centralize power and limit local government autonomy
C) They improve accountability, reduce corruption, and streamline processes
D) They focus on government secrecy and control

20. How can e-governance improve project management in developing countries?

A) By centralizing all decision-making to a single government body
B) By providing a platform for real-time project monitoring, data collection, and feedback
C) By reducing the need for government employees
D) By limiting public access to government decision-making

21. How does integrated e-governance enhance the accountability of government officials?

A) By making it more difficult for citizens to report issues
B) By centralizing all information and making it accessible to the public
C) By allowing government officials to avoid scrutiny
D) By reducing the need for monitoring and reporting systems

22. In e-governance systems, what is the role of data security in building trust with citizens in developing countries?

A) It is not necessary as citizens have little interest in government data
B) It ensures that citizens' personal and financial data is protected from misuse
C) It focuses solely on protecting government internal communications
D) It is only relevant for developed countries

23. Can IoT based solutions, Artificial Intelligence and Cloud Computing can help in Integrated approach for e-governance, good governance and project management and monitoring purpose in developing economies ?

A) Definitely to some extend
B) Surely it will be possible
C) Not Sure due to resistance and acceptability
D) None of the above

24. Which of the following statements best describes the impact of the single point collection system of taxes and the segregation of tax responsibilities between the State and Central Governments in India?

A) It leads to the simplification of tax administration and ensures a clearer division of tax revenues between the state and central governments.
B) It allows the central government to collect all taxes, while states have no role in tax administration.
C) It eliminates the need for states to collect any taxes, shifting all responsibility to the central government.
D) It creates confusion in tax administration due to overlapping tax responsibilities between the state and central governments.

25. What is the primary purpose of integrating the Aadhaar card into government services and programs?

A) To ensure that all citizens receive a unique identification number for personal use.
B) To streamline and enhance the efficiency of service delivery and welfare schemes through a centralized database.
C) To monitor financial transactions of citizens across all sectors.
D) To create a database for tracking citizens' health records exclusively.

26. What improvements would you like to see in the existing e-governance services?

_____
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Apart from this questionnare separate questionnare was used to understand the e-governance practices, challenges and adoption scale in their respective countries through one to one interaction, group meetings consisting of relevant field stakehoders and the resereach findings and outcome includes their inputs too.

---Thank you for completing the survey. Your input is greatly appreciated----

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