

E-Governance for Smart Bangladesh: Prospects for Implementing the Vision in Public Administration



Dr. Jebunnessa¹, Dr. Mizanur Rahman², Mst. Ashrafun Nahar³

¹Professor, Department of Public Administration, Jahangirnagar University, Bangladesh.

²Executive Director, Governance Policy Explore Center, Bangladesh, Adjunct Faculty RUD

³Research Associate and student, MPA, Jahangirnagar University, Bangladesh

ABSTRACT: Despite facing challenges like urbanization and climate change, Bangladesh is thriving with a 7.3% annual economic growth rate. The government is advocating for a "Smart Bangladesh" to address resource and infrastructure management issues and foster sustainable development. The main goals include 5G internet, 100% smartphone adoption, 100% speed internet access, and cashless transactions. E-governance, leveraging ICT, plays a vital role in promoting efficiency, technical innovation, and citizen-focused services. This research aims to assess citizen engagement in e-governance and evaluate the implementation of strategies to achieve smart governance objectives.

The research on e-governance for Smart Bangladesh focuses on the importance of user experience, awareness, technological integration, and community engagement. It highlights the potential impact of e-governance on citizen-government interactions. However, challenges like technical issues and rural-urban disparities feature the complexity of implementing comprehensive solutions. The research recommendations include enhancing user interfaces, increasing awareness, tailoring services to local needs, integrating innovative technologies, and promoting data-driven decision-making. These strategies contribute to a Smart Bangladesh with efficient, transparent, and citizen-centric governance.

KEYWORDS: E-Governance, Smart Bangladesh, Smart Citizen, Public Administration,

INTRODUCTION:

Despite confronting the challenges of rapid urbanization and climate change (Roy, 2021), Bangladesh, renowned for its Bengal delta (Banglapedia, 2021) and harboring a population surpassing 165,158,616 (PHC, 2022), secures the eighth position globally (PHC), this dynamic nation not only sustains an impressive 7.3% annual economic growth rate (BIDA) but also charts a visionary course under the leadership of Prime Minister Sheikh Hasina, who ardently advocates for a "Smart Bangladesh" as a strategic initiative, addressing resource and infrastructure management issues with the ultimate goal of fostering sustainable development (Talukdar, 2023) within the vast realm of the country's immense potential and opportunities (World Bank, 2023).

The main goals of Smart Bangladesh are 5G internet, 100% adoption of smartphones, 100% speed internet access, and cashless transactions. Make it intricate (a2i, 2023a). To enhance service delivery, the government needs to go beyond mere electronic processes; e-governance encompasses not only digital systems but also involves individuals, necessitating the development of new skills, mindsets, and leadership styles (Kaluti & Rajani, 2021). E-governance initiatives contribute to economic growth and address social inclusion, particularly benefiting disabled and vulnerable segments (Rahman, 2016; Hasan, 2021). In simple words, by leveraging information and communication technology (ICT) within public administration, e-governance intricately orchestrates the efficient management of data and information, thereby propelling an augmentation in public service delivery and fostering the empowerment of citizens (Rahman, 2016).

In order to establish a Smart Bangladesh, e-governance plays a multifarious and vital role in promoting efficiency, technical innovation, and citizen-focused services. This research aims to assess the level of citizen engagement in e-governance to foster smart citizenship while simultaneously evaluating the implementation of e-governance strategies to achieve smart governance objectives. The study focuses on understanding the dynamics of citizen involvement in e-governance initiatives and scrutinizing the effectiveness of strategies for enhancing smart governance in the context of technological advancements.

STATEMENT OF THE PROBLEM

In the era of rapid technological advancement, globalization, citizen engagement, commercialization, cyber security, and sustainability, the Bangladeshi government faces obstacles in implementing e-governance. The research aims to contribute to the

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current conversation on successful e-governance strategies in developing countries, focusing on the Smart Bangladesh Vision: 2041. The study explores the challenges and opportunities of integrating e-governance into public administration, particularly in Bangladesh. The research aims to understand the complexities of technological adaptation and inform other countries facing similar challenges. The study aims to improve public services, guide policy decisions, and contribute to the strategic use of technology for good governance.

RESEARCH QUESTIONS

- What primary barriers prevent citizens from actively engaging in e-governance initiatives?
- How do these barriers vary across different demographic groups in Bangladesh?
- What are the main challenges associated with implementing e-governance efforts? □ How effective are they in achieving the goals of smart governance?

OBJECTIVES OF THE RESEARCH

This research aims to comprehend the difficulties and possibilities associated with incorporating e-governance practices into the Public Administration framework by

- Assessing the level of citizen engagement in e-governance initiatives.
- Evaluating the implementation of e-governance strategies for achieving smart governance goals.

METHODOLOGY

This research aims to explore the obstacles to citizen participation in e-governance initiatives and to understand the relationships between these obstacles, opportunities, and the success of e-governance implementation. A mixed method approach, including content analysis and literature review, is used to understand perceptions, challenges, and critical aspects. A structured questionnaire was developed to collect data on citizen engagement and evaluation of e-governance strategies. The study used non-probability judgment sampling and accidental sampling for quantitative surveys to ensure representative data. Non-probability Judgmental Sampling (purposive) was used to pick the participants for the investigation from the citizens who have and have not experienced e-governance services. The random sampling approach is used in quantitative surveys to ensure the extraction of representative data. The research uses qualitative and quantitative methods to comprehensively understand challenges, opportunities, and prospects for smart governance implementation in Bangladesh, contributing to the existing literature on e-governance in developing countries. A literature review was conducted to provide theoretical frameworks and contextual information on e-governance and its role in Digital Bangladesh. Thematic analysis was used to identify patterns and themes from interviews, while descriptive statistics and inferential analysis were used to analyze survey data. The research aims to provide a comprehensive understanding of the potential of e-governance in Smart Bangladesh.

LITERATURE REVIEW

The concept of e-governance is a global initiative that utilizes cutting-edge technology, particularly the Internet and information technologies (ICTs), to enhance governance. It aims to improve accountability, openness, and citizen participation in government processes. The evolution of e-governance in Bangladesh has been analyzed by seven major papers, including Islam & Ali (2016), Rahman & Hasan (2018), Khan & Hossain (2014), Haque & Islam (2017), Ahmed & Rahman (2019), Kabir and Rahman (2021), Chowdhury (2019), and Karim and Rahman's (2022).

The literature review summarizes the findings from seven crucial research studies that analyze Bangladesh's e-governance policies. Islam & Ali (2016) provide a nuanced perspective on the development of e-governance, while Rahman & Hasan (2018) evaluate the wider governance implications, such as citizen participation and cooperative decision-making. Khan & Hossain (2014) assess the advantages and disadvantages of the Digital Bangladesh initiative, while Haque & Islam (2017) examine the long-term effects of e-governance on sustainable development. Ahmed & Rahman (2019) offer quantifiable results and specific instances that highlight the advantages of e-government.

The literature review also discusses the government initiatives and policies that have shaped Bangladesh's e-governance path. Islam & Ali (2015) evaluate the National ICT Policy, while Rahman & Hasan (2018) analyze the E-Government Master Plan and Digital Bangladesh Vision 2021. Ahmed and Hoque's (2020) analysis of e-governance techniques evaluates the strategies' efficacy in the context of international best practices. Kabir and Rahman (2021) examine legal systems using comparative analysis to determine how well they address regional issues. Chowdhury (2019) offers possible solutions based on international best practices, while Karim and Rahman's (2022) study delves into the governance aspect of e-government initiatives' strategic alignment.

The literature review also discusses the challenges and barriers faced in implementing e-governance in Bangladesh. Rahman (2015) emphasizes the limitations of infrastructure, Ali and Hasan (2017) investigate government officials' concerns about data security,

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Haque and Ahmed (2018) investigate cultural elements affecting the adoption of e-governance, Kabir and Rahman (2021) analyze institutional challenges in the public sector, Rahman and Hoque (2021) focus on infrastructure bottlenecks, and Islam and Ahmed (2022) explore user resistance as a hindrance to e-governance adoption.

Future prospects of e-governance in Bangladesh are also discussed, with Hossain and Rahman (2017) providing a roadmap for future planning, Rahman and Ahmed (2020) examining global governance trends, and Ali and Khan (2023) delineating necessary policies for the upcoming ten years. These studies offer a forward-looking viewpoint, strategic insights, and policy suggestions to guide Bangladesh's future development of e-governance.

The literature on Smart Bangladesh highlights the integration of cutting-edge technology to promote sustainable development across various sectors, including government, agriculture, health, industry, education, and infrastructure. Rahman (2016) explains the roles of IoT, AI, big data analytics, and precision farming in transforming these sectors. Haque and Ahmed (2019) provide in-depth evaluations of smart governance, while Rahman and Hoque (2023) focus on smart infrastructure development for sustainable cities. Smart Citizen Literature emphasizes the role of citizens in urban development through citizen-centric projects, public engagement, and collaborative decision-making. Gupta and Sharma's 2019 study examines the function of mobile technology in promoting smart citizenship, while Lee and Kim's (2020) study provides insights into effective citizen-centric smart city planning. Cheng and Li (2021) explore crowdsourcing and how citizen-contributed data influences smart city initiatives. Molina and Perez (2022) present examples of citizen-driven contributions to smart city solutions with participatory design. Tan and Li's 2023 paper addresses privacy problems by balancing the advantages of smart technology and citizens' privacy concerns.

Citizen participation and inclusivity in Bangladeshi e-governance research offers insights into factors influencing digital engagement across different demographic groups. Kabir and Ahmed's 2018 case study addresses gender inclusion in e-government services, while Rahman and Ali's comparative research (2020) explores adolescent participation and adapts e-governance systems to various youth groups. Karim and Hasan's 2021 study assesses inclusive and accessible e-governance services for people with disabilities, while Chowdhury and Islam's longitudinal research (2022) examines socioeconomic disparities. Ahmed and Hoque (2023) tackle regional differences by analyzing geographic factors influencing citizen engagement and recommending methods to overcome regional gaps.

Smart governance emphasizes efficiency, transparency, and citizen-centric services while integrating technology into government operations. Jones and Smith (2017) provide an overview of technology's revolutionary potential in government services, while Kim and Lee (2019) examine practical applications and the shift from e-government to smart government. Wu and Li (2021) focus on the opportunities and challenges of implementing smart government programs, while Tan and Li (2022) highlight citizen involvement in decision-making processes.

ANALYSIS AND FINDINGS ANALYSIS

Demographic characteristics of the respondents: The demographic parameters of the study population included age, gender, occupation, and educational background. The results are discussed concerning research questions and based on 110 valid responses from Jahangirnagar University and four villages of Nakol Union at Sreepur Upazila in Magura District. The respondents were between 18 and 60 years old. The respondents are from various educational backgrounds.

1st Variable (Age)	Percentage
18-30	35%
31-50	34%
50+	31%
2nd Variable (Gender)	Percentage
Male	50%
Female	50%
3rd Variable (Educational Background)	Percentage
Under Secondary School Certificate	22%
Secondary School certificate	25%
Higher Secondary School Certificate	30%
Graduate and Post Graduate	33%
4th Variable (Locality)	
Urban	50%
Rural	50%

CITIZEN ENGAGEMENT IN E-GOVERNANCE

73% of respondents are aware of e-governance initiatives. 58% have personally used e-governance services.

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User Experience: Participants highlight the simplicity of obtaining government services online as they express satisfaction with e-governance services (Quotes: "It offers convenience and time savings," "I value the ease of using online services").

Satisfaction: Responses from participants indicate that they are satisfied with e-governance services, emphasizing the ease of using online government services ("It's convenient and saves time," "I appreciate the ease of using online services").

Challenges: The user experience is negatively impacted by technical problems and intricate interfaces (Quotes: "Sometimes, the websites have glitches," "The interfaces are not userfriendly").

Engagement Motivations: Monthly participants emphasize the time-saving advantages of online services and credit their convenience for their interaction (Quotes: "I use it for utility payments," "It's easier than going in person").

Obstacles to Regular Participation: More frequent interaction is hampered by disinterest and worries about technological difficulties (Quotes: "I prefer traditional methods," "I worry about privacy and security online").

Advice for Enhancement: In their suggestions for a more user-friendly design, participants underlined the need for better user interfaces (Quotes: "The websites could be more intuitive," "Simplify the processes").

Awareness Campaigns: Among the recommendations are more public awareness campaigns to inform the public about the services that are available for e-governance (Quotes: "Many are unaware of online services," "More publicity is needed").

Mobile Accessibility: A wider audience can be reached by promoting improved mobile accessibility, according to participants (Quotes: "Make apps for mobile devices," "Many people use smartphones").

Themes	Result
User Experience: Satisfaction: driven by convenience Challenges: Technical Issues Complex Interfaces	Average Rating 7/10 47% 22%
Engagement Frequency: Frequency: Motivations:	Monthly Engage 40% Motivated by Convenience 55% Time saving 28%
Barriers to Frequent Engagement: Technical Issues: Lack of Interest: Barriers due to Language	28% 12% 5%
Suggestions for Improvement: User Interface Enhancement: Awareness Campaigns: Mobile Accessibility:	45% 30% 25%

EVALUATION OF E-GOVERNANCE STRATEGIES FOR SMART GOVERNANCE

Perceived Effectiveness: Participants recognize increases in openness and information access and believe that e-governance initiatives are moderately effective (Quotes: "I can track government activities," "Online information is more accessible").

Demographic Variations: While respondents from rural regions point out difficulties, younger participants are more satisfied with efficacy (Quotes: "I find it very effective to be tech-savvy," "In rural areas, access is still a challenge").

Accountability and Openness: favorable Impact: Referring to instances such as online budget visibility and real-time updates on government activities, respondents acknowledge favorable impacts on transparency (Quotes: "I can see where my tax money goes," "Government operations are more transparent now").

Including Novel Technologies: Participants recognize the moderate incorporation of cutting-edge technology, proposing blockchain and AI-powered chatbots for improved services (Quotes: "Chatbots could assist in inquiries," "Blockchain for secure transactions").

Accessibility and Inclusivity: Moderate Accessibility: Participants believe e-governance is moderately accessible but highlight disparities, particularly in rural areas (Quotes: "Accessible, but not everyone has equal access," "Needs improvement in remote areas").

Variations: Compared to their rural counterparts, urban respondents are more satisfied with accessibility (Quotes: "I can access services easily in the city," "Rural areas need better infrastructure").

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Total Contentment: Participants' general satisfaction levels are expressed, but they also identify areas that require improvement, particularly in terms of improving accessibility and lowering technical difficulties (Quotes: "Satisfied but room for improvement," "It's convenient, but glitches need fixing").

Population Differences: Those with more education typically report being more satisfied (Quotes: "I appreciate the technological advancements," "Education helps in navigating online services").

Themes	Result
Perceived Effectiveness: Overall Effectiveness Demographic Variations	Average Rating: 6.5/10 Younger age groups express higher effectiveness ratings; rural areas tend to rate lower.
Transparency and Accountability	65%
Integration of Innovative Technologies:	60% view innovative technologies as moderately integrated
Suggested Technologies	AI-driven chatbots 25% and block chain for data security 20%
Accessibility and Inclusivity:	65%
Overall satisfaction: Demographic Variance:	Average satisfaction rating of 7/10. Higher satisfaction among well-educated respondents

Cross-Cutting Themes

Using e-governance to implement Smart Bangladesh, this thematic analysis investigates the ramifications of the digital divide. The importance of awareness, the impact of community networks, the differences in engagement, and the difficulties facing governance innovations are some of the major themes. The results highlight the significance of focused legislation, technology improvements, institutional modifications, and community involvement tactics in addressing issues related to the digital divide and improving citizen participation.

CORRELATION ANALYSIS

- Digital Divide Implications:** Negative correlation between rural residence and perceived effectiveness, suggesting challenges in innovation adoption.
- Role of Awareness:** Positive correlation between awareness of e-governance and higher engagement levels.
- Community Networks: Correlation:** No significant correlation was found between community networks and engagement levels.

Comparative Analysis:

The discrepancy in involvement and happiness that benefits urban consumers is highlighted by the implications of the "digital divide." The Role of Awareness highlights that increased involvement and e-governance awareness correlate positively. There needs to be a discernible relationship between engagement levels and community networks. Innovation Challenges show that living in a rural area is negatively correlated with perceived effectiveness, suggesting barriers to adopting new ideas. Several recommendations are made, including community networks for successful awareness campaigns, policy interventions for rural areas, awareness campaigns, significant technical advancements for improved engagement, and possible adjustments in rural institutions.

FINDINGS

Main obstacles to citizens actively participating in e-governance initiatives and the role of these obstacles among Bangladesh's various demographic groups:

- Digital Literacy Disparities:** Insufficient digital literacy is a major obstacle, especially for elderly populations and rural locations. E-governance platforms present difficulties for residents living in remote areas and older age groups.
- Challenges of the Technological Infrastructure:** Some areas have inadequate technology infrastructure, which makes it difficult to access and use. Because of insufficient infrastructure and communication, rural communities frequently face more severe problems.
- Language Barriers:** People who are not fluent in the official languages find it difficult to participate on internet platforms due to language differences.

Main Obstacles and Opportunities in E-Governance Implementation for Smart Governance: Obstacles:

- Opposition to Change:** Smooth implementation is hampered by institutional opposition and a reluctance to embrace new technologies.

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(ii). Infrastructure Gaps: Improper infrastructure support, particularly in rural regions, makes it challenging to provide e-services consistently.

Opportunities:

(i). New technology: Using cutting-edge technology like block chain and artificial intelligence opens up possibilities for more safe and effective e-governance.

(ii). Enhanced Access to Information: Transparency has been promoted by e-governance efforts, which have enhanced public access to government information.

(iii). Community Engagement: There are ways to use community networks to raise awareness and increase involvement.

Smart Governance Vision Accomplishment:

(i). Partial Success: Although progress has been made, the complete realization of the Smart Governance concept has been hampered by implementation issues.

(ii). Regional Differences: While rural places might not reach their full potential, urban areas tend to reap greater rewards.

RECOMMENDATIONS AND CONCLUSION

Recommendations:

Targeted Training Programs and Community Workshops: Launching targeted digital literacy training programs, especially in rural areas and among older demographics, will increase citizen participation. Providing ongoing training to government officials to enhance their digital skills and understanding of e-governance benefits is also needed for digital literacy enhancement. Conducting community workshops to familiarize citizens with e-governance platforms and build their confidence in using digital tools will effectively increase citizen participation.

Public Awareness Campaigns: Conducting campaigns to educate citizens about the robust security measures in place, emphasizing data protection, developing strategies to enhance mobile access in rural regions, considering it as a primary means of connectivity, and including citizens from diverse demographics in the policy development process will ensure that the vision for smart governance aligns with their needs.

Investment in Technological Infrastructure: Allocating resources for improving technological infrastructure and focusing on expanding reliable internet access to remote areas will be effective in implementing e-governance initiatives.

Multilingual Platforms: Developing e-governance platforms in multiple languages to ensure inclusivity and better accessibility and implementing language-specific outreach programs to raise awareness and educate citizens about available services will increase citizen participation.

User-Centric Design: Design e-services with a user-centric approach to simplify and expedite citizen-government interactions.

Implement and enforce accessibility standards to cater to citizens with diverse abilities and needs.

Prioritizing mobile-friendly solutions to cater to users with varying access levels to personal computers.

Public-Private Partnerships: Explore partnerships with private entities to bridge infrastructure gaps, especially in less-developed regions, which will effectively address the infrastructure gap.

Localized Solutions: Implement localized solutions that consider different regions' specific needs and challenges. Collaboration with community networks for effective awareness campaigns and ensuring that local perspectives are considered in e-governance initiatives is needed. Ensure that resource allocation for e-governance initiatives prioritizes urban and rural areas, reducing regional disparities. Encourage knowledge sharing between different government agencies and local administrations to disseminate successful practices.

Pilot Projects: Launching pilot projects incorporating AI and blockchain technologies to test their efficacy and identify areas for improvement will be effective in increasing performance.

Continuous Evaluation:

- 1) Regularly assess the impact of innovative technologies, making adjustments based on feedback and advancements.
- 2) Establish mechanisms for citizens to provide input, ensuring their voices contribute to ongoing improvements.
- 3) Implement transparent practices in data handling and communicate security measures to build public trust.

CONCLUSION

In conclusion, the research on e-governance in the context of implementing a Smart Bangladesh reveals a nuanced landscape characterized by both positive aspects and areas for improvement. The findings underscore the significance of user experience, awareness, technological integration, and community engagement in shaping the success of e-governance initiatives. The positive user satisfaction and engagement trends affirm the potential impact of e-governance on enhancing citizen-government interactions. However, challenges such as technical issues, rural-urban disparities, and the need for improved accessibility indicate the complexity of implementing comprehensive e-governance solutions. The recommendations presented aim to address these challenges and capitalize on opportunities for improvement. Enhancing user interfaces, increasing awareness through campaigns, and tailoring services to local needs is critical to fostering a more inclusive and effective e-governance ecosystem. Integrating innovative

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technologies, collaboration with community networks, and continuous evaluation underscore the dynamic nature of e-governance development.

Furthermore, the research emphasizes the importance of adapting institutional frameworks, fostering collaboration between the government and local communities, and promoting data-driven decision-making. These strategies collectively contribute to creating a Smart Bangladesh characterized by efficient, transparent, and citizen-centric governance. As e-governance evolves, the insights gained from this research provide a foundation for policymakers, technologists, and communities to collaboratively navigate the challenges and opportunities on the journey towards a smarter and more connected Bangladesh. The success of e-governance initiatives hinges on the commitment to continuous improvement, responsiveness to citizen needs, and the effective leveraging of technology to benefit all segments of society.

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