Public Perception of E-Government Services: A Regional Analysis of Greater Mumbai, Maharashtra

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***Abstract*—This study aims to examine the public perception of e-government services in the Greater Mumbai region (M.S.), India. With the increasing adoption of digital platforms by governments worldwide, it is critical to understand how citizens perceive the effectiveness, accessibility, and trustworthiness of these services. This research focuses on factors influencing citizen engagement with e-government services, identifies barriers to adoption, and explores the overall satisfaction of users with digital public services. The findings will provide insights into improving the delivery of e-government services in Mumbai and contribute to the discourse on digital governance in urban India. For this study the researcher has collected the primary data through google form from Greater Mumbai region (M.S.), India.**

***Index Terms*—e-government services, Mumbai, public services, etc.**

I. INTRODUCTION

E-government services, or electronic government services, use information and communication technologies (ICTs) to improve the efficiency, transparency, and accountability of government services. E-government services can also help citizens participate more in government. E-government services can reduce the time it takes to deliver services and reduce redundant activities. Discuss the growing role of digital technologies in governance, emphasizing e-government services. Introduce the concept of e-government and its relevance in India, particularly in metropolitan regions like Greater Mumbai. E-government services can make government information more accessible to citizens. E-government services can make it easier to hold the government accountable for its actions. E-government services can make it easier for citizens to interact with the government. E-government services can improve communication between government agencies and between the government and citizens. It is crucial for improving government efficiency, enhancing transparency, and ensuring accessible services. It empowers citizens, reduces corruption, and promotes accountability, making governance more responsive and inclusive in the digital age.

Government is providing following e-government services:

- Digital Locker: Allows citizens to store important documents digitally, such as PAN, Aadhar, and degree certificates, driving license etc.
- PayGov: Allows citizens to make online payments to public and private banks through phone pay, gpay, amazon pay etc.
- Mobile Seva: Provides government services through mobile phones and tablets
- Computerization of Land Records: Provides landowners with digital and updated copies of documents relating to their property.

1.1 Challenges and difficulties in E-Governance

- Linguistic Diversity: India is an extremely diverse country and English is not the first language for majority of the population. Therefore, in spite of successful implementation of E Governance projects, not a lot of Respondents have been able to utilize the services. Also, because of cultural differences in different states, there are a lot of regional languages making it difficult to implement the project successfully in different languages.

- Low Awareness: Recognition of E-Governance projects is a major hurdle towards successful implementation because it is difficult to build trust amongst the citizens and encourage them to utilize E-Governance facilities.
- Ease of operation: Lower level of user-friendliness of a website discourages users from opting for such mediums, posing a critical challenge to successful implementation of EGovernance.
- Unavailability of the Internet: The success of E-Governance depends on its accessibility by anybody from anywhere and anytime. There are still parts of India that have limited access to the internet.

1.2 Opportunities of E-Governance

- Sports: The Department of Sports under Ministry of Youth Affairs and Sports seek to support development activities and programmers in the field of sports. Users can find a lot of information on the national policies and support organizations. Users can also find out a lot of training centers and places in the particular districts and states.
- Agriculture: E-Governance is extremely useful in the agricultural sector. It provides services to the entire community which is aimed at increasing crop productivity, reducing crop damage, improved livestock management and accessing government schemes. Currently, a lot of projects are based on agriculture like, Gyandoot, Bele, Agmarket, Seednet and Mustard Procurement Management System.
- Education: E-Governance can overall improve the efficiency and effectiveness of the overall Education system. It provides a lot of new ways of communicating with the students and innovative ways of imparting knowledge to them. Some of the current projects on education are Cascet, AISES, CAPnic and VHSE Examination Management System.
- Power and Energy: As of today, some 600 million Indians do not have access to electricity and some 700 million use biomass as their primary energy resource for cooking. Yet, a lot of governments have come up with projects where online payment can be done along with applying for a new connection.

1.3 Research Problem:

Despite the rapid expansion of e-government platforms, there is limited research on how citizens in specific urban regions, like Greater Mumbai, perceive these services.

1.4 Objectives of the Study:

1. To assess the public's awareness and usage of e-government services in Greater Mumbai.
2. To evaluate the factors influencing the adoption of e-government services.
3. To understand public perceptions of the quality, accessibility, and trustworthiness of e-government services.
4. To identify barriers hindering the adoption and satisfaction levels among citizens.

1.5 Research Questions:

a) What are the main factors influencing the adoption of e-government services in Greater Mumbai?
b) How satisfied are citizens with the accessibility and functionality of e-government platforms?
c) What are the key barriers to using e-government services?

II. LITERATURE REVIEW

A review of literature is essential to have the view of the larger picture of the total research done in the similar area by other researchers. It helps to familiarize with the work that has been done in that area eliminates the possibility of unnecessary duplication of efforts and helps improvising valuable information on research techniques. The review has been divided under two categories for brief overview of the similar researches done in the past.

Some studies have been conducted in the past on E-Governance to understand the problems and issues on E-Governance. A brief review on some of the problems as well as the gaps have been presented below:

Kalsi, Kiran and Vaidya (2009) studied the effect of E-Governance and also highlighted the implementation of E-Governance projects in India in various other states. The research revolved around

the factors that contribute to good governance through the use of Information Technology/E-Governance. The paper also showed a lot of initiatives taken by the Government of India in different states and how successful or moderately successful those initiatives have been. The research methodology included a questionnaire based on five – point Likert scale. The paper outlines the three main contributors to good governance: improving government processes (e-Administration); connecting citizens (e-citizens and e-services); and building external interactions (e-society).

Bhiyana and Bharwal (2007) focused on the challenges on implementation of e-governance in India like Environmental, Economic and Technical. The conclusion was that the awareness among Respondents led to the failure of e-governance initiatives in various parts of India. The language barrier is the second reason why e-governance has not been able to do as well as it should have. Although, a lot of e-governance projects are now implemented in multiple languages for the ease of understanding of the users.

Mishra and Fatmi (2015) focused on India's e-readiness compared to different world leaders to find out areas of concerns and challenges and what are the initiatives taken by the government of India to overcome those issues. The research also talks about how developing a favorable environment and digitally skilled citizens pose a great challenge in achieving a fast and simple e governance in India.

Yadav and Singh (2012) have talked about the emergence of e governance in India giving the example of AKSHAYA initiative of Kerala government. The paper also talks about the countries other than India like USA, UK, New Zealand and their e governance initiative. The paper has also illustrated the major pillars and models of e governance. It also mentions about the sectors in which e governance has been implemented throughout the urban (transportation, bill payment, information services, municipal services, road and traffic management) and rural (agriculture, local information, disaster management, land record management) areas along with health and education sectors. The paper also proposes use of cloud computing and open sources as the future of e governance helping reduce the labor costs, thus providing organizational and technical benefits along with economic benefits.

III. RESEARCH METHODOLOGY

This study uses a quantitative research approach with a cross-sectional survey design to collect data from the Greater Mumbai region. The study is based on Primary data. The essential data required for the study was collected through survey method wherein respondents were asked a variety of questions regarding their awareness, usage and perception about the E-governance Services. These questions were asked through a structured questionnaire. The target population includes residents of Greater Mumbai who have interacted with e-government services. A stratified random sampling technique w used to ensure representation from different demographics (age, gender, education level, income groups, etc.) and Sample size was 152. The Likert scale method was the method used for scaling, along with various multiple-choice questions.

The study was intended to gather information and interpret the results based on the variable like usage of internet and of E-Governance services, ease of payment options, improvement in transparency, reduction in corruption, and convenience in usage & level of promotion of E-Governance services.

IV. DATA ANALYSIS:

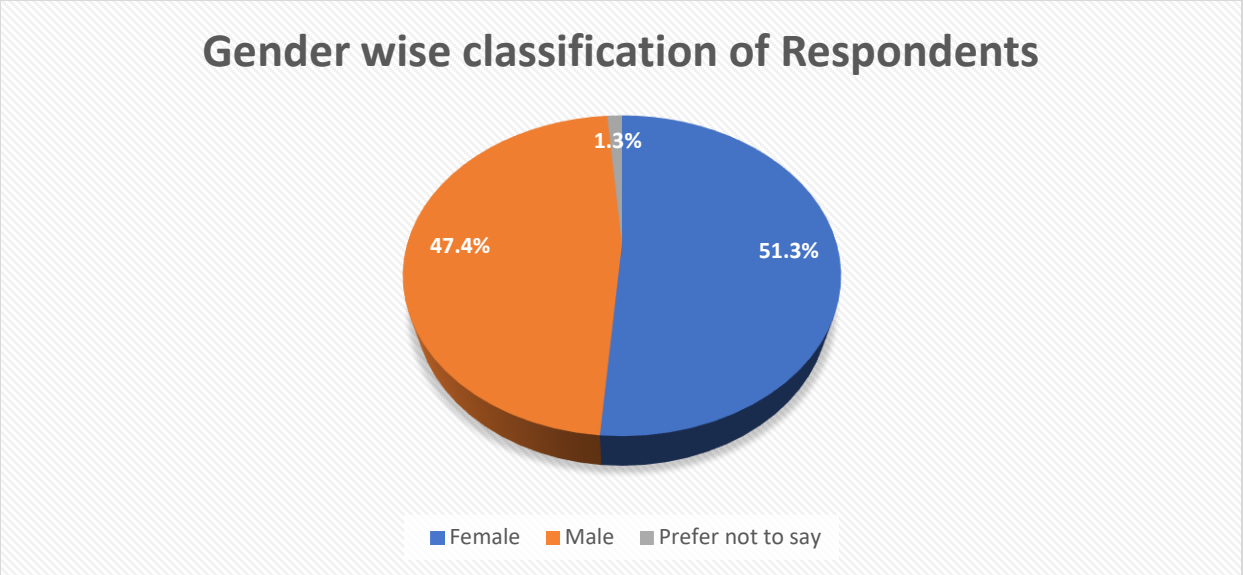
Quantitative data was analyzed using descriptive statistics (frequencies, percentages) and inferential statistics to identify patterns and relationships in the data.

4.1 Descriptive Analysis:

Table No. 1: Gender wise classification of Respondents

	Frequency	Percentage
Female	78	51.3
Male	72	47.4
Prefer not to say	2	1.3
Total	152	100.0

Source: Compiled from primary data

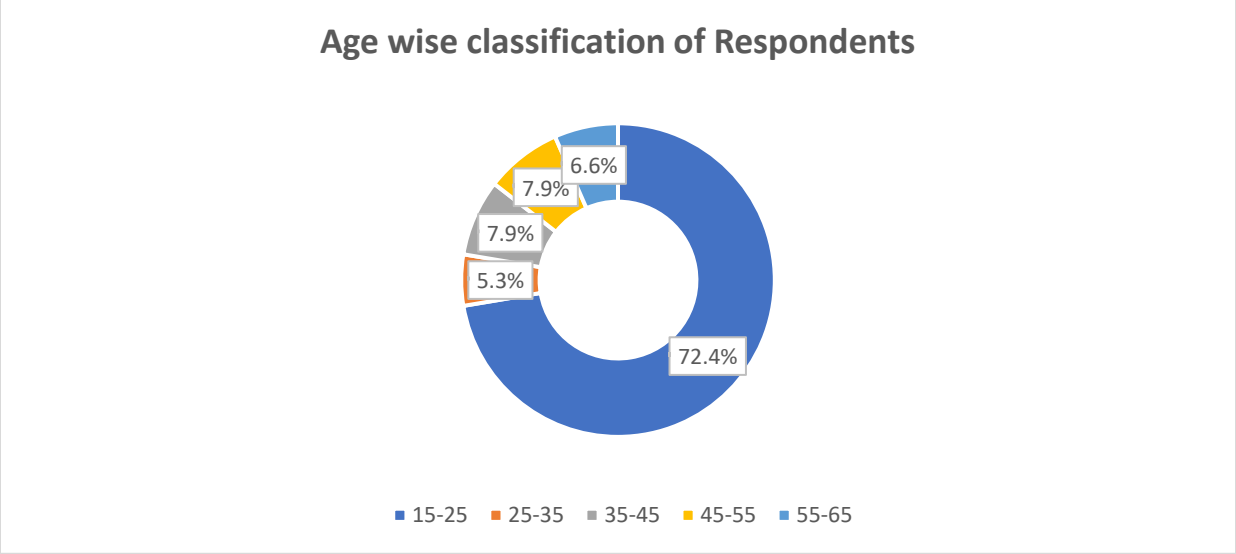


In our analysis we have collected responses from 152 residents of Greater Mumbai who have interacted with e-government services. It is evident from the table that number of male respondents are 72, female respondents are 78 and whereas as 2 respondents are preferred not to say. i.e., out of total respondents 47.4 percentage are male, whereas 51.3 percentage are females. It is clear that female respondents are more than male respondents.

Table No. 2: Age wise classification of Respondents

Age	Frequency	Percentage
15-25	110	72.4
25-35	8	5.3
35-45	12	7.9
45-55	12	7.9
55-65	10	6.6
Total	152	100.0

Source: Compiled from primary data



In our analysis we have collected responses from 152 residents of Greater Mumbai who have interacted with e-government services. It is evident from the table that 110 respondents are from age group of 15-25 (i.e. 72.4 percentage), 8 respondents are from age group of 25-35(i.e. 5.3 percentage), 12 respondents are from age group of 35-45(i.e. 7.9 percentage), 12 respondents are from age group of 45-55(i.e. 7.9 percentage) and 10 respondents are from age group of 55-65(i.e. 6.6 percentage). Usage of E-Governance services is highest among the age group 15-25(72.4%).

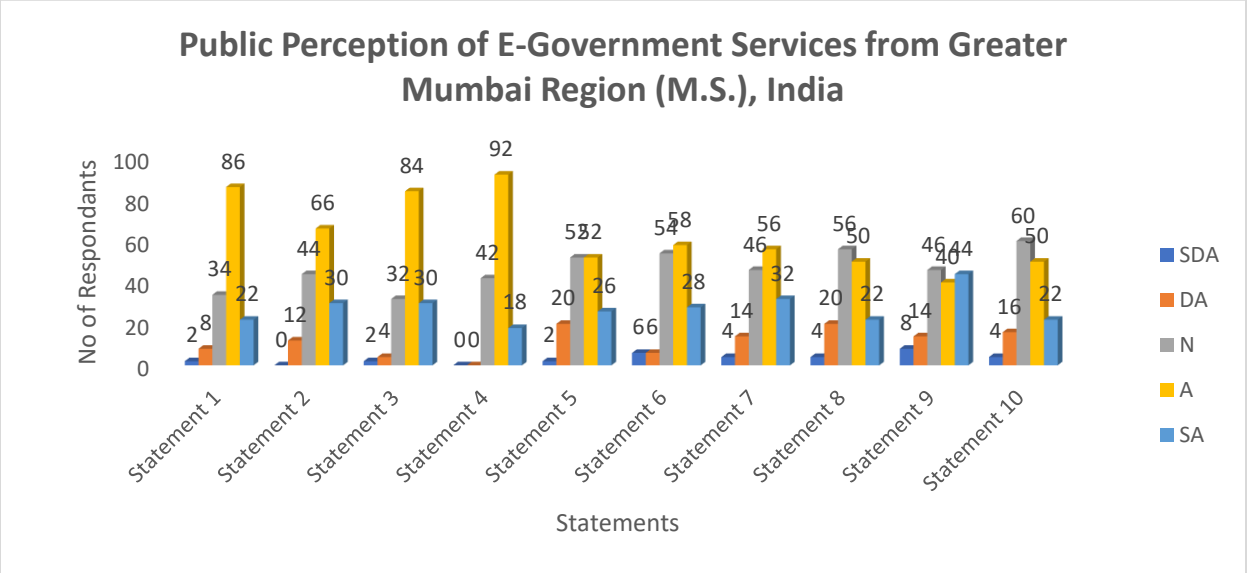
Table no. 3: Public Perception on E-Government Services

Statement	SDA	DA	N	A	SA	Total	Mean
Statement 1	2	8	34	86	22	152	3.776316
Statement 2	0	12	44	66	30	152	3.75
Statement 3	2	4	32	84	30	152	3.894737
Statement 4	0	0	42	92	18	152	3.842105
Statement 5	2	20	52	52	26	152	3.526316
Statement 6	6	6	54	58	28	152	3.631579
Statement 7	4	14	46	56	32	152	3.644737
Statement 8	4	20	56	50	22	152	3.434211
Statement 9	8	14	46	40	44	152	3.644737
Statement 10	4	16	60	50	22	152	3.460526
Overall Mean Score							3.660526

Source: Compiled from primary data

Note: SDA – Strongly Disagree, DA – Disagree, N – Neutral, A – Agree, SA – Strongly Agree

Statement No.	Statements
1	I am willing to adopt e-government services because it saves time and cost.
2	I adopt e-government services because it provides 24x7 service.
3	I adopt e-government services because it removes middle man and reduce chance of corruption.
4	I will recommend my friends to use e-government websites instead of visiting government office.
5	Rate the following in terms of Barriers in adopting e-government websites. [Digital literacy]
6	Rate the following in terms of Barriers in adopting e-government websites. [Lack of awareness]
7	Rate the following in terms of Barriers in adopting e-government websites. [Internet connectivity]
8	Rate the following in terms of Barriers in adopting e-government websites. [Complex login process]
9	Rate the following in terms of Barriers in adopting e-government websites. [Slow performance]
10	Rate the following in terms of Barriers in adopting e-government websites. [Safety]



In statement 1, out of 152 total respondents 2 respondents fully disagreed, 8 respondents are disagreed, 34 respondents are neutral, 86 respondents are agreed and 22 respondents are strongly agreed. Mean score of statement 1 is 3.78. In statement 2, out of 152 total respondents 0 respondents are fully disagreed, 12 respondents are disagreed, 44 respondents are neutral, 66 respondents are agreed and 30 respondents are strongly agreed. Mean score of statement 2 is 3.75. In statement 3 out of 152 total respondents 2 respondents are strongly disagreed, 4 respondents are disagreed, 32 respondents are neutral, 84 respondents are agreed and 30 respondents are strongly agreed. Mean score of statement 3 is 3.89. In statement 4, out of 152 total respondents 0 respondents are strongly disagree, 0 respondents are disagreed, 42 respondents are neutral, 92 respondents are agreed and 18 respondents are strongly agreed. Mean score of statement 4 is 3.84. In statement 5, out of 152 total respondents 2 respondents are strongly disagreed, 20 respondents are disagreed, 52 respondents are neutral, 52 respondents are agreed and 26 respondents are strongly agreed. Mean score of statement 5 is 3.53. In statement 6, out of 152 total respondents 6 respondents fully disagreed, 6 respondents are disagreed, 54 respondents are neutral, 58 respondents are agreed and 28 respondents are strongly agreed. Mean score of statement 6 is 3.63. In statement 7, out of 152 total respondents 4 respondents are fully disagreed, 14 respondents are disagreed, 46 respondents are neutral, 56 respondents are agreed and 32 respondents are strongly agreed. Mean score of statement 7 is 3.64. In statement 8 out of 152 total respondents 4 respondents are strongly disagreed, 20 respondents are disagreed, 56 respondents are neutral, 50 respondents are agreed and 22 respondents are strongly agreed. Mean score of statement 8 is 3.43. In statement 9, out of 152 total respondents 8 respondents are strongly disagree, 14 respondents are disagreed, 46 respondents are neutral, 40 respondents are agreed and 44 respondents are strongly agreed. Mean score of statement 9 is 3.64. In statement 10, out of 152 total respondents 4 respondents are strongly disagreed, 16 respondents are disagreed, 60 respondents are neutral, 50 respondents are agreed and 22 respondents are strongly agreed. Mean score of statement 10 is 3.46. The overall mean score of all statement is 3.66 which is above 3, which means maximum respondents are agreed to use E-Government Services.

4.2 INFERENTIAL ANALYSIS:

Null Hypothesis (H_0): There is no significant relationship between public demographic characteristics and their perception of E-Government services in the Greater Mumbai region. (Weightage average score is not less than 3)

Alternative Hypothesis (H_1): There is a significant relationship between public demographic characteristics and their perception of E-Government services in the Greater Mumbai region. (Weightage average score is more than 3)

To test the stated hypothesis, a weighted average method was applied, considering one sample and one key variable under study, namely perception. As presented in Table No. 3, the weighted average score was calculated to derive an inferential conclusion regarding the perception of E-Government Services from Greater Mumbai Region (M.S.), India.

The overall weighted average score for all the parameters under study was 3.66. Since this value exceeds the neutral benchmark, the alternative hypothesis is accepted and the null hypothesis is rejected.

V. CONCLUSION

The study examined citizens' awareness, usage, perceptions, and barriers related to e-government services based on responses collected from 152 participants in the Greater Mumbai region. The demographic findings show a nearly balanced gender distribution, with slightly more female respondents, while the majority of participants belonged to the 15–25 age group, indicating that younger individuals are more actively engaged with digital government services. The analysis reveals that citizens generally have a positive perception of e-government services, as reflected by the overall mean score of 3.66, which is higher than the neutral benchmark. Respondents believe that these services save time and cost, provide round-the-clock accessibility, and reduce the involvement of middlemen, thereby improving transparency and reducing corruption in government processes. Many respondents also expressed their

willingness to recommend e-government platforms instead of visiting government offices, indicating growing trust in digital governance. However, several barriers such as limited digital literacy, lack of awareness, internet connectivity issues, complex login procedures, slow system performance, and security concerns still affect the wider adoption of these services. The inferential analysis further confirmed a significantly positive perception toward e-government services in the Greater Mumbai region.

Following are the recommendations suggested to increase the awareness and usage of E-Governance services:

1. Promote E-Governance Services:

Greater efforts should be made to promote e-governance services among the public to improve awareness. This can be done through awareness programs in workplaces, educational institutions, and community centers. Government authorities can also broadcast informative advertisements on television and regional channels to reach a wider audience.

2. Improve Digital Literacy:

Steps should be taken to improve computer literacy and internet usage, especially among people aged **50** years and above and those who are less educated. Training programs and workshops can help citizens understand and use digital government services more effectively.

3. Encourage Online Government Service Usage:

Citizens should be encouraged to use e-governance platforms instead of visiting government offices physically. This will help save time, reduce paperwork, and make government services more efficient and accessible.

4. Use Social Media and Other Communication Channels:

Government departments should actively use social media platforms, personalized emails, and mobile notifications to create awareness about available e-governance services. Traditional media such as newspapers and radio can also be utilized effectively to reach a larger section of the population.

5. Improve Website Performance and User Experience:

Efforts should be made to make e-governance websites and applications more user-friendly, responsive, and free from technical glitches. Faster loading speed, simplified login procedures, and better security features will encourage more citizens to adopt these services.

Efforts must be made to make the E-governance website more responsive for glitch free experience.

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