Determinants Of Citizen Participation In E-Governance Services in Mumbai - An Exploratory Study

Dr. Maya Hande[1], Tanmay Kamble[2], Divya Kedare[3]
[1] *Assistant Professor, Vivek College of Commerce, Mumbai*
[2, 3] *Student-TYBCOM, Vivek College of Commerce, Mumbai*

Abstract*— *E-Governance refers to use of information technology in day-to-day functioning of various Government departments. The aim of research is to measure the awareness of E-Governance services and identify the determinants influencing the behavioral intention to use E-Governance. The study is based on the UTAUT model (Venkatesh et. al. 2003). The research has used primary and secondary data. The primary data was collected from individuals above 18 years residing in Mumbai Western Suburban region. The data was analyzed using multiple regression and reliability analysis. It was found that there was a limited awareness about E-Governance services. The application of proposed research model would increase citizen participation in E-Governance services.

Index Terms- Citizen Participation, Digital, E-Governance, Smart-Governance

I. INTRODUCTION

Digital transformation in India has led to digital economy and digitally empowered society. The digital revolution is the outcome of Digital India mission initiated by Government of India in 2015 to speed the process of digitalization. Use of information technology was brought in different Government services to make it accessible to citizens of the India.

E-Governance is the growing concept in India. The introduction of National Satellite-Based Computer Network (NICENET) in 1987 and District Information System of the National Informatics Centre (DISNIC) aimed to computerize all district offices in the country for which free hardware and software was offered to the State Governments. It provided the requisite impetus for E-Governance. It has led to rapid growth in use of digital technology in Government services in India.

In 2006, National E-Governance Plan (NeGP) was formulated by the Department of Electronics and Information Technology and Department of Administrative Reforms and Public Grievances that aims at making all government services accessible to the common man, ensure efficiency, transparency, and reliability of such services at affordable costs. The transparency has also increased the accountability and responsibility of Government departments. It helps to build the trust between Government and citizens. Further such digitalisation has focused on meeting the basic needs of common man.

Today, there are many E-Governance initiatives, both at the Union and State levels like MyGov.in, UMANG (Unified Mobile Application for New Age Governance), Swachh Bharat Mission Mobile app, BharatNet, Digi locker, e-Taal, Jeevan Pramaan etc. It has increased the reach of government services to the remote locations. Information technology is playing pivotal role in efficient delivery of Government services to citizens. Covid-19 pandemic has led to unprecedented need for digitalizing services including government services. Aarogya Setu app was a great help to tackle the pandemic situation in the country.

As defined by UNESCO, " E-Governance is the use of ICT by different actors of the society with the aim to improve their access to information and to build their capacities." According to Dr. A. P. J. Abdul Kalam, former President of India, "E-Governance is a transparent smart E-Governance with seamless access, secure and authentic flow of information crossing the interdepartmental barrier and providing a fair and unbiased service to the citizen"

In simple words E-Governance means delivering Government services using information technology. It works on three fundamentals: development of advance

digital infrastructure, on-line delivery of Government services and enhancing digital literacy across the country.

Although there has been increase in use of online mode in providing Government services, the real success of it lies in participation of citizens on larger scale. The use of E-Governance depends on many factors for e.g. ease of using the services, awareness, support and resources available etc. It is imperative to examine various factors influencing the use of E-Governance services. So, the present study has wide significance in the current digital era.

II. REVIEW OF LITERATURE

Spilotopoulou et.al. (2014) – The study aimed at developing a evaluating framework for advanced social media usage by Government agencies. Data was collected from public sector employees using quantitative and qualitative techniques.

Gupta and Suri (2017) – The research tried to explore different variables influencing public value in Government services based on situation-actor-process framework. Research was based on data gathered from citizens about two government services – passport and driving license services. It was found that citizen centric E-Governance services are needed to increase public value.

Singh and Singh (2018) – The research aimed at examining the existing E-Governance practices in India and to evaluate different initiatives for E-Governance. The study highlighted that creating infrastructure and sound legal framework are important challenges in implementation of E-Governance in India.

Meena (2021) – The study explored the challenges and opportunities in implementation of E-Governance in India. It threw light on the gap between users and non-users of E-Governance services and urged the need to minimise the gap by widening the reach of E-Governance services to all citizens especially the economically challenged section of society.

Chand(2017) – The research studied the benefits and demerits of E-Governance services in India. It emphasized the need to improve internet services to enhance the penetration of E-Governance.

Mondal(2019) – The researcher has undertaken a detailed study of E-Governance, models of E-Governance, initiatives of different states to implement E-Governance and highlighted the need to develop mechanism to increase coverage of E-Governance in India.

Mittal and Kaur(2013) – The research paper studied the challenges in E-Governance and examined at low literacy, low IT literacy, lack of user-friendliness of Government websites, problem in accessibility are the major problems in availing the services. The study highlighted the need to create awareness of E-governance services.

From the review of literature, it was found that most of the previous research were conceptual based focusing on understanding the models, benefits, challenges in E-Governance in India. Limited studies have used quantitative research and analysed the primary data to understand the reasons for not availing the E-Governance services in India. Moreover, quantitative research based on application of well-established models is not found in the previous studies.

So, the present study is undertaken to bridge the research gap by applying the theory based model to identify the factors affecting the coverage of E-Governance services in India.

III. RESEARCH OBJECTIVES

The present research was conducted to achieve following research objectives:

1. To measure awareness of E-Governance among the citizens.
2. To identify the predictors influencing the behavioral intention to use E Governance Services.
3. To provide recommendation on the finding of study.

IV. HYPOTHESES OF STUDY AND CONCEPTUAL FRAMEWORK

The research is based on UTAUT Model proposed by Venkatesh et.al in 2003. This model is widely used for analysing the behavioral intention to use on-line services. As per the model Behavioural Intention to use E-Governance Services is influenced by Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions and Hedonic Motivation.

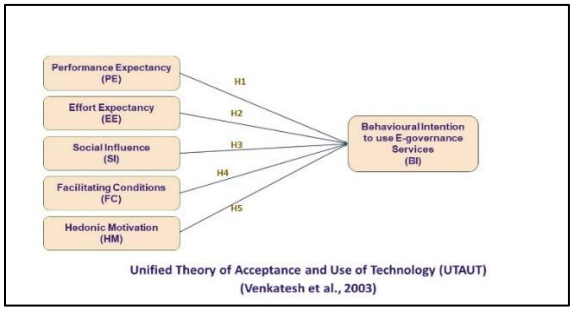


Figure: Proposed Research Model

As per the model Performance Expectancy refers to benefits of E-Governance Services to citizens. When people are aware of advantages of using E-Governance services, there would be increase in usage of E-Governance services. Previous studies have also highlighted to spread the benefits of E-Governance (Mittal and Kaur, 2013)

Hypothesis 1
H_{01} = PE has no significant impact on behavioural intention to use E-Governance services.
H_{a1} = PE has significant impact on behavioural intention to use E-Governance services.

Further, Effort Expectancy refers to ease of using E-Governance services. Involvement of citizens in E-Governance would increase only when they find it easy and convenient to use it.

Hypothesis 2
H_{02} = EE has no impact on behavioural intention to use E-Governance services.
H_{a2} = EE has significant impact on behavioural intention to use E-Governance services.

Social Influence refers to influence on social groups e.g. family, friends, co-workers etc. Social groups do greatly influence the intention of citizens to avail E-Governance services.

Hypothesis 3
H_{03} = SI has no impact on behavioural intention to use E-Governance services.
H_{a3} = SI has a significant impact on behavioural intention to use E-Governance services

Facilitating Conditions means support and availability of resources for using E-Governance Services. Usage of E-Governance would increase only when internet services and other support system are developed.

Hypothesis 4
H_{04} = FC has no impact on behavioural intention to use E-Governance services.
H_{a4} = FC has a significant impact on behavioural intention to use E-Governance services.

Hedonic Motivation means fun and pleasure in using E-Governance Services. If citizens find E-Governance websites and mobile applications more user friendly and interesting, the usage of E-Governance would increase.

Hypothesis 5
H_{05} = HM has no impact on behavioural intention to use E-Governance services.
H_{a5}= HM has significant impact on behavioural intention to use E-Governance services.

V. RESEARCH METHODOLOGY

Research Design
The present study is empirical research in which exploratory and descriptive research design is used. Survey method was used to gather primary data. It has also used data from secondary sources.

Target Respondents and Sampling.
The target respondents for the study were individuals above 18 years residing in Mumbai western suburban region. Data was collected from 214 respondents using convenience sampling method. The socio-demographic information included was age, gender and qualification.

Data Collection

A structured questionnaire was used to gather data using personal interview and web-based platform i.e. Google Forms. It was ensured to get representative data from different areas of Mumbai western suburban region.

Measurement of Variables

All the independent variables - Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions and Hedonic Motivation and dependent variable – Behavioural intention to use E-Governance were measured on 5-point scale adapted from Venkatesh and Davis (2003).

Reliability of different constructs was analysed. Reliability refers to internal consistency among the statements used in the construct. Cronbach Alpha (α) is the measure of reliability. The value of Cronbach Alpha equal to or higher than 0.7 shows higher internal consistency.

Table: Reliability Statistics of constructs used in the study

Sr. No.	Construct	No. of items	Cronbach Alpha (α)
1	Performance Expectancy (PE)	05	0.919
2	Effort Expectancy (EE)	03	0.904
3	Social Influence (SI)	03	0.772
4	Facilitating Conditions (FC)	05	0.901
5	Hedonic Motivation (HM)	02	0.902
6	Behaviourable Intention	04	0.913

Source – Primary Data (Field Survey)

The above Table highlights the reliability of different constructs used in the research The Cronbach Alpha value of all construct is more than 0.7. it denotes that all the constructs are reliable and have internal consistency.

VI. DATA ANALYSIS AND RESULTS

The collected data was edited and coded for further analysis. Data was analysed using IBM SPSS Statistics 25.

Demographic Profile of Respondents

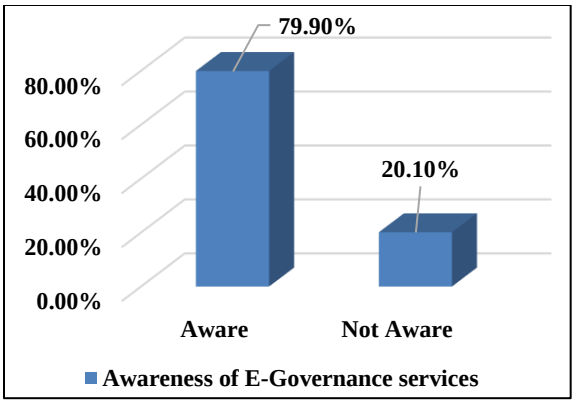
Table: Demographic Profile of Respondents

Demographic Variables		No. of Respondents (Frequency)	No. of Respondents (%)
Gender	Male	111	51.9%
	Female	103	48.1%
Age	18 TO 23	91	42.5%
	24 TO 29	34	15.9%
	30 TO 35	28	13.1%
	ABOVE 35	61	28.5%
Qualification	Below 10th	17	7.9%
	Below 12th	45	21.0%
	Graduate and post graduate	136	63.6%
	None of above	16	7.5%

Source – Primary Data (Field Survey)

As per above Table 1.1, out of 214 respondents, 111 (51.9%) are male and remaining are females. Further majority of respondents (42.5%) are in the age group 18-23 years and 63.6% respondents are graduate and post graduate.

Awareness of E-Governance Services

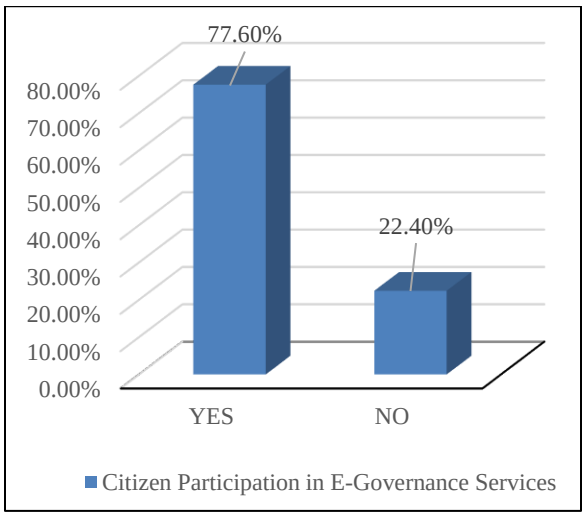


Source – Primary Data (Field Survey)

Figure: Awareness of E-Governance Services

As per above Figure, 79.90% respondents are aware of various E-Governance services and remaining 20.10% are still not aware of services offered by Government through online mode.

Citizen Participation In E-Governance Services



Source – Primary Data (Field Survey)

Figure: Citizen Participation in E-Governance Services

As per above Figure, 60% respondents have an opinion that providing Government service on online mode would increase in citizen participation in E-Governance services.

Regression Analysis and Testing of Hypotheses

Multiple Regression analysis was applied to explore the influence of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions and Hedonic Motivation on behaviourable intention to use E-Governance services and for testing hypotheses of the study. Multiple Regression helps to predict the value of outcome variable from multiple predictor variables.

Table: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.827[a]	.684	.676	.47497

a. Predictors: (Constant), HM, EE, FC, PE, SI

As per above Table, R^2 value is 0.684 i.e. 68% of variance in Behavioural intention to use E-Governance services is explained by all the predictors.

Table : ANOVA Statistics

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	101.405	5	20.281	89.898	.000
	Residual	46.925	208	.226		
	Total	148.329	213			

a. Dependent Variable: BI

b. Predictors: (Constant), HM, EE, FC, PE, SI

Above Table shows that independent variables significantly predict the dependent variable. $F(5,208) = 89.898$, $p < 0.05$. So, the model is good fit for the data and the model has better explanatory power.

Table: Coefficient Statistics

Model	Unstandardized Coefficients			Collinearity Statistics	
	B	t	Sig.	Tol.	VIF
	.621	3.430	.001		
PE	.284	4.575	.000	.345	2.897
EE	.030	.547	.585	.405	2.471
SI	.080	1.153	.250	.308	3.249
FC	.129	1.874	.062	.429	2.333
HM	.379	6.642	.000	.406	2.462

Source: Primary Data (Field Survey)

BI = 0.621+0.284*Performance Expectancy + 0.030*Effort Expectancy + 0.080*Social Influence + 0.129*Facilitating Conditions + 0.379* Hedonic Motivation

Above Table showing coefficient statistics, the β value of Hedonic Motivation (0.379) is higher followed by Performance Expectancy (0.284). As per the significant value, Performance Expectancy and Hedonic Motivation are statistically significant predictors of Behavioural intention. Further VIF value 10 and more and Tolerance value (Tol.) below 0.2 indicates collinearity statistics (Hair et.al. 2014). As the VIF and Tolerance value of all the constructs is meeting the threshold limit, so the model does not have multicollinearity problem

Summary of Testing of Hypotheses

Table: Results of Testing of Hypotheses

Hypotheses		β	p-value (Significant if <0.05)	Remark
H1	PE -> BI	0.284	0.000	Supported
H2	EE -> BI	0.030	0.585	Not Supported
H3	SI -> BI	0.080	0.250	Not Supported
H4	FC -> BI	0.129	0.062	Not Supported
H5	HM -> BI	0.379	0.000	Supported

Above Table reveals that Hypotheses H1 and H5 are supported as p value is less than 0.05. It indicates that Performance Expectancy and Hedonic Motivation have statistically significant influence on Behavioural intention to use E-Governance Services. Out of these two predictors, Hedonic Motivation has most significant influence on Behavioural intention to use E-Governance Services with β value of 0.379. Hypotheses H2, H3 and H4 are not supported as the p value is more than 0.05. So, Effort Expectancy, Social Influence, Facilitating conditions do not have significant influence on Behavioural intention to use E-Governance Services.

VII. FINDINGS AND RECOMMENDATIONS

It was found that 20.10% respondents are still not aware of E-Governance services. It is essential to create awareness about E-Governance services and it would enhance the citizen participation in E-Governance services.

Moreover, the research highlighted that Hedonic Motivation (HM) is the most significant predictor of E-Governance services usage intention. Hence, emphasis should be given on enhancing the hedonic motivation. Citizens should find websites, mobile applications, social media platforms providing E-Governance services more enjoyable, interesting, and innovative. Gamification of portals used for providing E-Governance services should be considered using elements like badges, tile and tab interface etc. Moreover, Suitable training programmes for such portal can be arranged for all users based on age (young v/s old), gender (male v/s female) and computer/internet usage experience (novice v/s expert)

Further, Performance Expectancy (PE) is also one of the significant predictors of E-Governance services usage intention. Hence, importance should be given on enhancing the performance expectancy. Efforts should be directed to make citizens realise the inherent benefits of E-Governance services. Awareness campaigns should be conducted targeting potential users to inform them about the real benefits they would gain from the use of these new types of services. Further wide publicity using various forms of media should be carried out where the focus should be on various benefits that the service will offer rather than just informing the people regarding the availability of the service.

VIII. LIMITATIONS AND FUTURE SCOPE OF STUDY

The present study is confined to Mumbai Western Suburban region only. Future studies may explore other regions/states. Comparative analysis based on demographic variables is not covered in the study. Future research studies can take up such comparative studies based on gender, age, area (rural vs urban), etc. The present study has considered E-Governance from

G2C perspective only. Future studies can explore G2B and G2G aspects of e-governance. The present study has focused on understanding usage intention towards E-Governance services in general. Future researchers can focus on a specific service / portal to gain a detailed insight. The present study has focused on e-governance services offered through websites & apps only. Future studies can explore use and effectiveness of social media platforms like Facebook, WhatsApp, Instagram, Twitter, etc. in providing e-governance services.

CONCLUSION

With government focusing on Digital India Mission, more and more services are now being brought into digital modes. However, the success of such e-governance services depends on its usage by the citizens. The present study has therefore explored predictors influencing the usage intention of such e-governance services. It was found that hedonic motivation and performance expectancy are significant predictors and thus suggested measures to improve these predictors.

As per the report by United Nations Department of Economic and Social Affairs, 2022, India's rank was105 amongst 193 countries with E-Government Development Index composite score of 0.59.

Though Digitalization is taking off in India and there has been rise in electronic transactions in Government services, Government has to go a long way to deepen usage of E-Governance in India. Even though Government of India initiated numerous steps to move towards digital economy, the digital divide still exists in the country. In this direction, the present study would contribute in effective penetration of e-governance services and minimising the digital divide.

With the advent of Artificial Intelligence technology, Government has vision to deploy AI in different E-Governance model in future. Further the initiative of 'Virtual Public Servant' would improve service quality of E-Governance. The right blending of digital technology and citizen focused strategies would help to enhance the digital development ranking of India.

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