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Evaluating the Factors Influencing Citizens' Satisfaction towards E-Governance Services

Shilpa D. Korde

Assistant Professor,
Rosary College of Commerce and Arts
Navelim Salcete Goa, India

S. V. Sukthankar

Associate Professor,
Government College of Arts, Science and
Commerce, Khandola, Marcela, Goa, India.

Abstract

The present study focuses on knowing how well-informed the citizens are about the e-governance services and measuring how satisfied citizens are with the e-governance services offered by the Goa Government. For this purpose, a sample of 150 respondents has been selected and studied. Data was collected through a designed questionnaire and analysed using the chi-square test, ANOVA, and factor analysis. An outcome of the study reveals that citizens are well informed about the e-governance services, and the elements such as reliability, security and privacy, citizen support, and transparency have a significantly positive impact on citizens' satisfaction in the state of Goa.

Keywords: Citizen, E-Governance, Government, Information and Communication Technology, Services, Satisfaction.

Introduction

Public sector organisations provide citizens with various government services that are easily accessible. Governments worldwide try to provide e-services through the public sector to citizens and businesses through e-government. Information Technology is increasingly viewed as a key component in improving how the public sector provides services to citizens (Seneviratne, 1999). In the era of digitalisation, every sector of the economy is trying to use the internet to avail and providing various commodities and services to satisfy customers' needs. In the past two decades around the world, governments have made use of e-governance initiatives to deliver information and services to citizens 24 /7, to the extent that nearly all national governments, most sub-national or state governments, and large numbers of local governments have established websites through which they provide e-government services (Norris & Lloyd, 2006). But to deliver public e-services, efficient user-oriented interaction between government and citizen is essential (Wirtz et al. 2015). With the same intention, in the year 2015, Government of India started "Digital India" with the illusion of transforming India into a "Digitally Empowered Society and Knowledge Economy." Under these initiatives, various mission mode projects were introduced based on 'Digital India.' Services provided through ICT in delivering services to the state's citizens are known as e-governance. By putting government services online, e-governance greatly reduces bureaucracy and enhances the quality of services in terms of time, content, and accessibility (The World Bank, 2015). E-governance refers to any government functions accomplished through information and communication technology, i.e., in digital form. It has been argued that previous literature on e-governance has paid more attention to exploring e-governance services from the supplier side; however, the citizen's perspective has been overlooked, resulting in limited published work (Weerakkody V., 2016). Goa is one of the states that delivers e-governance services to the citizens. This is designed as a crucial point of the Digital India Mission, and through its online portal, the Government of Goa enriches various e-governance services all the time to the citizens in the state of Goa.

Literature Review

Alkraihi A. I. (2020) studied two models, the technology acceptance model and Seddon's, which consider usability, utility, citizen happiness, system quality, and information quality. Data from a survey of 780 foundation-year students at Saudi Arabian government universities were used to compare the models. The dependent variable, citizen satisfaction, was used to examine the validity of the models. Increasing the benefits of e-government services for citizens would increase the efficacy of newly mandated e-government services, according to the findings, which showed that usefulness is a standard and crucial component in both TAM and Seddon's models and has the most significant impact on citizen satisfaction. Anwar M. et al. (2016) analysed and evaluated Afghanistan's present e-government services. Afghanistan adopted the proposed government-to-citizen (G2C) evaluation model to establish standards for citizen satisfaction with e-government services. Demand and supply formed the foundation for the G2C evaluation model's requirements, which significantly impacted citizen satisfaction. The results showed that factors such as service availability across multiple channels, citizen-centric features, para-lingual support, process performance, skills disparity, awareness, information security, and transaction security impact how satisfied citizens are with e-government services. To examine the relationship between interactions, usage of e-Government services and citizen satisfaction, Hazem Mohammad Al-Kaseasbeh et.al (2019) developed the expectation-confirmation theory. Data were analysed by using factor analysis, Item-

total correlation test, and Cronbach's alpha was used to verify the reliability and validity of the questionnaire. The findings indicated that the theory of expectation-confirmation of e-government services evaluation includes the citizens' satisfaction which is supported by perceived usefulness and service quality. Ju, J., et.al. (2019) proved that citizen engagement of e-governance was crucially a social transaction between public and their government where the citizen generates the private value. An attempt was made to analyse the mediating functions of two values based on cognitive integration theory and the civic voluntarism model. The comprehensive model found on ten assumptions about public e-participation in green commuting e-governance was created. Mishra S. S. & Geleta A. T. (2020) examined the mediating effect of perceived service delivery on the relationship between e-government and citizens' satisfaction. The survey of 123 respondents' was made in an Ethiopian context who were accessing services from the newly introduced e-government system at Addis Ababa Vital Events Registration Authority (AAVERA). The impact of the study indicated that the complete mediation effect of perceived service delivery of e-government on citizens' satisfaction. A survey of the British public conducted by the Royal Society for the Encouragement of Arts, Manufactures, and Commerce (2010) indicated that the factors affecting citizen satisfaction, in order of importance, are service quality, efficiency, correctness, and the professionalism of civil servants. In order to determine the quality of e-governance services that affects satisfaction of citizens Singh, V., & Singh, G. (2018) validated the model using confirmatory factor analysis and structural equation modelling. The findings showed that the quality of e-governance services and the information provided to individuals have a substantial influence on their satisfaction level. To analyse the factors affecting citizen satisfaction with e-government services in Turkish Ozturan M. and Surucu U. (2019) made an empirical study of 281 respondents. To estimate the effect of different factors on e-government citizen satisfaction, correlation analysis was used. The results of the study show that the factors such as ease of use, savings, trust, and service quality have positive impact on e-government citizen satisfaction. Olawale Oyewole et.al (2018) conducted their research in Nigeria, attempt was made to analyse the level of awareness and perception of the e-governance information portal by undergraduates. Descriptive survey research design was adapted to study undergraduates and the multistage random sampling technique was used to select sample size. The findings of the research reveal that the level of awareness of the e-governance information portal of Lagos State (Citizens Gate App) by the majority of the respondents was low. Wirtz B. W. & Kurtz O. T. (2016) developed a model for citizen satisfaction of e-governance portals by applying a mixed method approach. The outcome of the study was indicated that integration of downloadable forms, integration of a powerful search function, full online availability of e-government services, and perceived ease of use positively influence citizen satisfaction with e-governance city portals. Warale P. N. and Diwakar H. (2015), in their research paper, attempt to analyse the satisfaction of customers towards the e-governance initiatives to transmit services with a target of twenty additional services. The study described the e-governance initiative, SETU, implemented by Maharashtra Government that has existed for more than a decade. The outcomes of the study revealed that the citizens are marginally satisfied with service quality and that the government has to introduce the latest technologies to accomplish its objectives of accessibility, efficiency and service levels. V. Weerakkody et al (2016) investigated the impact of system quality, information quality, trust, and cost on citizen satisfaction with e-governance services. Data from 1518 e-governance service adopters across the United Kingdom were collected. The outcomes showed that the factors investigated in the study have a significant impact on citizens' satisfaction with e-governance services. Verdegem & Verleye, (2009) found out that Numerous studies about e-government satisfaction were conducted, from the effect of satisfaction on different aspects to determinants of e-government satisfaction.

Identification of Research Problem

The relevant review of literature on the present topic revealed that various conceptual studies had been conducted on services under e-governance, but a few empirical studies that too with limited geographical coverage. With respect to e-governance services, no comprehensive empirical study seems to have been conducted in the state of Goa in the present research area. There is a scarcity of empirically tested relations between e-governance services offered by the Government of Goa and their impact on the satisfaction of citizens considered in the study. In respect of the above, the current study focuses on to know how well-informed the citizen about the e-governance services as well as examine the elements, citizens will consider while using e-governance services. It also tries to measure how satisfied citizens are with the e-governance services provided by the Goa government. For this purpose sample of 150 respondents has been selected and studied. SPSS software is used to analyse the primary data collected through a designed questionnaire.

Research Questions

1. Is there any association regarding the awareness level of citizens towards e-governance services provided by the government?
2. Which factors are considered by citizen while using e-governance services?
3. Is there any significant impact of e-governance services on satisfaction of citizen in the state of Goa?

Objectives of the Study

The main objective of the study is to analyse the impact of e-governance services on the citizen in the state of Goa. However, the specific objectives that have been considered for the purpose of the study are stated below:

1. To study the awareness level of the citizens about the e-governance services provided by the Government of Goa.
2. To examine the factors citizens consider while using e-governance services.
3. To measure the satisfaction level of the citizens availing the e-governance services provided by the Government of Goa.

Research Methodology

Considering the above-mentioned objectives, a quantitative approach was chosen, and the following methodology was adopted for conducting the current study. The sample chosen for the purpose of the current study was citizens using government-to-citizen (G2C) services. Both primary and secondary data have been used. The primary data was collected by distributing questionnaires to 150 respondents, and secondary information was gathered from books, journals, e-books, e-journals, research papers, and official websites. Statistical tools used in the current study for analysis were the chi-square test, factor analysis, and regression analysis.

Hypotheses Formulation

Ho1: There is no association regarding citizens' awareness of e-governance services provided by the government across education in the state of Goa.

Ho2: There is no significant impact of e-governance services on citizens' satisfaction in the state of Goa.

Significance of the Study

The study is significant as it focuses on the factors citizens consider in availing of the services the government offers through e-governance. The research outcomes will help to know the productive areas of the e-governance portal and services and the areas that lack attention. The study will give necessary inputs to the government to introduce necessary changes in the various services to achieve the aim of e-governance.

Data Analysis and Interpretation

Demographic Profile of the Citizens

Table No.1 Demographic Profile of the Citizens

		Frequency	Percent
Gender	Male	74	49.33
	Female	76	50.67
Age	18-30 years	47	31.33
	31-45 years	39	26.00
	46-60 years	31	20.67
	Above 60 years	33	22.00
Education	HSSC	37	24.67
	Graduate	58	38.67
	Post Graduate	40	26.67
	Professional	15	10.00
Internet Usage	Once a month	54	36.00
	Sometimes a month	49	32.67
	Many times a month	47	31.33

Source: Computed from primary data

From Table No. 1, it was found that 49.33 percent of the respondents are male. A large proportion of the respondents is from 18-30 years old (31.33 percent). The options for education ranged from HSSC to professional, where 38.67 percent of respondents are graduates, and in the case of internet usage, respondents are almost equally distributed over three options, namely once a month, sometimes a month, and many times a month.

Analysis of the awareness level of citizens toward e-governance services

An attempt is made to find the awareness level of citizens towards various e-governance services offered by the Government of Goa. Chi –square test is used to analyse the following hypothesis.

Ho1: There is no association regarding the awareness of citizens towards e-governance services rendered by the government across education in the state of Goa.

Table No 2: Association of Respondents with awareness of e-governance services offered by the Government in the state of Goa.

Sr. No.	Awareness tested across Education	Chi-Square Value	Sig. Value	Decision on Null Hypothesis
1	Creation and Distribution of Certificates for Income	0.428	0.004	Reject Null Hypothesis
2	Caste Certificate	0.621	0.002	Reject Null Hypothesis
3	Domicile Certificate	0.320	0.305	Accept Null Hypothesis
4	Birth Certificate	0.783	0.852	Accept Null Hypothesis
5	Death Certificate	0.34	0.025	Reject Null Hypothesis
6	Divergence Certificates.	0.545	0.267	Accept Null Hypothesis
7	Water Bill Payment	0.76	0.007	Reject Null Hypothesis
8	Electricity Bill Payment	0.543	0.043	Reject Null Hypothesis
9	Property Tax	0.876	0.772	Accept Null Hypothesis
10	Motor Vehicle Tax	12.001	0.11	Reject Null Hypothesis

Source: Computed from primary data

From table no.2 the study hypothesized that the awareness of citizens has no association with regard to e-governance services across education of citizens. To study and test this hypothesis, a sample was analysed through a chi-square test. The result reveals that citizens of Goa are aware of e-governance services provided by government of Goa. Services like, the creation and distribution of certificates for income, caste certificates, death certificates, water bill payment, electricity bill payment and motor vehicle tax are found to be significant indicating that citizens are aware of these services. The P-value obtained is less than 0.05 indicates that the null hypothesis is rejected and the alternate hypothesis is accepted at 5% level of significance.

Analysis of the elements considered by citizens in availing the services offered by the government through e-governance.

A factor analysis has been performed to determine the prominent factors which influence on the citizens to avail of the services.

Table No 3: Factor Analysis on factors considered by citizens towards e-governance services in the state of Goa.

Factors considered by citizens in availing services under e-governance				
Factors	Components			
	1	2	3	4
The website information provided is reliable	.884			
The website system operated stably for the e-governance transactions.	.878			
The proper standard is followed in availing services online through the portal.	.860			
All the functions and services on the website operate normally.	.849			
Information shared on sites is accurate.	.781			
Citizens' grievances are handled properly.	.747			
Secrecy is maintained in availing of the services online.				
No risk of losing any files and information		.863		
The portal or sites are safe to use.		.826		
The sites and portal are user-friendly and easy to use.		.805		
Government sites are secure.		.525		
Convenient to avail of the services online.			.836	
Availing services online are cost effective.			.681	
Deliver quick services, and response is instant.			.645	
There is transparency in the services provided.				.672
Transparent transactions				.651
E-Services Government Websites are flexible.				.643
It reduces corruption				.590

Source: Computed from primary data

Table No 4: Variance of Usage

Sr. No	Name of the Factor	Eigen value	% of variance	Cumulative %
1.	Reliability	6.549	40.930	40.930
2.	Security and Privacy	3.446	21.540	62.470
3.	Citizen Support	2.795	17.472	79.942
4.	Transparency	.778	4.862	86.704

Source: Computed from primary data

The parameters used for analysis are Reliability, Security and Privacy, Citizen Support, and Transparency. Factor analysis and regression analysis are used to test the hypothesis. To study significant factors citizens of Goa consider in availing the e-governance services, 18 variables were used in the factor analysis to study the satisfaction of citizens. These variables are compressed into 4 main factors revealing citizens' preference toward e-governance services offered by the government of Goa. These retained factors are named as follows:

1. Reliability
2. Security and Privacy
3. Citizen Support
4. Transparency

“Reliability” as the first factor consists of the online information provided is reliable, trust in online websites and information, the proper standards is followed in availing services through the online portal, no paperwork is involved, information shared on sites are accurate, sites are flexible, citizen's grievances are handled properly and secrecy is maintained in availing the services online. This indicates that citizens feel availing of services through e-governance is benefiting them as they are of the opinion that online websites are reliable. A proper standard is followed to avail any services. Traditionally when red tapism was followed there were a lot of complexities, loopholes, and no proper standardisation which demotivated citizens to avail of services offline.

Second prominent factor named “Security and Privacy” shows that citizen prefers availing the services under e-governances as there is no risk of losing any file and information, and portal or sites are safe to use and user friendly. Factors such as security and privacy along with secrecy are some of the prominent factors is considered by citizens of Goa in availing the services online.

“Citizen support” as a factor comprises two variables, indicating that the citizens prefer availing services through e-governances as it is convenient for the masses to avail of the services online. Availing online services are cost-effective for them concerning time and distance, and quick services and responses are instant from government authority.

“Transparency” shows that, the citizens prefer and consider transparency as one prominent factor in availing the services through e-governance. Citizens believe that availing of services is better as secrecy can be maintained. Citizens can trace the proceedings of their applied document and are confident that there are fewer loopholes in the system.

The above factor analysis clearly shows the factor matrix containing factor loading for each variable on each factor which is obtained by the best linear combinations of variables expected through rotations converged. These factor loadings are the means of interpreting the role of each variable and the factor. The derived four factors have an Eigen Value of more than 1 and a total variance explained to the extent of 86.704 percent.

Further, regression analysis is performed using the four factors as the independent variables and regressed with the dependent variable, namely “Citizens of Goa are satisfied with the services offered by the government under e-governance”. The test of regression analysis is shown below:

Table No 5: Satisfaction of Citizens towards the e-governance services offered by the Government of Goa. Satisfaction of citizens is the difference between individual expectations and perceived performance. The following hypothesis has been derived for testing.

Ho2: There is no significant impact of e-governance services on the satisfaction of citizens in the state of Goa.		
Dependent variable: Citizens of Goa are satisfied with the services offered by the government under e-governance.		
R²: 0.596	f: 90.284	P: .000^b

Influencing factor	Beta	T-test	P value
Constant	4.012	91.245	.000
Reliability	.564	12.794	.000
Security and Privacy	.403	9.153	.000
Citizen Support	.460	10.438	.000
Transparency	.096	2.171	.031

Source: Primary Data

The Regression analysis has shown that identified factors considered for factors analysis have shown a positive impact on the satisfaction of citizens towards e-governance services of Goa. It is observed that the model is statistically significant. R square has explained 0.596 of total variation on the satisfaction of citizens towards e-governance services. It is observed that the p-values of all independent variables are found to have a positive impact on the satisfaction of citizens with regard to e-governance services offered in the state of Goa.

This underlines the fact that all independent variables taken together determine the dependent variable. All the independent variables are found to be individually significant and are collectively statistically significant.

Output of regression equation would be = 4.012 + .564 (Reliability) + .403 (Security and Privacy) + .460 (Citizen Support) + .079 (Transparency)

Considering the above equation, the findings indicate that citizens of Goa are satisfied with the e-governance services provided by the Government of Goa.

Conclusion

The main purpose of this study was to identify the factors influencing citizen satisfaction in Goa towards e-governance services. Past studies on satisfaction in different contexts arrived at four external variables relevant to e-government satisfaction. Services provided through ICT or involvement of digital democracy in transmitting services to the citizens of the state is known as e-governance. The study concludes that citizens are well-informed about the different services offered by the government under e-governance. Services like, the creation and distribution of certificates for income, caste certificates, death certificates, water bill payment, electricity bill payment and motor vehicle tax are found to be significant indicating that citizens are aware of these services. From the current research conducted, it can be concluded that reliable, cost effective, convenient, user friendly, quick and instant services are some of the factors considered by citizens in availing the e-governance services. With regards to the impact of e-governance services concerned, it has been found that reliability, security and privacy customer support and transparency have a significantly positive impact on the satisfaction of citizens of the state of Goa.

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