

Assessing Citizen Satisfaction with E-Governance Services in Bicholim Taluka of Goa: A Public Opinion Analysis

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Abstract: The integration of Information and Communication Technology (ICT) in public administration has fundamentally restructured citizen-government interactions worldwide. Although umbrella national initiatives like Digital India have established broad infrastructural frameworks, critical implementation gaps persist at regional and local levels. This study examines the dynamics of digital public service delivery across Bicholim Taluka, Goa, evaluating citizen awareness, platform adoption patterns, primary preference drivers, and overall user satisfaction. Utilizing a mixed-methods empirical approach, primary data was gathered from residents across 16 rural and urban localities via structured questionnaires and field observations. The findings uncover a pronounced paradox: high general conceptual familiarity with e-governance fails to translate into regular personal application, revealing a substantial divide between state administrative ambitions and ground-level execution. Key operational barriers—including procedural knowledge deficits, institutional trust issues, system navigation complexities, and rural connectivity constraints—continue to inhibit sustained digital engagement. Ultimately, this paper outlines targeted policy interventions designed to bridge the rural-urban digital divide and foster an inclusive, truly citizen-centered governance framework.

Keywords: E-Governance, Bicholim, Goa, ICT

Introduction

Background and Evolution of E-Governance

The structural evolution of Information and Communication Technologies (ICT) over recent decades has fundamentally transformed public administration, societal communication, and service delivery mechanisms worldwide. E-governance originated during the 1970s as a systemic attempt to leverage emerging technologies for public sector operations, administrative workflows, and digital information dissemination. Transitioning away from legacy paper-based administrative models, e-governance provides centralized, transparent, and direct service portals accessible to both state administrators and everyday citizens.

According to modern life-cycle theories of digital public administration, users within an e-governance framework operate across two primary functional roles: citizens and administrators. Citizens primarily engage with online government infrastructure to procure life-event documentation including birth, marriage, and

death certificates as well as social security benefits, tax filings, and educational registrations. Conversely, public administrators utilize e-governance portals to publish regulatory policies, resolve web-based operational errors, monitor system traffic, track user feedback, and manage daily civil routines.

The core objective driving e-governance deployment is the optimization of public service quality through technological integration. State institutions aim to provide equitable, transparent, and efficient access to public records and services while drastically reducing transaction costs, administrative delays, and corruption risks. However, building and maintaining robust e-governance systems presents ongoing operational challenges, particularly across developing economies where traditional bureaucratic mindsets and resource constraints hinder complete digital transformation.

Global and Indian Perspectives

On a global scale, e-governance represents a paradigm shift toward SMART governance defined by systems that are Simple, Moral, Accountable, Responsive, and Transparent. Advanced digital economies such as Estonia, Singapore, Denmark, and South Korea have set global standards through integrated digital identities, online voting platforms, cloud-based data hubs, and automated AI-driven public logistics. International evaluation frameworks, such as the United Nations E-Government Development Index (UN-EGDI), systematically evaluate nations based on telecommunication infrastructure, human capital capacity, and online service provision.

In India, the national e-governance paradigm expanded rapidly with the launch of the Digital India initiative in 2015. Built around key pillars such as universal mobile connectivity, public internet access, and digital identity platforms (DigiLocker, UMANG), Digital India sought to computerize government-to-citizen (G2C), government-to-business (G2B), and government-to-government (G2G) workflows. Centralized implementations are augmented by state-level initiatives, including E-Seva in Andhra Pradesh, Khajane in Karnataka, FRIENDS in Kerala, and Lokvani in Uttar Pradesh.

Despite ambitious visions, a pronounced implementation gap remains between high-level policy objectives and ground-level execution in India. Issues such as widespread digital illiteracy, economic hardship, inadequate physical broadband infrastructure in rural areas, bureaucratic resistance, and data privacy concerns continue to impede universal digital adoption.

Regional Context: Goa and Bicholim Taluka

The State of Goa has progressively integrated digital technologies into public service delivery under the guidance of its State Task Force and the foundational framework established by the 2005 Goa IT Policy. Initiated historically by the National Informatics Centre (NIC) Goa in 1989 through basic departmental computerization, the state's digital ecosystem now features state-wide fiber optic infrastructure (GBBN) connecting 189 village panchayats and 14 municipalities, alongside specialized cybersecurity centers run by

Goa Electronics Limited (GEL). Key digital applications operational within the state include Goa Online, mParivahan, UMANG, MyGov Goa, and Aykar Setu.

While state-level metrics reflect expanding transaction volumes on primary portals like Goa Online, regional adoption dynamics across mixed rural-urban administrative zones remain insufficiently evaluated. Bicholim Taluka represents a vital semi-urban and rural administrative region in North Goa where digital service delivery intersects directly with local demographic barriers. Evaluating public perception, usage frequency, and operational friction within Bicholim Taluka provides crucial insights into how digital governance operates at the community level.

Statement of the Problem

With rapid public sector digitization, assessing citizen perception and operational satisfaction is essential to ensure that technological transitions improve daily living standards rather than creating new digital exclusions. In Bicholim Taluka, significant variations exist regarding internet connectivity, technical literacy, and awareness across rural villages and urban towns. There is a critical need to empirically examine whether state e-services genuinely reach local populations or if structural barriers drive citizens back toward traditional offline channels.

Objectives

1. To measure the overall level of citizen satisfaction with e-governance services across Bicholim Taluka.
2. To explore service preferences and specific operational challenges experienced by rural citizens attempting to access digital public services.
3. To formulate practical, evidence-based recommendations to bridge the digital divide and elevate user satisfaction across local administrative units.

Theoretical Framework

Core Theoretical Dimensions of Digital Governance

Public administration scholarship categorizes e-governance as a complete structural transformation rather than a simple technological upgrade. Digital governance evolved from basic back-office data processing into complex networked environments that redefine administrative reform, democratic engagement, and operational cost efficiency. Modern frameworks evaluate e-governance along four core interaction models:

- **Government-to-Citizen (G2C):** Channels allowing citizens direct access to public records, state certificates, and utility payment portals. This model prioritizes citizen convenience, transparency, and accessible public service delivery.

- **Government-to-Business (G2B):** Streamlined digital workflows for corporate compliance, commercial licensing, tax processing, and public procurement. G2B interactions aim to reduce red tape, foster a business-friendly environment, and enhance commercial accountability.
- **Government-to-Government (G2G):** Inter-departmental data networks that eliminate redundant bureaucracy and speed up inter-agency communication. By integrating backend systems across central, state, and local administrative tiers, G2G systems facilitate seamless data sharing and administrative coordination.
- **Government-to-Employees (G2E):** Internal administrative portals managing civil service payrolls, human resources, operational performance tracking, and internal communications, designed to improve workforce management within public sector institutions.

The academic literature highlights diverse outcomes regarding digital public service adoption across developed and developing contexts. In advanced digital economies, research shows that citizen satisfaction correlates strongly with system personalization, interface simplicity, and transparent data communication. Furthermore, citizen trust in online portals is heavily mediated by their baseline experiences with offline civil servants; positive offline interactions reduce perceived security risks and encourage digital experimentation.

In the Indian context, scholarly evaluation of early state digital platforms such as Himachal Pradesh's Lokmitra, Andhra Pradesh's E-Seva, and Uttar Pradesh's Lokvani demonstrated that procurement of hardware alone does not guarantee success. Operational failure often stems from mismatches between sophisticated software designs and low end-user literacy, alongside inadequate infrastructure at the local level. To maintain long-term service viability, recent studies highlight the necessity of open-source architectures and cloud computing setups to lower licensing costs, accommodate heavy web traffic spikes, and ensure secure data handling across decentralized administrative boundaries.

Contextual Profile of E-Governance Platforms in Goa

Goa's digital governance framework operates through an interconnected network of centralized web portals and mobile applications, establishing direct interaction channels between citizens, government bodies, and commercial entities. The architecture integrates four primary platforms, each targeting distinct aspects of public service administration:

- **Goa Online:** Serves as the state's flagship Government-to-Citizen (G2C) and Business-to-Government (B2G) single-window portal. Managed by the Department of Information Technology (DoIT) and executed via Info Tech Corporation of Goa Ltd (ITG) and Goa Electronics Limited (GEL), the system hosts over 240 digital services spanning 41 government departments. Operating on a unified database architecture integrated with the State Data Centre (SDC) and State Service Delivery Gateway (SSDG), it manages core public workflows including birth and death registrations, revenue income

certificates, land record requests (Form I & XIV), and utility bill processing. To date, the portal has enrolled over 870,000 registered users and facilitated millions of online transactions.

- **mParivahan:** Developed by the Ministry of Road Transport and Highways (MoRTH) in partnership with the National Informatics Centre (NIC), mParivahan serves as a specialized mobile portal for transport sector management. Operating via the centralized national backends VAHAN (vehicle registration) and SARATHI (driving licenses), the application enables users to store digital vehicle documents, renew driving licenses, check traffic violation fines, and execute title transfers without requiring physical visits to regional transport offices.
- **UMANG (Unified Mobile Application for New-age Governance):** Developed by the Ministry of Electronics and Information Technology (MeitY) and the National e-Governance Division (NeGD), UMANG functions as a unified multi-platform aggregator. It provides single-point access to over 100 central and state government services. Features include integration with DigiLocker for credential storage, direct tracking of Employees' Provident Fund Organisation (EPFO) pension accounts, income tax filing portals, and health insurance validation networks.
- **MyGov Goa:** Launched as part of the broader national citizen engagement strategy, MyGov Goa acts as a primary crowdsourcing and public consultation platform. It enables local residents to contribute feedback on state policy drafts, participate in civic initiatives, submit budgetary recommendations, and access verified government news updates.

Together, these digital systems create a layered operational framework designed to automate administrative workflows, ensure transparent document verification, reduce transaction processing times, and minimize human-to-human bureaucratic friction across both urban municipal areas and rural village panchayats.

Research Methodology

This study uses an empirical, cross-sectional, mixed-methods research design combining primary field surveys, quantitative survey instruments, and qualitative interviews to analyse citizen satisfaction with digital governance services across Bicholim Taluka, Goa.

Sampling Strategy and Data Collection

The primary dataset was gathered from a sample of 100 adult citizens aged 18 years and older residing across Bicholim Taluka. To ensure balanced geographic coverage across urban centers and surrounding rural villages, surveys were distributed across 16 distinct localities: Sanquelim, Bicholim town, Mayem, Maulinguem, Pilgao, Karapur, Narve, Harvalem, Shirgao, Sarvan, Bordem, Ona, Podosem, Sal, Vaiginim, and Viridi.

Data collection utilized a structured questionnaire deployed in a hybrid format. Digital respondents completed web-based surveys via Google Forms, while paper questionnaires were administered in person to residents in remote rural areas or those with limited technical access. Field surveys were supplemented by qualitative

observations and unstructured interviews to record underlying non-quantifiable factors, such as tech-anxiety and institutional trust levels.

Data Management and Quality Assurance

Data integrity and security measures were maintained throughout the study. Survey records were anonymized, encrypted, and stored on secure storage systems. In accordance with research standards, respondents received full disclosures regarding the study's scope prior to participation, and informed consent was collected from all participants. Collected raw data was coded, categorized, and analyzed using descriptive statistical tools, frequency distributions, cross-tabulations, and Likert-scale evaluations.

Empirical Findings and Data Analysis

Demographic Breakdown of Respondents

The survey sample covers a wide demographic spread across age, gender, geographic location, and specific residency areas within Bicholim Taluka. In terms of age distribution, young adults represent the largest share of participants, with 58% falling into the 18 to 25 age bracket and 27% belonging to the 26 to 35 age group. Older cohorts account for smaller portions of the sample, where the 36 to 45 age group represents 10% and the 46 to 60 age group makes up the remaining 5%. Gender representation stands at 63% male and 37% female. Geographically, the sample is evenly divided between rural and urban populations, with 52% residing in rural villages and 48% residing in urban municipalities. Looking at locality-specific distribution, Sanquelim accounts for the highest single share with 37 respondents, followed by Bicholim Town with 17, Mayem with 12, and Maulinguem with 9 respondents. The remaining 25 respondents are distributed across 12 other rural villages in the taluka.

Awareness and Platform Adoption Metrics

The empirical findings highlight a notable gap between general conceptual knowledge of digital governance and actual personal execution. While 72% of respondents report having a general conceptual awareness of e-governance, 28% remain unaware. Similarly, 69% of participants state they are aware of specific Goa state government e-services, whereas 31% lack this knowledge. However, when examining personal utilization status, only 52% of respondents have personally accessed or executed an online government service, leaving a large non-user group of 48% who have never used digital services.

Among non-users who face barriers to adoption, qualitative and quantitative feedback points to key structural and cognitive obstacles. The single most prominent barrier is a total lack of detailed procedural awareness, which was cited 49 times as a primary knowledge gap. Psychological factors also play a substantial role, with trust deficits and cybersecurity concerns being cited 27 times. Technical issues further exacerbate non-usage, as system navigation difficulties and interface complexity were reported 25 times.

For active digital users, platform adoption varies noticeably depending on the specific service provided. The state's primary single-window system, Goa Online, is the most widely adopted platform, capturing an active user share of 65.6% for tasks involving official certificates, business licenses, and utility payments. Transport-related services via the mParivahan mobile application serve 39.1% of active users for driver licensing and vehicle registration needs. The central and state integrated portal UMANG accounts for a 35.9% user share, while the civic engagement platform MyGov Goa reaches a 29.7% active user share for policy feedback and community initiatives.

Service Preferences and Access Modes

An analysis of why citizens access digital platforms demonstrates that interactions are largely transactional rather than participatory. Obtaining official government certificates (such as birth, income, residence, or caste documents) serves as the primary purpose of access for 49% of respondents, closely followed by digital utility bill payments for power and water services at 42%. General site and portal navigation accounts for 39% of user visits. Conversely, civic participation tools are heavily underutilized, as public grievance redressal and complaint filings represent the main purpose of access for only 7% of citizens.

Looking at operational frequency, overall platform interaction remains low across the general population. A majority of 55% interact with e-governance portals only on a rare or occasional basis, while frequent regular users make up 23% of the sample, and 22% report zero activity. When evaluating preferred service access channels, direct digital access via online portals or mobile apps is preferred by 61% of citizens. However, traditional and mediated routes remain important for others, as 22% still prefer physical visits to government offices, 14% rely on third-party intermediaries or family assistance, and 3% utilize mixed or unspecified access channels.

Evaluative Satisfaction and Usability Metrics

Citizen evaluations of platform performance were gathered across three core operational dimensions using a five-point scale ranging from strongly agree to strongly disagree.

Regarding system usability and simplicity, 5.2% of respondents strongly agree that the systems are simple and easy to use, and 32% agree, bringing total positive usability perceptions to 37.2%. A large plurality of 45.4% remained neutral, indicating underlying difficulties in navigating interfaces, while 12.4% disagree and 5.2% strongly disagree, representing a combined 17.6% dissatisfaction rate.

Time-saving operational efficiency scored as the strongest positive aspect of digital service delivery. A combined 66.7% of citizens hold positive views, with 25.3% strongly agreeing and 41.4% agreeing that online portals save considerable time compared to traditional office visits. Neutral responses account for 25.3%, while 3% disagree and 5.1% strongly disagree due to technical issues such as server delays or stalled application processing.

In terms of information accuracy and reliability, 10% of participants strongly agree that platform information is reliable, and 36% agree, establishing a 46% overall positive trust rating. A significant 45% of respondents maintained a neutral stance, reflecting uncertainty regarding real-time status updates, while 6% disagree and 3% strongly disagree with system accuracy.

Structural Vulnerabilities and Policy Gaps

The empirical analysis highlights four major structural vulnerabilities within the local digital governance ecosystem:

The Awareness-Execution Gap: High basic conceptual awareness (72%) paired with low personal execution rates (52%) confirms that public outreach campaigns effectively communicate what services exist, but fail to instruct citizens how to process transactions independently.

Underutilized Civic Participation Tools: Low adoption rates for public grievance filings (7%) and civic engagement platforms like MyGov Goa (29.7%) show that state portals function primarily as transactional processing utilities rather than tools for active democratic engagement.

Rural Digital Divide: Poor broadband coverage, periodic mobile network disruptions in outlying rural panchayats (e.g., Sal, Maulinguem, Virdi), and lower digital literacy drive persistent reliance on third-party intermediaries.

System Design Barriers: Complex user interface navigation and language barriers alienate non-English literate populations, contributing to the high 45.4% neutral usability response rate.

Strategic Policy Recommendations

To transition digital governance in Goa from a basic transactional setup into an inclusive, citizen-centered model, state policy frameworks must implement strategic operational upgrades across five key pillars:

First, expanding assisted service networks through the Gramin Mitra initiative is essential. Deploying trained digital aides to rural panchayats provides direct doorstep service delivery for elderly, rural, and mobility-impaired residents who face tech-anxiety or digital literacy barriers.

Second, platform interfaces require comprehensive localization and simplification. State web portals and mobile applications must embed full Konkani and Marathi language options alongside icon-driven navigation and automated voice chatbot assistance to eliminate English-language technical barriers.

Third, panchayat-level infrastructure must be strengthened. Upgrading the Goa Broadband Network (GBBN) fiber-optic backbone across outlying rural areas and installing public Wi-Fi kiosks at all Village Panchayat offices ensures equitable internet connectivity.

Fourth, public awareness strategies need to shift toward practical instructional literacy. Organizing hands-on usage workshops and step-by-step portal demonstrations at local community centers and educational institutions will build direct user confidence.

Fifth, state authorities must establish clear data transparency and security protocols. Displaying visible cybersecurity certifications and launching public privacy assurance campaigns will mitigate the 27% trust deficit preventing non-users from adopting online government platforms.

Conclusion

This study evaluated citizen satisfaction, usage patterns, and adoption barriers regarding e-governance services across Bicholim Taluka, Goa. The empirical findings show an evolving digital ecosystem where time-saving conveniences such as online certificate processing and utility bill payments through platforms like Goa Online and mParivahan are widely valued by active users. However, a substantial 48% non-utilization rate, alongside low overall interaction frequencies, highlights ongoing challenges, including procedural knowledge gaps, interface complexities, trust deficits, and rural connectivity disparities.

Achieving truly inclusive digital governance in Goa requires addressing these structural obstacles directly. By expanding assisted service networks, localizing interfaces, upgrading rural broadband infrastructure, and providing practical digital literacy training, state authorities can effectively bridge the digital divide. Ultimately, converting e-governance into an accessible, citizen-centric administrative system ensures that technological advances deliver tangible and equitable public benefits across all communities.

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