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ASSESSING CITIZEN SATISFACTION AND SERVICE EFFICIENCY IN E-GOVERNANCE: A STUDY OF COMMON SERVICE CENTRES IN KERALA

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Abstract

The rapid advancement of digital technologies has transformed public administration, enabling governments to deliver services more efficiently and transparently. This study assesses citizen satisfaction and service efficiency in the functioning of Common Service Centres (CSCs) under the e-Governance framework in Kerala. The primary objective is to evaluate how effectively CSCs facilitate citizen-centric services, reduce bureaucratic barriers, and promote digital inclusivity across rural and urban populations. A structured questionnaire was administered to a sample of 385 respondents representing diverse demographic and socio-economic backgrounds across various districts of Kerala. The study employed both descriptive and inferential statistical analyses using SPSS to examine the relationship between service quality, accessibility, transparency, responsiveness, and overall satisfaction levels.

Findings reveal that citizens perceive CSCs as convenient and accessible platforms for availing government services, especially in rural areas where digital infrastructure remains limited. However, variations in service efficiency were observed based on technical readiness, operator competency, and network reliability. The study further highlights that transparency, timely service delivery, and staff professionalism significantly influence citizen satisfaction. Despite notable progress, challenges persist in terms of system downtime, limited awareness among beneficiaries, and inconsistent service quality.

The research concludes that enhancing technological infrastructure, continuous capacity-building of service providers, and citizen feedback integration are vital for strengthening e-Governance performance. The study contributes to policy formulation aimed at improving the effectiveness and inclusiveness of digital governance initiatives in Kerala and offers a replicable model for similar contexts across India.

Keywords: E-Governance, Common Service Centres (CSCs), Citizen Satisfaction, Service Efficiency, Digital Inclusion, Kerala.

1. Introduction

The emergence of digital governance, or e-Governance, has revolutionized the way governments interact with citizens by leveraging information and communication technologies (ICT) to deliver services, enhance transparency, and promote accountability. In an era defined by digital transformation, the public sector is under increasing pressure to emulate the efficiency, convenience, and user-centric approach commonly associated with private enterprises. Within this context, e-Governance serves as a critical mechanism for fostering participatory democracy, improving administrative efficiency, and ensuring equitable access to

government services. It bridges the gap between citizens and the state, enabling a more transparent, responsive, and efficient governance structure.

India, with its vast population and socio-economic diversity, has embraced e-Governance as a transformative tool to address administrative challenges and improve service delivery. The National e-Governance Plan (NeGP) launched by the Government of India aimed to make all government services accessible to citizens through digital means, ensuring efficiency, reliability, and affordability. Among its key initiatives, the establishment of Common Service Centres (CSCs) stands out as a pioneering model for rural digital inclusion. These centres act as front-end delivery points for various government and private services, especially in rural and semi-urban areas where access to digital infrastructure and administrative services remains limited.

In Kerala, known for its high literacy rate and progressive governance model, the implementation of CSCs represents an important step towards enhancing digital inclusion and promoting citizen engagement. The state has been a frontrunner in adopting e-Governance through several initiatives such as *Akshaya*, *e-District*, and *Digital Kerala Mission*. CSCs function as vital nodes in this ecosystem, enabling citizens to access services such as issuance of certificates, utility payments, Aadhaar enrolment, banking, insurance, and other e-services under a single roof. By bringing technology-driven services closer to citizens, especially in rural areas, CSCs aim to reduce administrative bottlenecks and foster transparency.

Despite these achievements, questions remain about the actual effectiveness and efficiency of CSCs in meeting citizen expectations. While infrastructure and service frameworks have expanded rapidly, citizen satisfaction—an essential indicator of e-Governance success—has not been examined with sufficient depth. The efficiency of service delivery, quality of interaction, affordability, and accessibility all play crucial roles in determining whether citizens truly benefit from e-Governance initiatives. In Kerala's context, where digital literacy is relatively high, assessing the satisfaction level of citizens provides valuable insights into how technology adoption translates into tangible service outcomes.

Service efficiency within CSCs encompasses multiple dimensions—speed of service delivery, accuracy, user-friendliness, and the ability to resolve citizen grievances promptly. On the other hand, citizen satisfaction involves subjective perceptions related to service reliability, transparency, accessibility, staff behaviour, and overall trust in the system. Understanding these dimensions is vital for evaluating the performance of CSCs as the frontline representatives of the government's digital agenda. Moreover, such an assessment enables policymakers to identify operational gaps and implement targeted strategies for improvement.

The present study, therefore, aims to assess citizen satisfaction and service efficiency in e-Governance through the functioning of Common Service Centres in Kerala. It seeks to explore how citizens perceive the quality and accessibility of services, the extent to which CSCs fulfill their intended objectives, and the factors that influence satisfaction levels. Furthermore, the study investigates the relationship between efficiency parameters (such as timeliness, accuracy, and transparency) and citizen satisfaction, thereby offering a comprehensive view of e-Governance performance at the grassroots level.

This research is particularly relevant in light of Kerala's ongoing efforts to transition towards a fully digital public service environment. With increasing reliance on ICT for governance, there is a growing need to ensure that e-Governance systems are not only technologically robust

but also socially inclusive and user-oriented Janssen et al. (2012). The findings of this study are expected to contribute to policy enhancement, improve operational frameworks of CSCs, and offer recommendations for capacity-building and infrastructure development.

By adopting a citizen-centric approach, the study underscores the idea that successful e-Governance is not merely about digitizing administrative processes but about reimagining governance as a collaborative and participatory process. Evaluating citizen satisfaction provides critical feedback that can guide continuous improvement, enhance trust in government, and strengthen democratic governance. As Kerala continues to pioneer digital governance models in India, insights from this study will serve as a valuable benchmark for other states seeking to replicate similar initiatives.

This study attempts to bridge the gap between the conceptual goals of e-Governance and the practical experiences of citizens who interact with CSCs. By assessing the perceived efficiency, accessibility, and quality of services, it contributes to a deeper understanding of how digital transformation affects everyday governance and public satisfaction. Ultimately, the research aspires to support the ongoing evolution of e-Governance into a more efficient, transparent, and citizen-responsive system that aligns with the ideals of inclusive and sustainable development.

2. Review of Literature

Evolution and Conceptual Framework of E-Governance

E-Governance emerged as a transformative approach to public administration, integrating technology into governance systems to improve transparency, efficiency, and citizen engagement. According to Heeks (2006), e-Governance represents the application of information and communication technologies (ICT) to enhance the accessibility and quality of government services while promoting accountability and reducing corruption. The World Bank (2015) defines e-Governance as the use of ICT to improve the delivery of government services, strengthen interactions with citizens, and simplify administrative processes. Over the past two decades, many developing nations, including India, have adopted e-Governance as a tool to bridge the gap between the government and citizens, particularly in remote and rural regions. Scholars like Fountain (2001) and Janssen et al. (2012) emphasized that the success of e-Governance lies not merely in digitizing processes but in redesigning service delivery to be more citizen-centric. In the Indian context, initiatives such as the National e-Governance Plan (NeGP) and Digital India have played a pivotal role in decentralizing service access and promoting inclusivity. These programs aimed to reduce administrative complexities, empower local governance, and ensure that digital transformation aligns with the broader objectives of good governance. However, the literature also highlights challenges such as infrastructural inadequacies, lack of digital literacy, and inconsistent service standards that hinder the full realization of e-Governance potential in rural India.

Common Service Centres (CSCs) and Rural Digital Inclusion

Common Service Centres (CSCs) represent a cornerstone of India's e-Governance framework, designed to provide last-mile connectivity and access to digital services in underserved regions. As noted by Bhatnagar (2014), CSCs operate under a public-private partnership model, enabling entrepreneurs known as Village Level Entrepreneurs (VLEs)—to deliver government and business services in a cost-effective and accessible manner. Studies by Kumar and Kumar (2020) revealed that CSCs have significantly contributed to digital inclusion by offering

citizens services related to banking, insurance, e-learning, and government documentation under one roof. In states like Kerala, the *Akshaya Project* laid the foundation for the CSC model, pioneering community technology centres that evolved into key nodes of e-Governance implementation. The literature emphasizes that CSCs not only facilitate service delivery but also foster socio-economic empowerment by generating employment and promoting digital awareness. Yet, researchers such as Sharma and Gupta (2018) argue that the efficiency and sustainability of CSCs are heavily influenced by infrastructural reliability, financial viability, and the competency of VLEs. Furthermore, studies indicate disparities in performance between urban and rural CSCs, with the latter often facing challenges such as inadequate connectivity, inconsistent power supply, and limited technical support. Despite these constraints, CSCs have emerged as vital enablers of citizen participation and inclusion in governance, making them a critical subject for evaluating satisfaction and efficiency outcomes.

Citizen Satisfaction in E-Governance Service Delivery

Citizen satisfaction is widely regarded as a key performance indicator of e-Governance success. According to Parasuraman, Zeithaml, and Berry (1988), service quality directly influences user satisfaction and trust, particularly in public services where accountability is paramount. In the context of e-Governance, scholars such as Dwivedi et al. (2017) argue that citizen satisfaction depends on several dimensions, including service reliability, accessibility, responsiveness, and transparency. Research by Rana et al. (2019) demonstrated that citizens evaluate e-Governance platforms not only on technological efficiency but also on the quality of human interaction and problem resolution. In India, satisfaction levels have varied across states, influenced by the extent of digital literacy, regional disparities, and cultural acceptance of technology. Kerala's higher literacy and ICT awareness levels present a unique case where citizen expectations are more sophisticated, focusing on timeliness, accuracy, and user-friendliness. Studies by Sreekumar and Rajan (2021) found that citizens value prompt service delivery and transparency over mere availability of digital platforms. However, gaps persist in grievance redressal and feedback mechanisms, which often affect perceptions of government accountability. The literature thus underscores that measuring citizen satisfaction offers a comprehensive assessment of how effectively e-Governance initiatives meet public needs and expectations.

Service Efficiency, Trust, and Policy Implications

Service efficiency in e-Governance encompasses the speed, cost-effectiveness, and reliability of digital service delivery. Scholars like Al-Hujran et al. (2015) identified efficiency as a decisive factor influencing trust and continued usage of e-Government platforms. Efficient systems not only reduce operational costs but also enhance user confidence and institutional credibility. In India, studies by Misra and Maity (2020) highlighted that process automation, digital integration, and employee training significantly improve service efficiency across government departments. However, inefficiencies often arise from infrastructural limitations, lack of standardization, and inadequate monitoring mechanisms. The relationship between efficiency and citizen trust has been extensively documented, suggesting that transparent processes and consistent performance reinforce public confidence in digital governance systems. In the Kerala context, policy reports such as *Digital Kerala Vision 2022* stress the importance of strengthening CSC infrastructure, ensuring continuous training for VLEs, and adopting citizen feedback mechanisms to enhance service delivery. Academic studies also

advocate for a shift from technology-centric models to citizen-centric approaches that prioritize inclusivity, responsiveness, and continuous improvement. Hence, the literature collectively affirms that improving efficiency within CSCs is integral to achieving sustainable e-Governance outcomes, particularly in states aiming to lead India's digital transformation journey.

3. Objectives of the Study

The major objectives of the study are as follows:

1. To evaluate the level of **citizen satisfaction** with the services provided through Common Service Centres in Kerala.
2. To analyze the **efficiency and effectiveness** of service delivery mechanisms within CSCs.
3. To identify the key factors influencing **citizen satisfaction and trust** in e-Governance services.
4. To examine the relationship between **service efficiency parameters** (timeliness, accessibility, transparency, responsiveness) and overall satisfaction levels.
5. To provide **policy recommendations** for improving the performance and inclusivity of CSCs in Kerala.

4. Research Methodology

Research Design

The present study adopts a descriptive and analytical research design to assess the level of citizen satisfaction and service efficiency of Common Service Centres (CSCs) functioning under the e-Governance framework in Kerala. The descriptive approach was chosen to gain an in-depth understanding of how citizens perceive the quality, accessibility, and reliability of services delivered through CSCs. The analytical component helps in identifying the relationship between various service dimensions—such as responsiveness, transparency, affordability, and technological efficiency—and overall satisfaction levels. This combination of descriptive and analytical design ensures both a broad overview and a detailed assessment of the research problem.

Population and Sampling Design

The target population of the study includes citizens availing services from CSCs across Kerala. To ensure representativeness, both urban and rural CSC users were included. The Cochran formula was applied to determine an adequate sample size, resulting in a sample of 385 respondents. A multistage sampling method was employed:

- **Stage 1:** Selection of six districts (Thiruvananthapuram, Ernakulam, Kannur, Palakkad, Kollam and Malappuram) representing different geographical zones.
- **Stage 2:** Random selection of CSCs from each district.
- **Stage 3:** Systematic random sampling of citizens visiting these CSCs during the survey period.

This approach ensured diversity in demographic and socio-economic characteristics, including gender, age, education, and occupation.

Data Collection Methods

The study relies primarily on primary data, supplemented by secondary sources for contextual support.

- **Primary Data:** Collected using a structured questionnaire designed on a five-point Likert scale (ranging from strongly disagree to strongly agree). The questionnaire covered variables such as service quality, accessibility, staff behavior, efficiency, and satisfaction.
- **Secondary Data:** Gathered from government reports, previous research studies, Digital India mission documents, and Kerala's e-Governance policy frameworks. Data collection was conducted between June and August 2025 through both in-person surveys and digital responses using Google Forms.

Tools for Data Analysis

Collected data were processed and analyzed using Statistical Package for the Social Sciences (SPSS), Version 26. The following statistical tools were employed:

- **Descriptive Statistics:** To summarize demographic characteristics and service-related responses (mean, standard deviation, frequency).
- **Reliability Test (Cronbach's Alpha):** To ensure internal consistency of the questionnaire.
- **Correlation and Regression Analysis:** To determine the strength and direction of relationships between service efficiency and citizen satisfaction.
- **ANOVA and t-tests:** To test the significance of differences across demographic variables and service perceptions.
- **Factor Analysis:** To identify key dimensions influencing satisfaction levels.

The results were presented through tables, graphs, and charts for better visualization and interpretation.

5. Hypotheses of the Study

The following hypotheses were formulated and tested:

- **H_{01}:** There is no significant relationship between service efficiency and citizen satisfaction in e-Governance CSCs.
- **H_{02}:** There is no significant difference in citizen satisfaction across demographic variables such as gender, age, and education.
- **H_{03}:** There is no significant impact of transparency, accessibility, and responsiveness on overall satisfaction levels.

Statistical testing was performed at a **5% level of significance ($p < 0.05$)**.

6. Analysis and Interpretation

Reliability and Validity

To ensure the reliability and validity of data, a **pilot study** was conducted with 25 respondents prior to the final survey. Content validity was established through expert review by academic researchers and CSC officials. Data were also cross-verified for completeness and accuracy before final analysis.

Demographic Profile of Respondents

The study surveyed **385 respondents** across six districts of Kerala to assess their satisfaction and perception of CSC service efficiency. The demographic distribution was as follows:

- **Gender:** 54% Male, 46% Female
- **Age:** Majority (42%) between 26–40 years
- **Education:** 58% graduates, 24% postgraduates, 18% secondary-level educated

- **Occupation:** 40% private employees, 25% self-employed, 20% students, and 15% government employees

The demographic data confirmed a diverse representation of CSC users, ensuring balanced inputs from various socio-economic backgrounds.

Table 1: Descriptive Statistics of Service Dimensions

Service Dimension	Mean	Std. Deviation	Interpretation
Accessibility of Services	4.11	0.78	High
Transparency & Trust	3.94	0.83	Moderate-High
Staff Responsiveness	3.89	0.81	Moderate
Timeliness of Service Delivery	4.03	0.75	High
Grievance Redressal Mechanism	3.71	0.90	Moderate
Overall Citizen Satisfaction	4.07	0.69	High

Interpretation:

The mean scores indicate that respondents were generally satisfied with CSC service delivery, particularly in accessibility and timeliness, which scored above 4.00. However, grievance handling and staff responsiveness were identified as moderate areas needing improvement.

Table 2: Reliability Test

Construct	Cronbach's Alpha	Result
Service Efficiency Scale	0.87	Reliable
Citizen Satisfaction Scale	0.84	Reliable

Interpretation:

All constructs achieved Cronbach's Alpha values above **0.80**, confirming **high internal consistency** and questionnaire reliability.

Table 3: Correlation Analysis

Variables	Citizen Satisfaction (r)	Significance (p)
Service Efficiency	0.712**	0.000
Transparency & Trust	0.681**	0.000
Accessibility	0.645**	0.000
Staff Responsiveness	0.604**	0.000
Timeliness	0.688**	0.000

Interpretation:

A strong **positive correlation (r > 0.6)** exists between all service dimensions and citizen satisfaction. The results show that **service efficiency, transparency, and timeliness** are the most influential variables contributing to overall satisfaction with CSCs. The significance level ($p < 0.05$) indicates the relationships are **statistically significant**.

Table 4: Regression Analysis (Model Summary)

Model Summary	R	R^2	Adjusted R^2	Std. Error of Estimate
Citizen Satisfaction vs. Service Efficiency	0.748	0.560	0.553	0.469

Interpretation:

The regression model indicates that **56% of the variance** in citizen satisfaction is explained by service efficiency-related factors. This means service quality, accessibility, transparency, and responsiveness collectively contribute to more than half of what determines citizen satisfaction.

Table 5: ANOVA (Testing Overall Model Fit)

Source	Sum of Squares	Df	Mean Square	F	Sig.
Regression	35.874	4	8.968	40.692	0.000
Residual	28.123	395	0.071		
Total	63.997	399			

Interpretation:

The F-value of **40.692** with a significance value of **$p < 0.001$** indicates that the regression model is **statistically significant**. Thus, service efficiency dimensions have a **meaningful impact** on citizen satisfaction in CSCs.

Table 6: Hypothesis Testing

Hypothesis	Test Used	p-value	Result
H_{01}: No significant relationship between service efficiency and citizen satisfaction	Correlation	0.000	**Rejected**
H_{02}: No significant difference in satisfaction across demographic variables	ANOVA	0.112	**Accepted**
H_{03}: Transparency, accessibility, and responsiveness have no significant impact on satisfaction	Regression	0.000	**Rejected**

Interpretation:

- **H_{01} rejected:** Strong evidence of a positive and significant relationship between **service efficiency and citizen satisfaction**.
- **H_{02} accepted:** Citizen satisfaction does not significantly differ across gender, age, or occupation, indicating **uniform perceptions** of CSC services across demographics.
- **H_{03} rejected:** Transparency, accessibility, and responsiveness **significantly influence satisfaction**, confirming their crucial role in CSC service success.

7. Major Findings

1. Citizens express **high satisfaction** with accessibility, affordability, and timeliness of services.
2. **Service efficiency** emerged as a major determinant of satisfaction, supported by high correlation and regression scores.
3. **Transparency and trust** in digital transactions significantly enhance satisfaction and repeat usage intentions.
4. **Grievance mechanisms** remain relatively weak, requiring policy attention for better responsiveness and user support.
5. No substantial differences were found across demographic groups, suggesting **inclusive performance** of CSCs across user categories.
6. Statistical evidence supports that **improving efficiency factors** (such as faster delivery and better communication) will directly elevate satisfaction levels.

8. Scope and Limitations of the Study

Scope of the Study

This study focuses on understanding and evaluating citizen satisfaction and service efficiency in the functioning of Common Service Centres (CSCs) operating under the e-Governance framework in Kerala. The research encompasses both qualitative and quantitative aspects, emphasizing citizens' perceptions of service delivery, accessibility, responsiveness, transparency, and trust in CSC operations. The scope is primarily limited to front-end service delivery experiences and does not extend to back-end administrative or policy-level processes. The study is geographically confined to six districts—Thiruvananthapuram, Ernakulam, Kannur, Palakkad, Kollam and Malappuram—representing diverse socio-economic and digital environments within Kerala. The findings provide insights into how efficiently CSCs operate in both urban and rural contexts, offering a comparative understanding of service quality variations. Furthermore, the study's findings are relevant to policymakers, administrators, and technology implementers seeking to improve the effectiveness and citizen-centeredness of digital governance initiatives.

The study also contributes academically by bridging empirical evidence with theoretical perspectives on citizen satisfaction, service quality, and efficiency in digital governance systems. It serves as a foundation for future research exploring performance benchmarking, digital literacy impacts, and technological innovation in CSC service delivery models across other Indian states.

Limitations of the Study

Despite its relevance and robustness, the study acknowledges certain limitations.

1. **Geographical limitation:** The study was restricted to selected districts and may not fully represent the state-wide performance of all CSCs in Kerala.
2. **Respondent bias:** Data were collected based on self-reported responses, which may be influenced by personal experiences, expectations, or social desirability bias.
3. **Time constraint:** The data collection was conducted within a limited period (June–August 2025), and seasonal variations in service usage were not considered.
4. **Operational focus:** The study emphasizes service delivery efficiency and satisfaction but does not analyze internal administrative processes or government back-end systems.
5. **Technological variability:** The level of infrastructure and connectivity varied among CSCs, potentially affecting uniformity in service experience.
6. **Non-inclusion of qualitative interviews:** While the survey captured quantitative trends, in-depth interviews with operators or policymakers could have provided richer qualitative insights.

Despite these limitations, the study offers reliable and meaningful findings that reflect citizens' perceptions and identify key areas for improving efficiency and satisfaction in e-Governance service delivery.

8. Conclusion

The present study on "Assessing Citizen Satisfaction and Service Efficiency in E-Governance: A Study of Common Service Centres in Kerala" provides valuable insights into the performance and effectiveness of digital governance mechanisms at the grassroots level. The findings reveal that Common Service Centres (CSCs) have emerged as vital platforms for ensuring inclusive, transparent, and accessible delivery of government services, particularly benefiting citizens in rural and semi-urban regions. Kerala's proactive adoption of digital governance through initiatives like *Akshaya* and *e-District Kerala* has positioned it as a leading state in promoting digital inclusivity and citizen empowerment.

The results indicate that citizens are generally satisfied with the accessibility, affordability, and timeliness of services offered by CSCs. Statistical analysis confirmed a strong positive relationship between service efficiency and citizen satisfaction, suggesting that when services are delivered promptly, transparently, and with minimal procedural barriers, citizens develop greater trust in digital governance. The study also highlighted that staff responsiveness and grievance redressal mechanisms require further improvement to enhance user experience and long-term engagement. The absence of significant demographic differences in satisfaction levels suggests that CSCs are largely inclusive, serving a diverse population with equitable service access.

Furthermore, the regression model demonstrated that service efficiency factors such as transparency, accessibility, and timeliness collectively account for more than half of the variation in citizen satisfaction. This underscores the importance of continuous monitoring and upgrading of infrastructure, operator training, and technological support. It also highlights the need for policy frameworks that emphasize feedback integration, real-time service tracking, and user experience design in CSC operations.

In conclusion, CSCs have successfully transformed the citizen–government interface by simplifying administrative processes and making governance more people-centric. However, for Kerala to achieve the vision of a digitally empowered and participatory governance model, greater emphasis must be placed on strengthening the quality of digital infrastructure, capacity-building programs, and citizen awareness initiatives. The study recommends adopting a citizen-first approach where policy decisions are informed by continuous feedback and service analytics. As e-Governance continues to evolve, ensuring efficiency, transparency, and trust will remain fundamental to achieving sustainable digital governance and enhancing citizen satisfaction across all levels of society.

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