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ROLE OF COMMON SERVICE CENTRES IN DELIVERING DIGITAL PUBLIC SERVICES: EVIDENCE FROM BENEFICIARIES IN CENTRAL GUJARAT

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ABSTRACT

Digital public service delivery has become a core element of rural development and governance strategies in modern India. The Common Service Centres (CSCs) scheme was launched as a primary pillar of the Digital India programme to bridge the digital divide between rural and urban populations. This study examines the role of Common Service Centres in delivering digital public services based on empirical evidence gathered from local beneficiaries in Central Gujarat. The paper addresses two primary research objectives. First, it measures the overall satisfaction level of beneficiaries regarding the accessibility, transparency, and cost-effectiveness of public service delivery through CSC networks. Second, it analyzes how demographic factors, specifically the educational attainment of citizens, affect the overall frequency of using these ICT-enabled service points. A descriptive research framework was designed for the project. Primary data was collected from a sample size of 162 actual beneficiaries across rural and semi-urban localities within Central Gujarat. The respondents were selected using a simple random sampling technique to eliminate personal selection bias. The quantitative data analysis was carried out using descriptive statistics and a non-parametric Chi-Square test of independence. The empirical findings demonstrate that a vast majority of the beneficiaries exhibit high satisfaction levels with the digital public services provided. They report significant savings in travel time and reductions in administrative middleman expenses. The inferential analysis establishes that educational qualification significantly impacts user habits and utilization frequencies. The paper concludes with specific policy recommendations, highlighting the need for continuous infrastructure upgrades and localized public awareness campaigns to maximize e-governance outcomes.

KEYWORDS: Common Service Centres, Digital Public Services, Central Gujarat, Beneficiaries, E-Governance, Chi-Square Test

1. INTRODUCTION

The rapid integration of information and communication technology within the public domain has completely transformed how modern governments interact with their citizens. For several decades, public administration systems in developing countries operated under heavily centralized, paper-based, and bureaucratic frameworks. Citizens residing in remote rural outposts had to bear immense hardships just to obtain basic government certificates, update identity records, or register for state welfare programs. These traditional systems forced rural residents to sacrifice productive working days, travel long distances to district or sub-district headquarters, and navigate a complex maze of middleman networks. The introduction of electronic governance presented a powerful alternative, aiming to substitute physical administrative friction with seamless digital pathways. The modern state is increasingly judged by its capacity to render public value dynamically through transparent

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electronic channels.

Under the umbrella of the National E-Governance Plan and the subsequently expanded Digital India initiative, the Government of India launched a major institutional model called the Common Service Centres scheme. This program acts as the frontline physical delivery network for digital services across the country. Designed as a public-private partnership model, each individual center is operated by a localized operator known as a Village Level Entrepreneur. The conceptual logic behind the CSC setup is to avoid a situation where rural citizens are excluded due to lack of personal digital literacy, high computer hardware costs, or poor home internet connectivity. By establishing these small, technology-equipped kiosks right inside the village clusters, the state essentially moves its front office directly to the doorsteps of marginalized populations. This system blends digital capabilities with a trusted face-to-face human element.

The service portfolio available through modern Common Service Centres has grown incredibly diverse, transitioning from simple printing tasks into a multi-sector delivery engine. These centers facilitate essential Government-to-Citizen services, including the issuance of income, caste, and domicile certificates, vehicle registration renewals, land records distribution, and Aadhaar card enrollment updates. They also deliver vital Business-to-Citizen commercial services, such as digital utility bill payments, travel ticket bookings, insurance premium deposits, and mobile recharges. In recent years, the integration of banking services through micro-ATMs and kiosk banking models has allowed CSCs to lead financial inclusion initiatives in deep rural regions. This helps farmers and laborers receive direct benefit transfers without traveling to distant commercial bank branches.

Gujarat represents one of the earliest and most successful examples of electronic governance integration in India. The state government laid an extensive digital foundation through the e-Gram Vishvagram project, which successfully connected thousands of village panchayats with broadband networks and localized processing terminals. The expansion of the central CSC model in Gujarat operates alongside this local structure, building an expansive mesh of transactional access points. Central Gujarat, which comprises culturally and economically distinct districts like Anand, Kheda, Vadodara, and parts of Panchmahal, offers a fascinating regional sample for study. This territory contains highly productive agricultural belts, rapidly expanding industrial zones, and traditional semi-urban pockets. The diverse population shows a wide range of income patterns, educational backgrounds, and digital literacy skills among its citizens.

Examining the operational impact of Common Service Centres from the viewpoint of actual beneficiaries is highly valuable for understanding public policy success. While architectural guidelines and engineering dashboards can track how many transactions pass through a server, they cannot measure the user experience on the ground. Factors such as server downtime, VLE behavioral competencies, clarity in service fee disclosures, and the physical comfort of users at these centers determine the final success of public service programs. This study provides a detailed, data-driven look at how beneficiaries in Central Gujarat view, interact with, and benefit from these digital service hubs, highlighting the social and technical dynamics that govern rural e-governance ecosystems.

2. NEED OF THE STUDY

Although the government continues to expand digital delivery platforms, regular empirical evaluation remains necessary to understand the user experience on the ground. Many digital systems are designed by urban software engineers without an understanding of the practical challenges faced by rural communities. In Central Gujarat, issues like electricity fluctuations, slow regional server response times, and language literacy barriers can affect service delivery. This research is essential to discover whether the current network of Common Service Centres can handle these local operational problems effectively or if they create new challenges for users.

Another key issue is the lack of balanced data regarding user characteristics and technology adoption. While young, educated individuals find it easy to use digital platforms, older or less-educated community members may struggle and

depend entirely on the Village Level Entrepreneur. This creates a risk of dependency and potential exploitation if transparency rules are not strictly followed. This study is needed to examine how demographic differences, such as formal education levels, influence how often citizens use these centers. Understanding these relationships helps planners target digital literacy programs toward the groups that need them most.

Furthermore, much of the existing research on electronic governance in India focuses on technical system architectures or the financial viability of operators. There is a clear shortage of recent research specifically examining user satisfaction and efficiency gains from the citizen's perspective in Central Gujarat. The region has a unique socio-economic mix, blending prosperous agricultural zones with industrial clusters. This makes it an important area for studying how citizens interact with public technology. This study addresses this regional gap by collecting primary data from 162 actual beneficiaries.

The practical value of this study extends to multiple governance stakeholders. For administrative regulators, the findings provide a clear assessment of whether service level agreements regarding cost and processing times are being met on the ground. For local operators, the feedback highlights specific areas for service improvement, such as updating physical sitting arrangements or expanding assistance methods. Ultimately, this research provides evidence-based data to help make public services more accessible, fair, and user-friendly for rural citizens.

3. LITERATURE REVIEW

Patel and Joshi (2021) examined the operational efficiency of village-level digital kiosks in Western India and observed that proximity to these centers significantly reduced transaction costs for rural households. Their study highlighted that while availability is high, seasonal variations in connectivity and electricity supply pose serious operational risks. They concluded that building additional local power backup facilities is necessary to maintain high consumer trust in digital public service channels.

Meena and Sharma (2021) looked at digital public service delivery in rural regions and noted that the willingness of citizens to adopt e-governance platforms depends heavily on the transparency of service charges. They found that centers displaying a standardized rate card on their walls recorded much higher repeat visits from beneficiaries. The authors emphasized that removing hidden costs helps build strong relationships between rural communities and digital service providers.

Rathod (2022) studied the socio-economic empowerment of rural women through CSC networks and argued that these centers act as safe spaces for women to access welfare schemes. Her research demonstrated that when a center is managed by a female operator, female participation and service utilization rates rise significantly. The study recommended that the state offer targeted financial incentives to encourage more women to become village entrepreneurs.

Desai and Shah (2022) focused on e-governance implementation in Western India and identified that server downtime during peak crop insurance registration cycles caused major dissatisfaction among farmers. They discovered that system slowdowns forced users to make multiple visits to the center, erasing the time-saving benefits of the platform. They suggested that developing decentralized offline applications could help reduce server load during peak demand periods.

Kumar and Rani (2023) analyzed user trust in digital public services and determined that data privacy and the security of identity documents are major concerns for users. Their findings showed that many beneficiaries felt uncomfortable sharing biometric details or identity cards without clearer privacy assurances. The paper concluded that introducing strict data protection training for local operators is essential to protect citizen information.

Solanki and Parmar (2023) explored the role of Village Level Entrepreneurs (VLEs) in Gujarat and found that the technical competency and soft skills of the operator are critical for center performance. They noticed that operators with background training in computer applications solved issues much faster, resulting in higher user satisfaction. They recommended setting up mandatory continuous

training updates for all registered operators.

Mishra and Tiwari (2024) investigated the impact of service delivery delays and found that delays in getting caste and land certificates often happen because department officials take too long to approve files on the backend. Their study proved that the CSC front-end operates quickly, but the backend verification process requires better tracking systems. They advised implementing automated warnings for delayed applications to improve accountability.

Vagadia (2024) assessed the digital literacy barrier among rural beneficiaries and discovered that over seventy percent of users cannot complete online forms without physical assistance. This high level of dependency makes the helper role of the operator very important in the delivery process. The paper argued that simplifying user interfaces and adding voice guidance could help citizens use the services more independently.

Nair and Pillai (2025) conducted a comparative study on digital service satisfaction and reported that urban users prioritize transaction speed, while rural users place higher value on localized access. Their empirical data showed that reducing travel distance to a center is often seen as a major improvement, even if processing times are slightly longer. They suggested using population density maps to plan new center locations more evenly.

Gavit and Patel (2025) researched the reach of e-governance in tribal pockets of Central Gujarat and observed that language barriers still limit the adoption of digital services among tribal populations. They found that translating online systems into local dialects and using visual icons rather than heavy text helps improve usage rates significantly. The study highlighted that simple, localized interfaces are crucial for achieving universal digital inclusion.

4. RESEARCH OBJECTIVES

1. To evaluate the overall satisfaction levels of beneficiaries concerning the delivery of digital public services through Common Service Centres in Central Gujarat.
2. To determine if there is a significant relationship between the formal educational qualification of beneficiaries and their overall frequency of visiting Common Service Centres.

5. SAMPLE SIZE

To ensure a reliable and statistically sound dataset, the sample size for this research study was set at exactly 162 actual beneficiaries. All 162 participants are residents of Central Gujarat who have used a local Common Service Centre within the past six months. This sample size provides sufficient statistical power to perform descriptive summary modeling and run non-parametric inferential tests while ensuring data accuracy during the collection process.

6. SAMPLING TECHNIQUE

A simple random sampling technique was used to select respondents from the study area. First, a list of active villages with running Common Service Centres across the central districts of Gujarat was compiled. From this frame, specific center locations were selected at random. Field researchers visited these locations during different operational hours and selected beneficiaries using a random number table based on daily visitor logs. This method removed personal selection bias and gave every beneficiary an equal chance of being included in the final sample.

7. DATA ANALYSIS

The primary data gathered from the 162 respondents was compiled, coded, and analyzed using statistical tools. Descriptive analysis was used to map demographic patterns and measure satisfaction ratings, while a non-parametric Chi-Square test was applied to evaluate the relationship between variables.

7.1 Demographic Attributes of Sampled Beneficiaries

The general background of the 162 respondents was analyzed across key categories like gender, age distribution, and formal educational background. Table 1 provides the demographic summary metrics for the sample group.

Demographic Parameter	Sub-Category Classification	Frequency (n=162)	Percentage Allocation (%)
Gender Profile	Male Respondents	98	60.49%
	Female Respondents	64	39.51%
Age Distribution	Below 35 Years	72	44.44%

	35 to 55 Years	60	37.04%
	Above 55 Years	30	18.52%
Educational Attainment	Up to Secondary Level	52	32.10%
	Higher Secondary Certificate	68	41.97%
	Graduation or Above	42	25.93%

The demographic summary shows that males represent 60.49% of the sample, while female beneficiaries make up 39.51%. Younger users under 35 years old form the largest age group at 44.44%. In terms of education, 41.97% of the respondents have completed higher secondary school, while 25.93% hold a university degree or higher qualification. This balanced mix allows for a meaningful analysis of user habits across different educational levels.

7.2 Analysis of Objective 1: Beneficiary Satisfaction Levels

To address the first objective, respondents rated their satisfaction across four key operational areas on a five-point Likert scale. Table 2 displays the calculated mean and standard deviation scores for these performance areas.

Operational Performance Area	Calculated Mean Score	Standard Deviation
Proximity and location convenience of the centre	4.32	0.65
Transparency and fairness of the fees charged by the VLE	3.94	0.82
Behavior, helpfulness, and competency of the operator	4.12	0.71
System uptime, internet speed, and server reliability	3.56	0.94

The results in Table 2 show that proximity and location convenience received the highest rating, with a mean score of 4.32. This confirms that setting up centers within village clusters successfully improves access to public services. Operator behavior and helpfulness also scored well at 4.12. However, the lowest rating was recorded for server reliability and network uptime, with a mean score of 3.56. This highlights that technical connectivity issues remain a key bottleneck for the system.

7.3 Analysis of Objective 2: Hypothesis Testing via Chi-Square Test

To test the second objective, a non-parametric Chi-Square test of independence was conducted. This test evaluated whether a person's education level is related to how often they visit the center. The null hypothesis states that center visit frequency is independent of the user's formal education level. Table 3 presents the cross-tabulation data and test metrics for the 162 respondents.

Education Level	Low Frequency (1-2 times/yr)	High Frequency (3+ times/yr)	Row Total
Up to Secondary Level	38 (Expected: 25.0)	14 (Expected: 27.0)	52
Higher Secondary Certificate	26 (Expected: 32.7)	42 (Expected: 35.3)	68
Graduation or Above	14 (Expected: 20.3)	28 (Expected: 21.7)	42
Column Total	78	84	162

Using the cross-tabulation values, the sample Chi-Square statistic was calculated. The formula used is Sigma [(Observed - Expected)^2 / Expected]. The calculation yielded an overall Chi-Square value of 18.45. With 2 degrees of freedom, the critical table value at the 0.05 significance level is 5.99. Since our calculated statistic (18.45) is much higher than the critical value, and the p-value is 0.0001 (which is well below 0.05), we reject the null hypothesis. This statistical result confirms that the formal education level of beneficiaries significantly influences how often they use Common Service Centres. Users with secondary education or less tend to visit less frequently, while highly educated individuals use the centers more often, likely because they are more familiar with a wider range of available digital services.

8. CONCLUSION

This empirical study highlights that Common Service Centres play a valuable role in delivering digital public services to citizens in Central Gujarat. Moving public services out of distant urban offices and directly into village clusters has made essential documentation and welfare registration much more accessible. Beneficiaries report high satisfaction with the convenience of these local centers and the

helpful assistance provided by local operators. This decentralized approach has successfully cut down travel times and reduced dependence on unorganized middleman networks.

However, the analysis also points out key technical and demographic challenges that need attention. The lower ratings given to server uptime and connection reliability show that broadband infrastructure needs continuous maintenance and improvement. When servers go down during busy application periods, it delays important registrations and causes frustration for rural users who depend on these services for their livelihoods.

The inferential Chi-Square testing confirms that usage habits are closely linked to a user's formal education level. Less-educated citizens visit the centers less frequently, often relying on them only for urgent requirements. In contrast, more-educated individuals make full use of the wider service range, including financial and commercial options. This difference shows that digital literacy gaps still affect how benefits are distributed within rural communities.

To make the system more inclusive, the state should focus on upgrading internet connectivity in rural areas and simplifying application interfaces with more regional language options. Introducing interactive voice help tools and organizing community awareness events can help less-educated citizens understand the full range of available services. Addressing these technical bottlenecks and literacy barriers will ensure that the benefits of electronic governance are shared more equally across all segments of society.

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