



Digital India at the Grassroots: The Changing Landscape of Public Service Delivery through Common Service Centres

Aanchal Choudhary*¹ and Prof. Abdul Matin²

¹Department of Sociology, University of Science and Technology, Meghalaya, India

²Prof. (Retired) Aligarh Muslim University, Aligarh, Uttar Pradesh, Visiting Professor, University of Science and Technology, Meghalaya, India

*Corresponding Author E-mail: aanchal.chry@gmail.com

DOI: <https://doi.org/10.59436/jsiane.438.2583-2093>

Abstract

The Digital India Mission identifies Common Service Centres (CSCs) as pivotal institutions for last-mile digital governance and citizen–state engagement. This paper conducts a critical review of related literature, policy frameworks, and government reports to evaluate the role, performance, and challenges of CSCs in facilitating public service delivery across rural and semi-urban India. Employing a structured literature review methodology, the study synthesises insights across four key dimensions: digital infrastructure, human–digital capability, governance and accountability, and citizens’ experiences at CSCs. The findings reveal persistent challenges, including deficits in digital literacy, uneven infrastructural development, bureaucratic inefficiencies, gender and socioeconomic disparities, and regional imbalances that affect CSC functionality and inclusivity. The analysis further indicates that CSCs operate as dual spaces both empowering and exclusionary shaped by mediated access, local governance structures, and social hierarchies. To conceptualise these dynamics, the paper proposes a framework situating CSCs within broader socio-technical systems of governance, capability development, and market interaction. The study concludes with targeted policy recommendations aimed at enhancing the efficiency and equity of digital public service delivery. These include strengthening institutional accountability, promoting digital capacity building, and ensuring inclusive access to digital infrastructure in marginalised regions.

Keywords: Digital India, common service centres, e-governance, digital divide, rural development, digital literacy, public service delivery, ICT4D

Received 10.06.2025 Revised 16.07.2025 Accepted 03.09.2025 Online Available 20.09.2025

Introduction

The expansion of e-governance and the promotion of entrepreneurship in rural India have become central to the Government of India’s strategy for achieving inclusive, sustainable, and digitally empowered growth. Despite significant progress, the rural–urban digital divide continues to constrain equitable access to public services, economic opportunities, and information resources. Bridging this divide demands more than technological innovation; it requires institutional mechanisms that can enhance participation, transparency, and accessibility across diverse social settings. Within this context, the Common Service Centre (CSC) initiative has emerged as a transformative pillar of India’s digital governance architecture. The CSC model represents a paradigmatic shift from an “agency-centric” to a “citizen-centric” model of public service delivery (Heeks, 2003), redefining the relationship between citizens and the state. Situated at the intersection of technology, governance, and local entrepreneurship, CSCs are envisioned not only as digital access points but also as nodes of empowerment—spaces where the rural population engages directly with the processes of governance through mediated technology. However, the expansion of CSCs across India’s vast and uneven social terrain has exposed deep institutional and infrastructural challenges. While their promise of digital inclusion is compelling, their performance varies widely depending on geography, governance arrangements, and the social capital of local entrepreneurs. This paper aims to critically examine how these institutions are designed, how they perform, and how they mediate the citizen–state interface in practice.

Evolution of the CSC Framework- Aligned with the broader vision of Digital India, the CSC initiative aims to establish at least one centre in each of India’s 2.5 lakh Gram Panchayats, extending digital, financial, and citizen-centric services to rural populations. In August 2015, the Government of India launched CSC 2.0—an evolved phase building upon the earlier model with a renewed emphasis on service delivery and entrepreneurship.

This phase strategically leverages India’s growing digital infrastructure, including the State Wide Area Network (SWAN), State Service Delivery Gateway (SSDG), e-District platforms, State Data Centres (SDCs), and the BharatNet fibre network. Together, these systems aim to enhance interoperability, scalability, and citizen satisfaction. At the heart of CSC 2.0 are Village Level Entrepreneurs (VLEs)—local service providers who embody the initiative’s ethos of combining governance with entrepreneurship. Over time, the CSC framework has evolved into one of India’s most transformative mechanisms of public service delivery. By bringing digital governance to the doorsteps of rural citizens, CSCs have not only improved administrative efficiency but have also facilitated broader social, financial, and digital inclusion. The initiative has generated employment, empowered women and youth, and promoted local enterprise.

Viewed sociologically, CSCs are not mere extensions of state bureaucracy; they are hybrid spaces where technology, markets, and governance converge. As socio-technical innovations, they encapsulate India’s vision of an inclusive digital society one in which technology functions not merely as an instrument of efficiency but as a catalyst for empowerment, entrepreneurship, and equitable development.

Institutional Design and Governance Structure of CSCs

The CSC initiative functions under the Ministry of Electronics and Information Technology (MeitY) as part of the National e-Governance Plan (NeGP). Its implementation is managed through CSC e-Governance Services India Limited a Special Purpose Vehicle (CSC SPV) incorporated under the Companies Act of 1956. The CSC SPV serves as a coordinating body responsible for capacity building, financial sustainability, and policy execution.

Three-Tier Institutional Structure- The CSC ecosystem operates through a three-tier structure ensuring accountability and efficiency across multiple levels.

Village Level Entrepreneur (VLE):- At the grassroots level, each CSC is managed by a VLE who oversees daily operations. Acting as both service providers and entrepreneurs, VLEs deliver a range of government-to-citizen (G2C) and business-to-citizen (B2C) services. They act as intermediaries between rural citizens and digital governance platforms, reporting to the regional Service Centre Agency (SCA).

Service Centre Agency (SCA):- At the intermediary level, SCAs manage clusters of CSCs within a region. They ensure financial viability, operational efficiency, and sustainability. SCAs provide managerial support, technical assistance, and training to VLEs, thereby strengthening the network’s coherence and service quality.

State Designated Agency (SDA):- At the state level, SDAs function as nodal authorities appointed by state governments to oversee CSC implementation. They provide policy direction, monitor performance, and coordinate revenue disbursement to SCAs while ensuring alignment with state e-governance goals. Complementing this structure, the Department of Information Technology (DIT) established a National Level Service Agency (NLSA) to offer strategic oversight and standardisation. The NLSA bridges communication between the centre and the states, reinforcing consistency in policy execution and strengthening the overall CSC ecosystem.

Review of Literature

The literature review provides the conceptual and analytical foundation for this study, offering a systematic synthesis of existing scholarly work on Common Service Centres (CSCs) as instruments of e-governance and digital inclusion in rural India. Across academic and policy-oriented writings, CSCs have been analysed from diverse perspectives technological, economic,

administrative, and sociological. The review identifies recurring themes that illuminate how CSCs function as intermediaries between the state and citizens while also highlighting persistent gaps that hinder their full potential. For analytical clarity and to align with the objectives of this study, the literature is organised under four thematic domains: (1) E-Governance, (2) Infrastructure, (3) Social Bottlenecks, and (4) State-Specific Studies. A subsequent subsection develops the conceptual framework guiding this research, followed by a discussion of key research gaps that this study seeks to address.

E-Governance- E-governance, in the Indian context, represents the strategic integration of Information and Communication Technologies (ICTs) into public service delivery to promote efficiency, transparency, accountability, and citizen participation. The CSC model is an operational manifestation of this vision designed to bring governance closer to citizens by decentralising access to digital services at the village level. Scholars such as Uthaman (2017) argue that ICT-enabled platforms can significantly reduce transaction costs, processing time, and corruption relative to traditional bureaucratic systems. Within this ecosystem, CSCs act as one-stop access points delivering Government-to-Citizen (G2C), Business-to-Citizen (B2C), and social services to rural populations. However, the effectiveness of such delivery depends on the alignment of technology, institutional design, and local participation.

A growing body of literature focuses on service quality as a determinant of CSC effectiveness. While models such as SERVQUAL have been applied to e-governance contexts, their adaptation to CSC-specific conditions remains limited. Drawing from Uthaman (2017), key dimensions include information quality, system reliability, institutional responsiveness, usability, and citizen satisfaction yet these require empirical validation across diverse rural environments. Sharma and Sujeet (2021) identify fifteen major challenges constraining CSC utilisation in rural India. Prominent among these are low digital literacy, inadequate awareness of e-government services, long travel distances to centres, and relatively high transaction costs. These findings resonate with earlier work (S., 2005) that underscored issues of standardisation, data management, and localisation — particularly the lack of content in regional languages and the uneven availability of trained IT personnel. Naik and Joshi (2010) contend that CSCs have the potential to serve as catalysts for local market creation and poverty reduction by providing information crucial for livelihood enhancement and risk mitigation. Yet, their transformative potential is curtailed by structural limitations such as low broadband penetration, limited ICT ownership, and poor user training. Government evaluation reports (2011) suggest that CSCs across 19 states have collectively served approximately one in ten citizens, with certificate issuance, utility payments, and welfare enrolment being the most accessed services. However, they also note systemic inefficiencies — limited service range, coordination failures, and weak monitoring — that prevent the full utilisation of this vast infrastructure.

Taken together, the literature on e-governance demonstrates that while CSCs are powerful vehicles for inclusive governance, their impact is contingent upon local capacity, awareness, and institutional support. Technological efficiency must therefore be matched by social and administrative adaptability to ensure meaningful digital participation.

Infrastructure-Infrastructure is repeatedly identified as the cornerstone of successful e-governance implementation. Without adequate physical, digital, and institutional infrastructure, CSCs struggle to maintain sustainability and citizen trust. Ebad (2015) provides an extensive case study of Zoom Developers' effort to establish over 12,000 CSCs across eight Indian states, revealing formidable constraints such as security threats, difficult terrain, inaccessible panchayats, and irregular power supply. States such as Odisha, Chhattisgarh, and Assam face particular infrastructural fragility due to insurgency-related disruptions and poor road connectivity.

The role of connectivity emerges as a persistent concern. The dependence on BSNL's limited rural network, coupled with frequent power outages, has constrained operational hours and profitability. Weak infrastructure not only reduces citizen confidence but also discourages VLEs, who often invest their own capital into running CSCs. Dass and Bhattacharjee (2011) identify multiple impediments: insufficient internet bandwidth, poor institutional frameworks, limited G2C services, lack of awareness, and inadequate training. Their study highlights that CSCs financed through entrepreneurial investment models demonstrate higher sustainability compared to those dependent on external funding, reinforcing the role of local ownership in ensuring long-term viability. Jaju (2015), examining Meeseva Centres in Andhra Pradesh, evaluates service quality through indicators such as timeliness, responsiveness, and complaint handling. The findings point to systemic bottlenecks particularly power cuts, weak monitoring, and data entry errors that compromise citizen satisfaction.

Collectively, infrastructural studies underscore that CSC performance is highly sensitive to the quality of local infrastructure. Power stability, broadband reliability, and access to technical maintenance remain critical determinants of service quality and citizen experience.

Social Bottlenecks- Beyond technology and infrastructure, social factors exert a profound influence on CSC utilisation. These include literacy, language, gender norms, socio-economic status, and cultural attitudes towards technology. Nissar (2017), studying Kerala's Akshaya Centres, observes generally positive public perceptions regarding efficiency and accessibility but also reports limited procedural awareness and inadequate staff training. Such findings highlight the importance of digital literacy and citizen education in ensuring genuine inclusion. Dwivedi (2016) synthesises secondary data to identify enduring social barriers such as low computer literacy, weak awareness of services, bureaucratic corruption, and limited training infrastructure. Importantly, these obstacles intersect with socio-economic inequalities, indicating that technological diffusion alone cannot bridge deep-rooted divides. Kaur and Singh (2016) argue that for e-governance to be "SMART" Simple, Moral, Accountable, Responsive, and Transparent it must align technological interventions with citizen expectations and behavioural norms. They advocate hybrid governance models that combine centralised documentation with decentralised grievance redressal. Prasad and Ray (2012) offer insights from Meghalaya and Uttar Pradesh, where affordability, linguistic diversity, and connectivity gaps hinder access among marginalised groups. Their study underscores that the digital divide in India is not merely about physical access but about the distribution of digital capability and agency.

Social research on CSCs thus reveals that digital inclusion requires more than infrastructure; it demands active engagement with local social structures, awareness-building, and trust formation. Without these, CSCs risk reinforcing existing hierarchies rather than dismantling them.

State-Specific Studies- State-level analyses illuminate the diversity of CSC performance across India's regions. These variations stem from differences in infrastructure, governance, policy execution, and socio-economic conditions. Ghosh (2015) documents Tripura's relatively wide service portfolio covering utility payments, banking, ICT training, insurance, and Aadhaar enrolment but identifies shortages in skilled personnel and frequent power disruptions. Similarly, Das (2011) compares CSC operations in Jharkhand, Uttar Pradesh, and Meghalaya, observing common challenges such as limited G2C services, poor connectivity, and inadequate VLE motivation. UNESCO's (2006–2007) comparative review adds further nuance: Madhya Pradesh grapples with hardware shortages and maintenance gaps; West Bengal faces geographical disparities; and Andhra Pradesh reports coordination failures despite strong institutional frameworks. Malhotra and Krishnaswamy (2011), studying Haryana's E-Disha Kendras, highlight citizen dissatisfaction stemming from infrastructural lapses and limited engagement of marginalised populations.

These studies collectively affirm that CSC outcomes are highly contextual. Implementation success hinges upon the synergy between policy intent, infrastructural readiness, and local institutional capacity. The heterogeneity across states underscores the need for flexible, region-specific strategies rather than uniform national templates.

Conceptual Framework- Synthesising the above themes, this study conceptualises CSC performance as emerging from the interaction of three interrelated domains:

1. **Technological and Infrastructural Enablers:** These include physical connectivity, hardware availability, software reliability, and institutional frameworks that support service delivery.

2. **Service Quality and Operational Efficiency:** Indicators such as information accuracy, system usability, responsiveness, staff competence, and complaint handling determine citizens' satisfaction and trust.

3. **Socio-Economic and Cultural Factors:** Factors such as literacy, affordability, language, and social inclusion shape citizens' capacity and willingness to engage with digital governance.

The interconnections among these domains are cyclical: strong infrastructure enhances service quality; quality services increase citizen satisfaction; and satisfied citizens reinforce sustainability through continued usage. Conversely, social bottlenecks can disrupt this cycle, creating feedback loops of exclusion.

This multi-dimensional framework forms the analytical basis for assessing CSC effectiveness within diverse socio-technical contexts.

Theoretical Anchors

(a) **Digital Divide Theory-** Digital Divide Theory highlights inequalities in digital access and outcomes. It identifies three levels—access, skills, and benefits. Within CSCs, it explains why certain social groups or regions derive greater advantages from e-governance while others remain marginalised due to low literacy or affordability constraints.

(b) **Technology-Mediated Governance-** This perspective suggests that governance is increasingly shaped by digital intermediaries rather than direct bureaucratic contact. CSCs embody this transformation by becoming socio-technical interfaces where technology, governance, and human agency meet. They mediate state–citizen relations, shaping trust, accountability, and perceptions of the state.

(c) **Capability Approach-** Sen's Capability Approach shifts focus from access to meaningful use. Development is not simply about providing

infrastructure but enhancing the freedoms and capacities people can exercise through technology. In the CSC context, this approach foregrounds empowerment especially how digital inclusion can expand individuals' choices, opportunities, and participation in public life.

Together, these frameworks locate CSCs within a broader socio-technical and institutional context. They underline that equitable digital governance must address not only infrastructure but also human capability and social inclusion.

Narrative Discussion- The CSC model illustrates the complex realities of implementing digital governance in a deeply stratified society. While its design seeks inclusivity, its practice is mediated by the socio-economic hierarchies of rural India.

At one level, CSCs democratise access to state services. They reduce bureaucratic friction, save travel costs, and make governance visible and localised. Citizens can now obtain certificates, register for welfare schemes, and access digital financial services without navigating distant bureaucratic offices. This visibility of the state at the local level has contributed to an enhanced sense of participation among rural communities.

Yet, inclusion is uneven. The success of CSCs is contingent upon the VLE's digital proficiency, social networks, and entrepreneurial capacity. Where VLEs are socially privileged or better connected, CSCs thrive. In marginalised communities, however, exclusion persists. Many citizens continue to rely on intermediaries due to illiteracy or mistrust of technology, thereby reproducing older forms of dependency.

The gendered nature of digital access further complicates the narrative. Women's participation as VLEs remains low, and cultural norms often limit women's access to CSC services. Where women-led CSCs have emerged, evidence suggests greater responsiveness, safety, and community trust—underscoring the importance of inclusive representation.

The CSC ecosystem also faces structural bottlenecks—unstable internet connectivity, low revenue models, and inadequate policy coherence between central and state levels. VLEs frequently operate under precarious conditions, balancing administrative compliance with the financial risk of entrepreneurship. This tension reflects a deeper structural issue: the state's reliance on private entrepreneurship for public service delivery without providing adequate institutional safeguards.

Sociologically, CSCs can be viewed as microcosms of the digital state—spaces where power, technology, and agency interact. They embody the contradictions of digital modernity in India: empowerment through access, yet exclusion through unequal capability. They have redefined what it means to “interface” with the state, transforming governance into a transactional yet personalised experience.

Conclusion and Policy Implications

Conclusion

Common Service Centres have transformed the landscape of public service delivery in rural India by embedding governance within communities. They represent a bold institutional experiment in democratising access to digital resources. However, their potential remains partially realised. Infrastructural deficits, uneven governance mechanisms, and social inequalities continue to shape who benefits from digital inclusion. CSCs function both as instruments of empowerment and as mirrors of existing hierarchies. Their sustainability depends not merely on technological infrastructure but on strengthening human capacity, accountability, and institutional trust. The challenge ahead lies in balancing efficiency with equity ensuring that digital governance genuinely expands freedoms rather than reproducing exclusion in new digital forms.

Policy Implications

1.Strengthen Infrastructure

- oEnsure consistent electricity and broadband connectivity, particularly in remote regions.
- oExpand last-mile optical fibre networks under BharatNet.
- oProvide subsidised devices and technical support for VLEs.

2.Enhance Digital Literacy

- oInstitutionalise community-level digital training, especially targeting women and youth.
- oMandate periodic capacity-building workshops for VLEs.

3.Improve Accountability and Transparency

- oEstablish grievance redressal systems and public monitoring dashboards.
- oIntroduce performance-based audits linking incentives with service quality.

4.Promote Gender Inclusion

- oEncourage women-led CSCs and create safe, inclusive digital spaces.
- oProvide targeted financing and mentorship programmes for women VLEs.

5.Address Regional Disparities

- oImplement special packages for tribal and hilly regions.

- oStrengthen coordination between state and central agencies to reduce administrative fragmentation.

6.Ensure Economic Viability

- oRevise commission structures to guarantee fair remuneration.
- oOffer minimum financial support during service downtimes or disruptions.

7.Foster Participatory Governance

- oIntegrate CSCs into Panchayati Raj institutions to strengthen local accountability.
- oEncourage community participation in monitoring CSC performance.

Reference

- (n.d.). Retrieved from <https://akshaya.kerala.gov.in>.
- (n.d.). Retrieved from <http://india.gov.in>. (2023). A Shared Vision For Technology and Governance. UNDP.
- Apna CSC Online. (n.d.). Retrieved 12 20, 2023, from www.apnacsconline.in: <https://www.apnacsconline.in/services-provided-by-common-service-centers-cscs/>
- assam, g. o. (n.d.). Retrieved from <https://villageinfo.in/assam/kamrup-metropolitan.html>.
- Bagga, R. K., Keniston, K., & Mathur, R. R. (2005). The state IT and Development. Sage Publications India Pvt.Ltd.
- Bhatnagar, S. (2009). Unlocking e-government potential: Concepts, cases and practical insights. SAGE Publications.
- Blaikie, N. (2000). Designing Social Research: The logic of Anticipation. USA: Blackwell.
- Center, C. S. (2023, 06 27). common service center scheme. Retrieved 12 19, 2023, from <https://csc.gov.in/>: <https://csc.gov.in/>
- Choudhary, J., & Ghosh, R. (2015). E-governance and rural development: An assessment of CSCs in Tripura. IBMRD Journal of management and research, 18-29.
- Common. (n.d.). Common Service Centre (CSC). Retrieved 12 19, 2023, from csc.gov.in: <https://csc.gov.in/scheme> CSCs. (n.d.). Enabling services delivery-Bridging the digital gap.
- CSCs, G. o. (2011, July). Enabling Services Delivery-Bridging the digital gap.
- Das, R., & Bhattacharjee, A. (2011, February 03). Status of common service centre program in India: Issues, Challenges, and emerging practices for rollout. Ahmedabad, Gujarat, India.
- Das.Rajanish, B. A. (2011, February 03). Status of common service centre program in India: Issues, Challenges and emerging practices for rollout. Ahmedabad, Gujarat, India.
- Datta, K., & Saxena, A. (2013, May 1). Developing entrepreneurship and e-government in India: Role of common service centers. Journal of E-Governance, 36(2), 92-100.
- Dhamreja, A., & Medury, U. (2004, January-March). ICT Governance: The Socio-Economic Concerns. Indian Journal of Public Administration, 3(1).
- Dwivedi k, Y. (2016). Common service centers(CSCs)as an approach to bridge the digital divide: Reflecting on challenges and obstacles. Transforming government: people, process and policy, 511-525.
- Dwivedi, Y. K., Sahu, G. P., Rana, N. P., Singh, M., & Chandwani, R. (2016). Common Service Centers(CSCs) as an approach to bridge the digital divide: Reflecting on challenges and obstacles. Transforming Government: People, Process and Policy, 511-525.
- Ebad, R. (2015). Implementation of Common Service Centre Project in India: A Case Study of Zoom Developers Private Limited. International Journal of Business Research and Development, 25-32. government, a. (n.d.). Retrieved from assam.gov.in.
- Heeks, , R. (2003). Most e-government for development projects fail: How can. University of Manchester, Institute for Development Policy and Management.
- Heeks, R. (2001, February 18). Understanding e-Governance for Development. Manchester: Institute for Development Policy and Management. doi:<https://dx.doi.org/10.2139/ssrn.3540058> <https://www.csc.gov.in>. (n.d.).
- india, G. o. (2011, July). Enabling Services Delivery- Bridging the digital gap.
- Jaju, R. Y. (n.d.). Assessing the quality of e-enabled delivery of public services: A case study of Meesewa. Journal of Economics, Business and Management.
- Kaur, R., & Singh, R. (2016). Role of e-governance in delivery of public services: a case study of Chandigarh Sampark centers. Chandigarh, India: Shodhganga.
- Lokhande, M. A. (2004, December). E-governance in India. Yojana.
- Malhotra, C., & Krishnaswamy, G. (2011). Citizens' expectations from rural telecentres: A case study of implementation of Common Service Centres in Mushdepur village, Haryana. International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering, 455-461.
- Matin, A. (2004). Research Methods, Statistics, IT, and e-Methods. New delhi: Icon publication.
- Milakovi, M. E. (2012). Digital governance. New York: Routledge.
- Ministry of Cooperation, G.o. (n.d.). Retrieved 12 21, 2023, from <https://www.cooperation.gov.in/>: <https://www.cooperation.gov.in/pacs-function-common-service-centres-csc>
- Naik Gopal and Joshi, S. a. (2010, december 28). Market creation and poverty alleviation through telecenters. Bangalore, Karnataka, India.
- Nissar P. (2017). An assessment of common service centers under the National e-Governance Plan with special reference to Akshaya centers in Kerala. kerala, University of Calicut.
- Prasad, R., & Ray, R. S. (2012, February 11). Critique of the Common Service Centre scheme. Economic & Political Weekly, pp. 18-23.
- Rajeev, M., & Bhandarkar, S. (2022, May 29). Women online: A study of Common Service Centres in India using a capability approach. Asia & The Pacific Policy Studies. doi:DOI: 10.1002/app5.360
- Rao, N. B. (2013). Good governance: Delivering corruption-free public services. New Delhi: Sage Publications India Pvt Ltd.
- Sharma, S. K., Metri, B., Diwedi, Y. K., & Rana, N. P. (2021). Challenges common service centers (CSCs) face in delivering e-government services in rural India. Government Information Quarterly 38(2).
- Shewale, B. Y., & Laturkar, V. N. (2019, 5 24). Impact of Maha e Sewa in Maharashtra: A study with reference to Nanded District. Retrieved 05 17, 2023, from <http://hdl.handle.net/10603/266083>
- Technology, M. o. (n.d.). Retrieved 12 20, 2023, from <https://www.meity.gov.in/content/common-services-centers>
- UNDP. (2023). A Shared Vision For Technology And Governance.
- UNESCO. (2006-2007). COMPARATIVE STUDY OF CSCs and CMCs.
- Uthaman .S Vijaya, V. (2017). A comprehensive multidimensional conceptual model to assess the e-governance service quality at common service centers in India. ICEGOV'17:Proceedings of the Special Collection on eGovernment Innovations in India (pp. 99-106). New york, United states: Association for computing machinery.
- Vasantha, S., & Bhuvana, M. (2020). Assessment of rural citizens' satisfaction with the service quality of Common Service Centers (CSCs) of E-Governance. Journal of Critical Review. www.digitalindia.gov.in. (n.d.).
- Yadav, B. S., Pandey, A. C., & Raza, S. K. (2010). Implementation of IT-based services in rural India. Journal of High Performance Computing, 6-11.