

From Margins to Mainstream: The Role of E-Governance Initiatives in Advancing Economic Empowerment of Scheduled Caste Women in Andhra Pradesh

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Abstract:

The intersection of digital governance and social equity has emerged as a critical arena for policymakers committed to inclusive development in India. This paper examines the role of e-governance initiatives in advancing the economic empowerment of Scheduled Caste (SC) women in Andhra Pradesh, a state that has undertaken significant digital public infrastructure reforms since 2014. Drawing on secondary data from government reports, NSSO surveys, DISHA monitoring databases, and peer-reviewed literature, the study maps the landscape of flagship e-governance schemes — including MeeSeva, Direct Benefit Transfer (DBT) platforms, the AP Fiber Grid, and Village Secretariat Systems — and evaluates their differential impact on SC women's access to economic entitlements, SHG credit linkages, and livelihood opportunities. The analysis reveals that while digital service delivery has measurably improved in Andhra Pradesh, structural barriers including digital illiteracy, language interface gaps, caste-based social restrictions, and last-mile connectivity deficits continue to limit equitable access for SC women, particularly in rural districts. The paper argues that transformative outcomes require moving beyond technocentric solutions to embed gender-sensitive, caste-aware design principles within e-governance architecture. Policy recommendations are offered for deepening inclusion through targeted digital literacy, local language interfaces, and accountable grievance redressal mechanisms.

Keywords: e-governance, Scheduled Caste women, economic empowerment, Andhra Pradesh, digital inclusion, direct benefit transfer, social equity, digital literacy, MeeSeva, village secretariat.

1. Introduction

The emergence of digital governance as a transformative instrument of public administration has introduced unprecedented possibilities for redressing historical inequalities embedded within Indian society (Rao, M. K. P. 2018). In a nation where caste and gender have long operated as compounding axes of marginalization, the promise of e-governance to bridge the gap between state services and excluded communities carries significant policy significance. Scheduled Caste (SC) women, occupying the most vulnerable position within the interlocking hierarchies of caste, class, and gender, represent a constituency whose access to economic resources, institutional credit, and government entitlements has historically been mediated by structural discrimination, geographical remoteness, and bureaucratic gatekeeping.

Andhra Pradesh, one of India's more digitally progressive southern states, presents a compelling case study. Since the bifurcation of the undivided state in 2014 and the subsequent acceleration of technology-driven governance reforms under successive administrations, the state has deployed an ambitious portfolio of e-governance platforms — from the legacy MeeSeva citizen service centres to the more recent Village Secretariat System and Jagananna welfare delivery portals. These initiatives collectively constitute a digital public infrastructure intended to disintermediate traditional bureaucratic channels, reduce leakage in welfare delivery, and bring state services to the doorstep of the marginalized.

Yet the transformative potential of these platforms cannot be assessed in isolation from the social structures within which they are embedded. SC women in Andhra Pradesh face layered disadvantages: literacy deficits, restricted mobility enforced by patriarchal and caste norms, limited smartphone and internet access, and low awareness of digital entitlements. The question this paper foregrounds is not merely whether e-governance has expanded the reach of the state, but whether it has done so equitably — and specifically whether it has advanced the economic empowerment of those who stand furthest from mainstream development pathways.

This paper is organized as follows. Section 2 presents a review of the relevant scholarly literature on e-governance, gender, and caste-based exclusion. Section 3 maps the principal e-governance initiatives operative in Andhra Pradesh with relevance to SC women's economic empowerment. Section 4 presents empirical data on economic outcomes and digital access trends. Section 5 analyses structural barriers to equitable e-governance access. Section 6 offers a discussion and policy recommendations, and Section 7 concludes.

2. Literature Review

2.1 E-Governance and Social Inclusion: Theoretical Perspectives

The scholarly literature on e-governance and inclusion has evolved substantially since the early optimism of digital government proponents in the late 1990s. Initial theoretical frameworks emphasized efficiency gains and transparency enhancement as the primary dividends of digital public administration (Heeks, 2001; UNDP, 2001). However, subsequent scholarship introduced a more critical lens, examining whether and how e-governance exacerbates pre-existing digital divides rather than bridging them (Warschauer, 2003; Norris, 2001).

In the Indian context, scholars have drawn attention to the structural reproduction of inequalities through ostensibly neutral digital platforms. Gurusamy and Chami (2014) demonstrated that women's access to e-governance portals in South India remained structurally constrained by male gatekeeping, low digital literacy, and patriarchal household dynamics. Raman (2012) examined the NeGP (National e-Governance Plan) and found that while rural citizen service centres improved efficiency for male users, SC and ST women remained disproportionately excluded from the benefits. More recently, Bhopal (2020) has situated digital exclusion within broader debates on intersectionality, noting that caste, class, and gender interact to produce compounding exclusions that uniform digital service delivery cannot address.

The concept of 'digital empowerment' has also gained traction as an analytical frame. Unwin (2009) distinguishes between digital access, which connotes mere availability of technology, and digital empowerment, which requires the capacity, agency, and structural freedom to leverage technology for self-determined outcomes. This distinction is particularly salient for SC women, for whom physical access to a MeeSeva terminal or a Village Secretariat tablet does not automatically translate into effective utilization of available services.

2.2 Caste, Gender, and Economic Exclusion in India

Scheduled Caste women occupy a distinctive and acutely disadvantaged position in India's social and economic landscape. As Thorat and Newman (2010) document comprehensively, SC communities face discrimination not only in labour markets but also in credit markets, land ownership, and access to public goods — discrimination that persists even when controlling for class and education. For SC women, this caste-based exclusion intersects with gender discrimination to produce a double bind that constrains economic agency at multiple levels (Deshpande, 2011 & Rao, M. S. R., 2018).

In Andhra Pradesh specifically, studies by the Andhra Pradesh State Planning Board (2017) and the International Institute for Population Sciences (IIPS, 2021) have documented wide disparities between SC women and women of other social groups across indicators including workforce participation, access to institutional credit, land rights, and school enrollment of daughters. The persistence of these disparities despite decades of affirmative action and welfare spending has prompted a growing body of literature on the design failures of state programmes — including their tendency to presuppose infrastructural, social, and informational preconditions that marginalized communities often lack (Dreze & Sen, 2013).

2.3 E-Governance and Economic Empowerment: Emerging Evidence

A growing empirical literature has begun to examine the specific linkages between e-governance and economic empowerment among marginalized women. Agarwal and Bhatt (2019) found that DBT-linked welfare payments through Aadhaar-authenticated Jan Dhan accounts improved women's financial autonomy in Rajasthan and Andhra Pradesh, particularly when women controlled their own bank accounts. Mukherjee and Bhattacharya (2021) demonstrated that online NREGA payment systems reduced wage theft and discrimination faced by Dalit women workers in southern states.

At the same time, critical scholarship cautions against technological determinism. Arun et al. (2018) argue that digital platforms for rural credit and SHG linkages in Andhra Pradesh have reinforced existing social hierarchies when digital access and financial literacy training has not accompanied them. The literature broadly converges on the view that e-governance's empowerment dividend for SC women is contingent on complementary investments in digital literacy, local language interfaces, gender-sensitive grievance mechanisms, and the dismantling of social barriers that restrict women's public participation (Kabeer, 2010; Chib, 2013).

3. E-Governance Landscape in Andhra Pradesh: Initiatives Relevant to SC Women

3.1 MeeSeva and Service Delivery Modernisation

Andhra Pradesh's MeeSeva platform, launched in 2012 as a successor to the earlier e-Seva initiative, represented the state's most comprehensive attempt to consolidate citizen service delivery through a network of digital kiosks. By 2024, the platform offered access to over 400 government services through more than 12,000 centres across the state, including caste and income certificates critical for SC women's access to reservations and welfare benefits (Government of Andhra Pradesh [GoAP], 2023). The elimination of intermediary touts and the reduction in documentation cycles have benefited SC women in urban areas, though rural access remains uneven.

The platform's Telugu-language interface and biometric authentication through Aadhaar have reduced entry barriers for first-time users. However, research by the Centre for Internet and Society (CIS, 2022) has noted that biometric authentication failures disproportionately affect manual labourers, including SC women agricultural workers, whose fingerprints are often degraded by physical labour — a form of infrastructural exclusion embedded within ostensibly neutral technology.

3.2 Direct Benefit Transfer and Financial Inclusion

The rollout of Direct Benefit Transfer (DBT) mechanisms, linking Aadhaar with Jan Dhan bank accounts and mobile numbers (the JAM trinity), has been one of the most significant developments in e-governance for SC women's economic empowerment in Andhra Pradesh. Welfare transfers under programmes including Rythu Bharosa (agricultural input support), Jagananna Amma Vodi (education support for mothers), and YSR Pension Kanuka (social security pensions) are channelled directly to beneficiaries' bank accounts, bypassing traditional intermediary structures that historically siphoned resources from SC women (Ministry of Finance, GoI, 2023).

The Pradhan Mantri Jan Dhan Yojana (PMJDY) achieved near-universal bank account coverage among SC women in Andhra Pradesh by 2022, with 91.2% of SC women in the state holding functional bank accounts according to NABARD's All India Rural Financial Inclusion Survey (NABARD, 2022). This has been foundational to DBT effectiveness. However, account dormancy rates — estimated at 22% among rural SC women — continue to diminish the real-world empowerment impact of direct transfers (Reserve Bank of India [RBI], 2023).

3.3 Village Secretariat System and Last-Mile Governance

The Village and Ward Secretariat System, introduced by the YSRCP government in 2019, represents a structural innovation in last-mile service delivery. By deploying digitally trained Village/Ward Secretariat staff — including Mahila Police volunteers and Ward Welfare and Development Secretaries — within walking distance of every habitation, the initiative sought to eliminate the access barriers facing SC women in remote areas (GoAP, 2020). By 2023, over 15,000 village secretariats were operational, achieving a 99.2% grievance resolution rate for registered complaints according to official monitoring data.

Critically, the system employs SCs and BCs as secretariat staff in reserved categories, creating livelihood opportunities within the governance apparatus itself. For SC women, the Village Secretariat has served as both a service delivery point and an employment pathway — dual contributions to economic empowerment that have not been fully captured in existing assessments of the initiative (APCSS, 2022).

3.4 Digital Connectivity: AP Fiber Grid and CSCs

The Andhra Pradesh Fiber Grid (APFG), which aimed to connect all gram panchayats with high-speed broadband connectivity, provided the foundational infrastructure on which many e-governance services depend. Although the APFG project experienced implementation delays and partial reconfiguration under successive administrations, the state's overall rural internet penetration rose from an estimated 14.2% in 2015 to 44.8% in 2023, driven also by increased smartphone adoption and private telecom investment (TRAI, 2023). For SC women, this expanding connectivity environment has created new opportunities for accessing welfare portals and SHG digital banking services.

4. Empirical Findings

4.1 Comparative Access Profile of SC Women

Table 1 situates the condition of SC women in Andhra Pradesh within a comparative southern Indian context, drawing on the National Family Health Survey-5 (NFHS-5, 2019–21) and the NSSO 76th Round (2019) data, supplemented by state-level administrative records.

Table 1- Comparative Profile of SC Women: Digital Access and Poverty Indicators, Southern States (2021–22)

State/Category	SC Women Below Poverty Line (%)	Access to Digital Services (%)	Awareness of Govt. Schemes (%)
Andhra Pradesh (SC Women)	38.4	29.7	41.2
Telangana (SC Women)	35.1	31.4	43.8
Tamil Nadu (SC Women)	28.6	44.2	61.3
Karnataka (SC Women)	31.2	38.9	55.7
National Average (SC Women)	41.8	26.3	37.6

Note. Data compiled from NFHS-5 (Ministry of Health and Family Welfare, 2021), NSSO 76th Round (Ministry of Statistics and Programme Implementation [MoSPI], 2019), and GoAP DISHA Dashboard (2022).

As Table 1 illustrates, Andhra Pradesh's SC women trail Tamil Nadu and Karnataka on both digital access and government scheme awareness, while remaining above the national SC women average on the latter indicator. This positions Andhra Pradesh in an intermediate position: better-performing than the national baseline but with substantial room for improvement relative to southern state peers.

4.2 E-Governance Initiatives and Reach

Table 2 provides a programme-level overview of key e-governance initiatives in Andhra Pradesh, their coverage of SC women beneficiaries, and key outcome metrics, drawn from government monitoring reports and independent evaluations.

Table 2- Key E-Governance Initiatives in Andhra Pradesh: SC Women Beneficiaries and Outcomes (2022–23)

E-Governance Initiative	Launch Year	Districts Covered (AP)	SC Women Beneficiaries (Lakhs)	Outcome Metric
AP e-Seva / MeeSeva	2002 / 2012	13	8.42	88% service satisfaction
DBT through PFMS	2013	13	12.64	₹4,210 Cr. transferred
AP Fiber Grid (APFG)	2015	13	6.18	31.4% digital access rise
NREGA Online Payments	2008	13	15.37	₹2,890 Cr. wages paid
Jagananna Amma Vodi (DBT)	2020	13	9.83	₹15,000/yr per beneficiary

E-Governance Initiative	Launch Year	Districts Covered (AP)	SC Women Beneficiaries (Lakhs)	Outcome Metric
YSRCP Village Secretariat System	2019	13	18.24	99.2% grievance resolution

Note. Data sourced from GoAP (2023), Ministry of Rural Development PFMS Dashboard (2023), National Informatics Centre (NIC) Annual Report (2022), and NREGA Social Audit Reports, Andhra Pradesh (2023).

Table 2 reveals that the Village Secretariat System has achieved the widest reach among SC women in the state, followed by NREGA digital payment integration. The DBT through PFMS platform represents the largest financial outflow to SC women beneficiaries, amounting to ₹4,210 crore in 2022–23 — a figure that underscores the macroeconomic significance of e-governance for this population.

4.3 Economic Empowerment Trends Among SC Women

Table 3 traces longitudinal trends in economic empowerment indicators among SC women in Andhra Pradesh across the period 2015–16 to 2023–24, drawing on NABARD, NRLM, and state-level administrative data.

Table 3- Economic Empowerment Indicators for SC Women in Andhra Pradesh: Longitudinal Trends (2015–2024)

Economic Indicator	2015–16	2018–19	2021–22	2023–24 (Est.)
SC Women Self-Help Group Membership (Lakhs)	18.4	24.7	31.2	38.6
Annual Credit Linkage (₹ Crore)	1,240	2,680	4,310	6,740
SC Women Micro-Enterprise Units (Thousands)	42.3	67.8	98.4	141.2
Average Annual Income Growth (%)	4.2	6.8	9.1	11.4
Bank Account Ownership (%)	48.3	67.4	81.9	91.2
NREGA Job Card Utilisation (%)	54.7	68.2	79.4	87.6

Note. SHG data from National Rural Livelihoods Mission (NRLM) State Reports, Andhra Pradesh (2016–2024); credit linkage data from NABARD State Focus Papers (2016–2024); income growth estimates from NSSO 76th and 78th Rounds (MoSPI, 2019, 2023); bank account data from PMJDY State Reports (Ministry of Finance, GoI, 2016–2024).

The longitudinal data in Table 3 points to a consistent upward trajectory across all economic empowerment indicators. SHG membership among SC women more than doubled over the period, annual credit linkages grew by over five-fold, and bank account ownership approached near-universality by 2023–24. Average annual income growth among SC women accelerated from 4.2% in the pre-digitisation baseline to an estimated 11.4% by 2023–24. While it is not possible to attribute causality solely to e-governance without

a rigorous counterfactual design, the alignment of these trends with the rollout of DBT, digital SHG banking, and Village Secretariat services provides suggestive evidence of a positive association.

5. Structural Barriers to Equitable E-Governance Access

5.1 Digital Illiteracy and the Skilling Gap

Digital illiteracy remains the most pervasive barrier to SC women's effective utilization of e-governance platforms in Andhra Pradesh. NSSO data indicate that 74.3% of rural SC women in the state have never independently used a computer or smartphone for any official purpose (MoSPI, 2023). This is not merely a technical incapacity but reflects the cumulative effect of educational deprivation, limited occupational exposure to digital tools, and a lack of targeted skilling programmes that reach SC women in their habitations.

The government's Digital Sakhi programme and PM-WANI Wi-Fi hotspot initiative have partially addressed this gap, but evaluations by the National Institute of Rural Development and Panchayati Raj (NIRDPR, 2022) indicate that SC women's participation in digital literacy programmes remains below 20% of eligible women — constrained by competing demands on time, restricted mobility, and social norms that limit women's engagement with technology in public spaces.

5.2 Connectivity and Device Access Deficit

While Andhra Pradesh's rural internet penetration has improved significantly over the decade, the quality and affordability of last-mile connectivity for SC women remain problematic. Research by the Broadband India Forum (2022) found that 68.9% of rural SC women in Andhra Pradesh lack personal smartphone access, relying instead on shared family devices controlled predominantly by male household members. This shared access model critically limits women's ability to access welfare portals independently, receive DBT notifications, or engage with digital financial services without mediation.

The last-mile connectivity deficit is particularly pronounced in the northern districts of Andhra Pradesh — Srikakulam, Vizianagaram, and parts of Alluri Sitharama Raju — where both infrastructure quality and SC women's economic indicators lag behind coastal and southern districts (GoAP Planning Department, 2023).

5.3 Language, Interface Design, and Cognitive Barriers

Interface design represents a frequently overlooked dimension of digital exclusion. While MeeSeva and Village Secretariat portals offer Telugu-language interfaces, the linguistic and literacy demands of navigating complex welfare portal menus remain beyond the capacity of many first-generation literate SC women. Research by the Digital Empowerment Foundation (DEF, 2021) found that 61.4% of rural SC women in Andhra Pradesh experienced significant difficulties navigating digital government portals independently, citing both language complexity and confusing interface design.

Voice-based interfaces and simplified visual navigation pathways, advocated by the National Digital Literacy Mission, remain under-implemented in Andhra Pradesh's public service delivery infrastructure. The absence of local dialect adaptations — important in a linguistically diverse state — further compounds exclusion for SC women from remote areas where standard Telugu may not be their primary spoken language.

5.4 Caste-Based Social Restrictions

Social restrictions rooted in caste hierarchy continue to shape SC women's physical access to public service delivery infrastructure. In several districts of Andhra Pradesh, MeeSeva centres, CSCs, and even

Village Secretariat buildings are located in dominant caste localities where SC women report social discomfort and, in some cases, explicit refusal of service (Human Rights Watch, 2020; National Dalit Movement for Justice, 2021). These experiences of social exclusion within ostensibly inclusive digital public spaces represent a form of structural violence that technical governance reforms alone cannot address.

A study by the Institute of Development and Communication (IDC, 2022) found that 55.8% of rural SC women surveyed in Andhra Pradesh had experienced or feared discrimination at Common Service Centres, leading them to forgo utilization of services to which they were entitled. This 'entitlement gap' — the distance between formal eligibility and effective access — has not been adequately incorporated into official programme evaluations.

Table 4

Barriers to E-Governance Access Among SC Women in Andhra Pradesh (2022–23 Survey Data)

Barrier	% Respondents Affected (Rural SC Women)	% Respondents Affected (Urban SC Women)	Policy Gap Identified
Digital Illiteracy	74.3	41.6	Low ICT skilling coverage
Lack of Smartphones / Internet	68.9	28.4	Affordable access deficit
Language & Interface Barriers	61.4	32.7	Telugu localisation gaps
Caste-based Social Restrictions	55.8	22.3	Social norm intervention absent
Absent Grievance Redressal	48.2	19.6	Accountability mechanism weak
Distance to Service Centres	82.1	11.4	Last-mile delivery deficit

Note. Data compiled from NIRDPR Evaluation Reports (2022), DEF Rural ICT Survey (2021), Broadband India Forum (2022), and IDC (2022). Figures represent percentages from respective primary survey samples across Andhra Pradesh districts.

6. Discussion and Policy Recommendations

6.1 Towards a Caste-Gender Sensitive E-Governance Framework

The evidence reviewed in this paper yields a nuanced picture. On aggregate measures, e-governance has demonstrably contributed to improving SC women's access to economic entitlements in Andhra Pradesh: DBT platforms have reduced leakage, Village Secretariat systems have improved grievance resolution, and SHG digitisation has expanded credit access. The longitudinal data in Table 3 captures a real and meaningful upward economic trajectory.

At the same time, the pattern of gains is deeply uneven — concentrated among SC women who are literate, urban, connected, and possessed of male family support for digital platform navigation. The structural barriers identified in Section 5 function as an invisible tax on the least advantaged, ensuring that e-governance's benefits accrue disproportionately to those already better positioned within the SC women population. This dynamic reflects what Doshi et al. (2020) term 'inclusion within exclusion' — partial improvements in access that co-exist with the reproduction of hierarchy.

Transforming e-governance from an instrument of partial inclusion to one of genuine empowerment for SC women requires policy interventions at multiple levels: infrastructure, institutional design, social norm change, and political accountability.

6.2 Digital Literacy and Skilling: Targeted and Habitation-Level Outreach

Existing digital literacy programmes must be restructured to achieve saturation coverage among SC women, with instruction delivered in habitations rather than requiring women to travel to block or district-level centres. The Digital Sakhi model, where trained women digital navigators serve their own communities, offers a scalable template that could be institutionalised within the Village Secretariat framework, creating livelihood opportunities for SC women alongside digital empowerment functions (NIRDPR, 2022).

Content design should move beyond generic digital literacy to encompass platform-specific training for welfare portals, DBT monitoring, NREGA wage tracking, and SHG digital banking — the specific digital functions most consequential for SC women's economic lives. Partnerships with SHG federations under SERP (Society for Elimination of Rural Poverty) offer ready-made institutional channels for such training.

6.3 Interface Redesign and Language Localisation

State government portals and Village Secretariat digital interfaces should be subject to a mandatory Gender and Caste Inclusivity Audit, assessing readability at Class V literacy levels, voice navigation availability, and visual simplicity. Localisation should extend beyond standard Telugu to encompass the dialectal variations spoken by SC communities in districts such as Srikakulam and Vizianagaram (Bhupati, 2021). The success of voice-based interfaces in Maharashtra's agricultural extension services offers a transferable model for Andhra Pradesh's welfare delivery context.

6.4 Caste Discrimination Redressal in Digital Service Spaces

The persistence of caste discrimination within e-governance service centres demands explicit institutional responses. Mandatory Scheduled Caste-Scheduled Tribe (SCs/STs) sensitivity training for all Common Service Centre operators and Village Secretariat staff, combined with anonymous complaint mechanisms accessible via SMS or voice call, would strengthen accountability. State-level Social Audit processes for e-governance programmes — already embedded in NREGA and MGNREGS implementation — should be extended to MeeSeva, DBT platforms, and Village Secretariat services, with disaggregated findings reported publicly by caste and gender (Dreze & Khera, 2017).

6.5 Strengthening the DBT Ecosystem for SC Women

Account dormancy among SC women beneficiaries represents a significant efficiency loss in the DBT ecosystem. Banking Correspondent networks should be expanded in SC habitations with dedicated female BCs, drawing from SHG leadership pools. Proactive SMS and IVR notifications in Telugu about credit events in DBT accounts would reduce the information asymmetry that contributes to dormancy. The convergence of PMJDY account data with NRLM SHG credit records would enable targeted follow-up for accounts that have not transacted within 90 days — a data integration exercise feasible within the AP state data repository architecture (NITI Aayog, 2023).

7. Conclusion

This paper has examined the evolving relationship between e-governance initiatives and the economic empowerment of Scheduled Caste women in Andhra Pradesh. The evidence establishes a clear, if uneven,

contribution of digital public infrastructure to improving SC women's access to welfare entitlements, financial services, and livelihood opportunities over the decade 2015–2025. Flagship initiatives — MeeSeva, DBT platforms, the Village Secretariat System, and NREGA digital payment integration — have collectively extended the formal reach of the state to a constituency historically excluded from its benefits.

Yet the paper's central argument is that reach is not the same as empowerment. The structural barriers of digital illiteracy, connectivity deficit, caste discrimination, and interface inaccessibility function as filters that sieve the benefits of e-governance away from those who need them most. Without deliberate, caste- and gender-aware design principles embedded within governance technology, the promise of digital inclusion risks becoming an alibi for structural inaction.

The policy recommendations offered in this paper — habitation-level digital literacy, voice-based localised interfaces, social audit extension to e-governance services, and Banking Correspondent expansion — are not technically complex. They require political will, institutional coordination, and a commitment to measuring empowerment rather than mere access. For Andhra Pradesh, which has invested substantially in digital governance infrastructure, the marginal investment required to make this infrastructure genuinely inclusive for SC women is modest relative to the transformative potential it holds. The movement from margins to mainstream for Scheduled Caste women in Andhra Pradesh will not be achieved by digital technology alone. But in a state with significant digital public infrastructure and a robust SHG movement, e-governance — if consciously redesigned for inclusion — can serve as a powerful accelerant for the economic empowerment of India's most marginalised women. The scholarly and policy imperative is to ensure that this potential is realised not for the few who are already closest to the mainstream, but for the many who still stand at the furthest margins.

REFERENCES:

1. Agarwal, P., & Bhatt, S. (2019). Direct benefit transfers and women's financial autonomy: Evidence from rural India. *Journal of Development Economics*, 141, 102–118. <https://doi.org/10.1016/j.jdeveco.2019.04.003>
2. Andhra Pradesh Centre for Strategic Studies (APCSS). (2022). Assessment of Village and Ward Secretariat System: Impact on marginalised communities. APCSS Publication Unit.
3. Andhra Pradesh State Planning Board. (2017). Status of Scheduled Castes in Andhra Pradesh: A report. Government of Andhra Pradesh.
4. Arun, S., Arun, T., & Borooah, V. K. (2018). Digital self-help groups and livelihoods: Examining inclusion in Andhra Pradesh. *Information Technology for Development*, 24(3), 515–534. <https://doi.org/10.1080/02681102.2017.1361289>
5. Bhopal, K. (2020). Race, gender and digital exclusion: Understanding intersectionality in governance. *British Journal of Sociology*, 71(1), 107–126. <https://doi.org/10.1111/1468-4446.12715>
6. Bhupati, A. (2021). Dialect diversity and digital governance: Challenges of localisation in Andhra Pradesh. *Economic and Political Weekly*, 56(38), 42–49.
7. Broadband India Forum. (2022). Digital access and gender: A survey of rural women's connectivity in South India. BIF Research Papers.
8. Centre for Internet and Society (CIS). (2022). Biometric exclusion and the welfare state: Aadhaar failure analysis in Andhra Pradesh. CIS Working Paper.
9. Chib, A. (2013). The promise and peril of mHealth for development. *Mobile Media & Communication*, 1(1), 69–75. <https://doi.org/10.1177/2050157912459502>

10. Deshpande, A. (2011). The grammar of caste: Economic discrimination in contemporary India. Oxford University Press.
11. Digital Empowerment Foundation (DEF). (2021). Women and digital governance in rural South India: A field survey. DEF Research Division.
12. Doshi, V., Sharma, R., & Bhatt, A. (2020). Inclusion within exclusion: Dalit women and welfare digitisation in India. *Development and Change*, 51(5), 1312–1337.
<https://doi.org/10.1111/dech.12573>
13. Dreze, J., & Khera, R. (2017). Recent social security initiatives in India. *World Development*, 98, 555–572. <https://doi.org/10.1016/j.worlddev.2017.05.035>
14. Dreze, J., & Sen, A. (2013). An uncertain glory: India and its contradictions. Princeton University Press.
15. Government of Andhra Pradesh (GoAP). (2020). Village secretariat system: Implementation guidelines and monitoring framework. GoAP Department of Panchayati Raj.
16. Government of Andhra Pradesh (GoAP). (2023). MeeSeva annual report 2022–23. GoAP Department of Information Technology and Electronics.
17. Government of Andhra Pradesh Planning Department. (2023). District Human Development Report: Northern Andhra Pradesh. GoAP.
18. Government of India, Ministry of Finance. (2023). Direct benefit transfer annual report 2022–23. DBT Mission, Cabinet Secretariat.
19. Gurumurthy, A., & Chami, N. (2014). From women's rights to women's empowerment: Feminist perspectives on ICT policy. *Information Technologies & International Development*, 10(3), 1–14.
20. Heeks, R. (2001). Understanding e-governance for development. Institute for Development Policy and Management Working Paper No. 11. University of Manchester.
21. Human Rights Watch. (2020). Stifled voices: Caste discrimination in Andhra Pradesh's public services. Human Rights Watch Report.
22. Institute of Development and Communication (IDC). (2022). Caste and digital access: A study of SC women's experiences with CSCs in Andhra Pradesh. IDC.
23. International Institute for Population Sciences (IIPS). (2021). National Family Health Survey (NFHS-5), 2019–21: Andhra Pradesh state fact sheet. Ministry of Health and Family Welfare, GoI.
24. Kabeer, N. (2010). Women's empowerment, development interventions, and the management of information flows. *IDS Bulletin*, 30(2), 26–39. <https://doi.org/10.1111/j.1759-5436.1999.mp30002004.x>
25. Ministry of Statistics and Programme Implementation (MoSPI). (2019). NSS 76th round: Household social consumption — Education. Government of India.
26. Ministry of Statistics and Programme Implementation (MoSPI). (2023). NSS 78th round: Household digital access and consumption. Government of India.
27. Mukherjee, A., & Bhattacharya, M. (2021). Digital wage payments and Dalit women workers: Evidence from MGNREGS in southern India. *Journal of Agrarian Change*, 21(4), 742–759.
<https://doi.org/10.1111/joac.12432>
28. NABARD. (2022). All India rural financial inclusion survey 2021–22: Andhra Pradesh state report. National Bank for Agriculture and Rural Development.
29. National Dalit Movement for Justice (NDMJ). (2021). Access denied: Caste discrimination in digital public service delivery. NDMJ Research Unit.

30. National Institute of Rural Development and Panchayati Raj (NIRDPR). (2022). Evaluation of digital literacy programmes for rural women: A multi-state study. NIRDPR.
31. National Rural Livelihoods Mission (NRLM). (2024). NRLM state focus report, Andhra Pradesh, 2023–24. Ministry of Rural Development, GoI.
32. NITI Aayog. (2023). Data governance and the welfare state: A roadmap for integrated delivery. NITI Aayog Working Paper.
33. Norris, P. (2001). Digital divide: Civic engagement, information poverty, and the Internet worldwide. Cambridge University Press.
34. Raman, N. (2012). Digitalising the grassroots? Evaluating NeGP and its implications for rural citizens. *Economic and Political Weekly*, 47(18), 59–66.
35. Rao, M. K. P. (2018). A study on e-governance in India: problems, and prospectus. *International Journal of Management, IT and Engineering*, 8(6), 270-289
36. Rao, M. S. R. (2018). A study on rural women empowerment in India: through the eyes of entrepreneurship and skill development. *International Journal of Research in Social Sciences*, 8(3), 500-515.
37. Reserve Bank of India (RBI). (2023). Report on trend and progress of banking in India, 2022–23. RBI Publications.
38. Telecom Regulatory Authority of India (TRAI). (2023). Telecom subscription data: As of December 2023. TRAI.
39. Thorat, S., & Newman, K. S. (Eds.). (2010). Blocked by caste: Economic discrimination in modern India. Oxford University Press.
40. Unwin, T. (2009). ICT4D: Information and communication technology for development. Cambridge University Press.
41. Warschauer, M. (2003). Technology and social inclusion: Rethinking the digital divide. MIT Press.