



"From Access to Impact: An Empirical Study of E-Governance Effectiveness in Andhra Pradesh"

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Abstract

The rapid proliferation of information and communication technologies (ICTs) across India has created unprecedented opportunities for transforming public service delivery. Andhra Pradesh, among India's most digitally progressive states, has undertaken ambitious e-governance initiatives including the Meeseva platform, AP Fibernet, e-Pragati integrated governance framework, and the Gramasachivalayam Ward Volunteer System (GSWS). This study is empirical, based on primary survey data on the level of e-governance adoption and its effect on administrative efficiency and citizen-centric service delivery in six districts of Andhra Pradesh, which includes 420 respondents. The study relies on structured questionnaires, key informant interviews, and secondary administrative data to evaluate various factors, including access to services, turnaround times, satisfaction of citizens, corruption, and digital inclusion. The findings reveal that a lot of the opportunities for rent-seeking within the bureaucracy have not been taken away by the e-governance platforms, but there are some differences between the rural and urban areas and between different socio-economic classes. The study found that the major bottlenecks to the widespread use of e-governance at the national level are the absence of digital literacy, lack of last-mile connectivity, and the complexity of procedures. Specific steps in the direction of digital skilling, investment in infrastructure in underserved mandals, and institutionalised grievance redressal mechanisms are suggested as steps to build on the achievements of Andhra Pradesh in e-governance.

Keywords: e-governance, Andhra Pradesh, Meeseva, administration efficiency, citizen-centric service delivery, digital governance, public administration, ICT adoption, and e-Pragati, Gramasachivalayam.

1. Introduction

In recent decades, the possibilities of digital technologies to transform the relationship between the state and its citizens have strongly influenced the global debate on governance reform. The use of information and communication technologies (ICTs) in government processes for the purpose of enhancing efficiency, transparency, accountability, and citizens' engagement has become a key tenet of development planning in both developed and developing countries (Heeks, 2006; United Nations, 2020). The shift took institutional forms in the Indian context with the launch of the Digital India Programme in 2015, which discussed a vision of digitally empowered citizens for receiving government services at their fingertips through integrated and interoperable platforms (Ministry of Electronics and Information Technology [MeitY], 2019).

Andhra Pradesh is in a unique position in this National context. When the erstwhile Andhra Pradesh bifurcated into its new state in 2014, it had to build administrative infrastructure from the ground up and make its presence felt as a digital governance leader. The Amaravati government (2014-19), under the leadership of the Telugu Desam Party (TDP), set out a grand plan of creating a technologically advanced city-state at Amaravati and using digital tools to provide clear, streamlined public services. The interventions like Meeseva Common Service Centre network, the AP Fibernet broadband project, the integrated e-Pragati middleware platform, and the latter one introduced by the YSR Congress government from 2019, Gramasachivalayam-Ward Volunteer System, made the state a more dynamic subnational governance innovator in South Asia, as recognised by the United Nations E-Government Survey 2020 (United Nations, 2020). Even with the institution's enthusiasm, the findings of the impacts of such initiatives on actual administrative efficiencies and citizen experiences are still poorly developed and largely anecdotal. Previously, research on e-governance in India has largely been at the macro level of the country or the broad level of the metropolitan areas, with limited focus on the unique challenges and opportunities of states such as Andhra Pradesh, which have experienced post-bifurcation consolidation while also championing digital transformation initiatives (Bhatnagar, 2014; Misra & Bhatt, 2016). Moreover, current evaluations usually do not address the dimensions of distribution, meaning the extent to which e-governance benefits are equally available to the various groups, including socio-economic and gender groups and geographical locations.



This study aims to overcome these gaps by systematically measuring the adoption of e-governance and administration efficiency in Andhra Pradesh using an empirical approach. The study is based on primary survey data from 420 respondents across six districts (Guntur, Krishna, Visakhapatnam, Kurnool, Chittoor, and Srikakulam) and key informant interviews with district-level administrators and Meeseva operators, and assesses the impact of e-governance on the process of service delivery in the state. In particular, it covers awareness and access behavior, the use of services, citizen satisfaction, reduction in the turnaround time, corruption perceptions, and problems in adoption.

The structure of the paper is as follows. Section 2 examines the theoretical and empirical works related to the adoption of e-governance. The theoretical background for the study is included in Section 3. The research goals are discussed in Section 4. The methodology is described in Section 5. Section 6 gives an overview of the e-governance initiatives in Andhra Pradesh. Interpretation of the empirical results and analysis is included in Section 7 with the aid of tables. Discussion of implications of findings in Section 8. The final section of this chapter is a set of recommendations for policies.

2. Review of Literature

The concept of e-governance has developed from the earlier studies of Heeks (2006), who proposed a spectrum of e-government transformations from the first 'e-administration' and improvements to internal government operations to 'e-governance' and government-citizen interactions. Layne and Lee (2001) provided an influential four-stage model of e-government development: cataloguing, transaction, vertical integration, and horizontal integration, which proposed a pathway to the full integration of service ecosystems, geared toward citizens. These early models constitute formalizations of analysis that later empirical work has been grounded in.

The United Nations E-Government Survey at the macro-level has been the most extensive global comparison of e-government development. As of 2020, 193 UN member countries had national e-government portals, and every region experienced an increase in the provision of online services. India scored 100 on the E-Government Development Index (EGDI) and had made progress, but also highlighted several structural gaps (United Nations, 2020). The World Bank's World Development Report 2016 on Digital Dividends suggested that although the adoption of ICTs was accelerating, the dividend of these technologies on governance and welfare was not so evenly spread across populations, with the benefits going to already advantaged populations (World Bank, 2016). This seeming paradox is particularly relevant in sub-national contexts in India.

Bhatnagar (2014) systematically reviewed e-government projects in various states of India, and found that projects that had the most definitive impact - such as early implementation of the CARD land record system in Andhra Pradesh and e-Mitra kiosks in Rajasthan - were successful when they had clear political support, project management, and focus on reengineering the backend process. The mere implementation of technology, Bhatnagar added, had often resulted in the revival of old bureaucratic practices, without administrative changes.

Bertot, Jaeger, and Grimes (2010) examined the potential for interaction between anti-corruption e-government and social media, and suggested that digital tools of transparency could significantly rebalance rent-seeking relationships in public administration. They have developed a framework that would apply to the AP Meeseva context, where the cutting out of intermediate clerks and the installation of audit trails of service transactions were specifically targeted to reduce bribery. This is in line with Meijer's (2015) finding that digital transparency puts pressure on bureaucracies at the front lines to be held accountable.

The research on e-governance, particularly in the state of Andhra Pradesh, is gaining momentum but has not been paid sufficient attention to systematically in an empirical sense. Misra and Bhatt (2016) and Rao, M. K. P. (2018) reported initial successes of the Meeseva platform, which brought down the time taken to issue certificates from weeks to days, and significantly reduced unofficial payments. Their study, however, was restricted to urban and peri-urban districts and failed to consider issues related to adoption in rural areas. Raghunath and Prabhakar (2017) assessed the AP Fibernet project and signalled hope for improved connectivity, noting that there had to be investments in digital literacy as well for governance to improve. As per NASSCOM Foundation (2019), there are challenges with female user participation and grievance escalation at Common Service Centre (CSC) and the state of AP is among the better states in terms of its transaction volume at CSC.



Literature indicates that there are a set of interrelated constraints that emerge when considering the barriers to e-governance adoption: lack of sufficient ICT infrastructure, especially in rural areas; rural citizens and frontline government functionaries lack digital literacy; language and interface barriers arise with platforms that are primarily in English; procedural complexity is a barrier even for digitally literate citizens; and mistrust of digital systems among citizens with a history of face-to-face interaction (Shareef, Kumar, Kumar, & Dwivedi, 2011; Weerakkody, Janssen, & Dwivedi, 2011). In India, these barriers are further exacerbated by the socio-economic differences between and within states.

This study addresses the theoretical gap, in which district-level empirical data that combines the supply-side administrative efficiency indices and the demand-side satisfaction indicators of the citizens of Andhra Pradesh is not currently available. Government data by state gives macro-level information, while it fails to illuminate the micro-level dynamics of distribution that will mean equity in the benefits of e-governance. This study fills this gap by integrating the evidence obtained from the primary survey with administrative data to build a multi-dimensional empirical picture of e-governance outcomes in the state.

3. Theoretical Framework

This study uses three related theories, namely the Technology Acceptance Model (TAM), the New Public Management (NPM) paradigm, and the Capability Approach.

The Technology Acceptance Model was proposed by Davis (1989) and later expanded by Venkatesh and its colleagues to suggest that these two factors, perceived usefulness and perceived ease of use, are the main determinants in the acceptance of information systems by users. TAM has a profound application in the e-governance context in understanding citizens' acceptance and rejection of digital service channels. In the context of a state such as Andhra Pradesh, where state-run e-governance platforms such as Meeseva provide various services, including caste and income certificates to pension payments, the insights from TAM can help provide some understanding of differential adoption among demographic groups.

In the 1980s and 1990s, public administration was reshaped in international terms by the New Public Management paradigm pioneered by Hood (1991) and Osborne and Gaebler (1992), which had an impact on how the field was conceptualised, focusing on the importance of efficiency, performance measurement, customer orientation, and devolution of managerial authority. In many ways, e-governance is the technology implementation of NPM principles: it brings in standards for service delivery, it reduces the cost of transactions, it provides tools for monitoring performance, and it places citizens as customers as having a right to timely, high-quality service. The explicit use of service-level agreements in the Andhra Pradesh government's policy for Meeseva transactions that specify turnaround times and how to escalate citizen grievances is a sign of this NPM orientation.

The Capability Approach is from Amartya Sen (1999) and has been elaborated by Nussbaum (2011). It offers an equity-based corrective to the efficiency focus of NPM. Sen believes that the growth of services and the output of the economy are not the only measures of development; substantive freedoms, defined as the actual capacities of people to function and live lives to which they have reason to be attached, are more important. When used in e-governance, the Capability Approach requires more than a sum of efficiency measures and asks who is gaining capabilities from digital governance, and who is losing capabilities from digital governance? It highlights digital exclusion - structural marginalisation of groups that are not able to access digital platforms of services because of a lack of literacy, connectivity, and social networks.

These three frameworks converge to an analytical structure that is both sensitive to systemic improvement of efficiency (NPM) and attuned to individual aspects of adoption (TAM) and distributional equity (Capability Approach). The use of this multi-theoretic lens is especially suitable for the Andhra Pradesh context, which has the ambition of having a robust e-governance infrastructure, but considerable socio-economic choices between the 13 districts in the state.

4. Objectives of the Study

The study aims at the following specific objectives:

1. To understand the awareness and utilization of e-governance services by the citizens in some selected districts of Andhra Pradesh.
2. To assess the effect of e-governance programs on administrative efficiency, represented by turnaround time of services, documentation needs, and corruption reduction.



3. To assess the level of satisfaction of the citizens in relation to the quality, accessibility, and responsiveness of e-governance sites in Andhra Pradesh.
4. To determine the key socio-economic, infrastructural, and institutional constraints that hinder the complete implementation of e-governance.
5. To explore the distributional aspects of the benefits of e-governance across gender, rural-urban, education, and income.
6. To come up with policy suggestions based on evidence for improving e-governance results in Andhra Pradesh.

5. Research Methodology

5.1 Research Design

This study uses a mixed-methods research design – a combination of quantitative survey data and qualitative key informant interviews. The mixed-methods approach is suitable because the study's purpose is to measure the aggregate efficiency measures using quantitative measures and to understand the lived citizen experiences using qualitative methods (Creswell & Plano Clark, 2017). The quantitative part helps to obtain generalizable empirical information on adoption rates, satisfaction, and efficiency measures, whereas the qualitative part helps to gain a contextual depth and explanatory nuance.

5.2 Sampling Strategy and Data Collection

From October to December 2019, the primary data was gathered. The study purposefully selected six districts, which represent the geographical and socio-economic diversity of Andhra Pradesh, as Visakhapatnam (coastal urban-industrial), Guntur (deltaic agricultural), Krishna (peri-urban industrial), Kurnool (Rayalaseema semi-arid), Chittoor (horticultural-border), and Srikakulam (northern tribal-coastal). Stratified random sampling was used to ensure representational balance within each district, and three mandals were selected – one urban, one semi-urban, and one rural.

For each Mandal, the respondents were selected from the voter list by systematic random sampling. The final sample included 420 adult respondents (70 respondents per district) with a 94.3% response rate (excluding refusals and questionnaires that were not completed). The sample included 226 males (53.8%) and 194 females (46.2%) respondents. Qualitative data were gathered through 36 key informant interviews with Meeseva operators (12), district-level administrative officers (12), and elected Panchayat representatives (12).

5.3 Instruments and Variables

The primary questionnaire comprised five modules: (1) socio-demographic profile; (2) awareness and access to e-governance services; (3) patterns of service utilisation; (4) perceived administrative efficiency and service quality; and (5) barriers to adoption. A five-point Likert scale was used for attitudinal items. Secondary data was drawn from the Government of Andhra Pradesh's Meeseva Monthly Progress Reports, the AP Fibernet Project Status Reports, MeitY's Common Service Centre annual data, and the NASSCOM Foundation's 2019 assessment of CSC performance.

5.4 Analytical Methods

Quantitative data were analysed using IBM SPSS v.25. Descriptive statistics, including frequencies, means, and standard deviations, characterise the sample. Bivariate analysis employed chi-square tests and Pearson's correlation to examine relationships between variables such as educational attainment and e-service utilisation, or urban-rural location and satisfaction scores. Multiple regression analysis was used to identify predictors of overall citizen satisfaction with e-governance. Qualitative interview data were analysed using thematic coding with NVivo v.12.

6. An overview of the E-Governance initiatives in Andhra Pradesh

Since the early 2000s, AP has been pioneering the e-governance initiative in India with the introduction of programs like CARD (Computer-Aided Administration of Registration Department) and Rajiv Internet Village Programme, which were instrumental in ushering in digital public service delivery. Since the bifurcation in 2014, the new state carved out of it has continued this tradition by developing many more extensive and ambitious digital governance platforms.

6.1 Meeseva

Meeseva (literally means 'Your Service' in Telugu) is the Government to Citizen (G2C) e-governance platform of the Government of Andhra Pradesh and provides more than 380 government services through a chain of service centres set up at Mandal headquarters and urban ward offices. Services include income, caste, nativity, and residence certificates, property registrations, pension application, driving licence renewal, payments for utilities, etc. Till March 2019, Andhra Pradesh had 4,024 Meeseva centres in operation and handling about 25.7 lakh (2.57 million)

transactions monthly (Government of Andhra Pradesh, 2019a). Meeseva is based on service-level agreement principles: Each of the services has a prescribed turnaround time (usually 15 to 30 days for obtaining certificates), and citizens can check the status of their application online. The platform is linked to the Integrated Financial Management System (IFMS) and the Aadhaar-based Identity Authentication (Aadhaar e-KYC).

6.2 AP Fibernet

The AP Fibernet project was initiated in 2015 to bring high-speed optical fibre broadband network connectivity to all 12.5 million households in Andhra Pradesh at affordable rates, in addition to providing free broadband connectivity at government schools, primary health centres, and gram panchayats. AP State FiberNet Limited (APSFL), in collaboration with Bharat Sanchar Nigam Limited (BSNL), implemented the project. As of the end of 2019, the project had laid about 31,000 kilometres of optical fibre and had linked over 12,000-gram panchayats (Raghunath & Prabhakar, 2017; Government of Andhra Pradesh, 2019b). AP Fibernet is designed to be the backbone of critical infrastructure to facilitate the delivery of e-governance services, especially in rural areas where mobile internet is thin on the ground.

6.3 e-Pragati

The e-Pragati is the integrated governance platform that is presently being created for the State of Andhra Pradesh, which integrates 51 Government Departments with interoperable data exchange protocols as the middleware. e-Pragati has been developed with the help of McKinley & Company and has been deployed from 2016 to 2018. It has laid down a framework for citizen identification (Aadhaar, ration card, land records data), and has facilitated a seamless sharing of data between various departments without citizens having to submit the same documents over and over for various government services. Till 2019, e-Pragati has linked more than 400 services and 3.1 billion citizen records with linked databases (Government of Andhra Pradesh, 2019c; MeitY, 2019).

6.4 Gramasachivalayam and Ward Volunteer System.

The YSR Congress government introduced the Gramasachivalayam scheme in October 2019, setting up secretariats at the village level with dedicated functionaries for 19 government departments that are responsible for conducting door-to-door government surveys and delivering services to people under welfare schemes, with about 2.7 lakh (270,000) ward volunteers. The system is a hybrid (digital-physical) service delivery approach that relies on the use of tablets and mobile applications to capture information about the beneficiaries at the household level and to process entitlement. While still nascent at the time of this study's data collection, the scheme's early rollout was captured in the qualitative component of the research.

Table 1: E-Governance Initiatives in Andhra Pradesh

E-Governance Initiative	Launch Year	Coverage	No. of Services/Features	Monthly Transactions (2019)
Meeseva (G2C Service Centres)	2003 (reformed 2014)	4,024 centres across 13 districts	380+ G2C services	25.70 lakh
AP Fibernet (APSFL)	2015	12,000+ gram panchayats; 31,000 km fibre	High-speed broadband connectivity	N/A (infrastructure)
e-Pragati (Integrated Platform)	2016–18	51 departments; 3.1 billion records	400+ integrated services	N/A (middleware)
Gramasachivalayam / Ward Volunteers	2019	11,162 village secretariats; 2.7 lakh volunteers	19-department coverage at the doorstep	Nascent (post-launch)
AP Real-Time Governance Society (RTGS)	2014	All 13 districts, 175 mandals	Real-time dashboard monitoring	Continuous monitoring
eProcurement Portal (AP)	2010 (upgraded 2016)	All government departments	Tendering, procurement, e-auctions	State-wide

Note. Data sourced from Government of Andhra Pradesh (2019a) Meeseva Monthly Progress Report, April 2019; AP State FiberNet Limited (2019) Project Status Report; MeitY (2019) Annual Report 2018-19.





7.1 Socio-Demographic Profile of Respondents

The 420-respondent sample exhibited the following socio-demographic characteristics. Approximately 53.8% were male and 46.2% female. In terms of educational attainment, 18.6% had no formal education or were literate without formal schooling; 27.4% had completed primary education (up to Class V); 31.9% had completed secondary education (Classes VI–X); 14.3% had completed intermediate or pre-university education; and 7.8% held graduate or postgraduate degrees. The occupational breakdown was: agricultural labour and farming (38.6%), non-agricultural wage labour (19.0%), small trade and self-employment (17.4%), government employment (9.5%), private sector employment (8.1%), and homemakers (7.4%). In terms of geographic distribution, 42.1% of respondents resided in urban or semi-urban Mandal headquarters, and 57.9% in rural villages.

Table 2: Demographic Profile of the Respondents

Socio-Demographic Variable	Category	Frequency (N)	Percentage (%)
Gender	Male	226	53.8
	Female	194	46.2
Education	No formal education / literate	78	18.6
	Primary (up to Class V)	115	27.4
	Secondary (Classes VI–X)	134	31.9
	Intermediate / Pre-University	60	14.3
	Graduate / Postgraduate	33	7.8
Location	Urban / Semi-Urban Mandal	177	42.1
	Rural Village	243	57.9
Occupation	Agriculture (farming/labour)	162	38.6
	Non-agricultural wage labour	80	19.0
	Small trade/self-employment	73	17.4
	Government employee	40	9.5
	Private sector employee	34	8.1
	Homemaker	31	7.4

Note. Primary survey data collected by the authors, October–December 2019 (N = 420).



A foundational prerequisite for e-governance adoption is citizen awareness of available platforms and the services they provide. Survey findings reveal a nuanced pattern: while overall awareness of the term "e-governance" or "digital services" was relatively high (67.4%), awareness of the specific service capabilities of individual platforms was substantially lower. Only 48.3% of respondents were aware that Meeseva centres could issue income and caste certificates; 31.7% knew that driving licence renewals could be processed through digital channels; and a mere 22.9% were aware of the AP Fibernet broadband initiative.

Access—defined as having personally used an e-governance service at least once in the preceding 12 months—was reported by 54.8% of respondents overall. However, the urban-rural differential was stark: 74.6% of urban respondents reported having used an e-governance service, compared to only 40.3% of rural respondents. Similarly, access was strongly correlated with educational attainment: 91.2% of respondents with graduate or postgraduate qualifications had used e-governance services, compared to only 24.4% of those with no formal education. Gender differences were also evident: 61.5% of male respondents reported access, compared to 46.9% of females, a gap attributable primarily to lower digital literacy and mobility restrictions among rural women (chi-square = 11.34, $p < .05$).

Table 3: Respondents' Awareness of E-governance

Category	Sub-group	Aware of e-Governance (%)	Have Used e-Governance Service (%)
Overall	All respondents (N = 420)	67.4	54.8
Location	Urban / Semi-Urban (N = 177)	82.5	74.6
	Rural (N = 243)	56.4	40.3
Gender	Male (N = 226)	72.6	61.5
	Female (N = 194)	61.3	46.9
Education	No formal education (N = 78)	38.5	24.4
	Primary (N = 115)	55.7	38.3
	Secondary (N = 134)	74.6	61.2
	Intermediate (N = 60)	88.3	80.0
	Graduate+ (N = 33)	97.0	91.2

Note. Primary survey data (N = 420). Chi-square analysis significant at $p < .05$ for all cross-tabulations. Urban/rural and education differentials are statistically significant ($p < .001$).

7.3 Administrative Efficiency: Turnaround Time and Process Simplification

A major claim to e-governance is that it shortens the time taken to provide services and streamlines the procedures. To evaluate this dimension, the survey asked the respondents to compare the time it takes to get services before and after the introduction of e-governance platforms, while they were recalling their experiences with the same categories of services (certificate issuance, land records, pension enrolment, complaints regarding utilities).



The results support the efficiency story. 71.3% of respondents who had used Meeseva said that the process of issuing certificates of income and caste had "decreased significantly" since the switch to it. The mean perceived turnaround time for the issuance of a certificate was 8.4 days for Meeseva and 23.7 days for the pre-digital certificate, which represents a drop of around 64.6%. Secondary data from the Government of Andhra Pradesh Meeseva performance reports partially support these perceptions: The average issuance time of income certificates dropped from 21 days (as per the 2013 baseline before the start of the Meeseva scheme) to 12 days after the initial rollout of Meeseva and to 7–9 days after the process streamlining in 2016 (Government of Andhra Pradesh, 2019a).

Similarly, access to land records and land mutation was seen as having improved dramatically by the respondents. Traditionally, when land records were sold in Andhra Pradesh, it took several months to get the record of the land registered after the mutations were made. In the past, the process of mutation of land records after the sale of land would involve multiple visits to the Sub-Registrar's office and revenue Mandal office, often taking several months. The introduction of integrated land record management and e-registration reduced perceived average processing time from 38.4 days (recall) to 14.1 days (current experience) among respondents who had undertaken such transactions.

Table 4: Respondents' Ratings of Pre and Post E-governance Initiatives

Service Category	Pre-e-Governance Avg. Days (Recalled)	Post-e-Governance Avg. Days (Current)	% Reduction	Respondents Rating 'Significantly Improved' (%)
Income / Caste Certificate	23.7	8.4	64.6%	71.3
Nativity / Residence Certificate	21.5	7.9	63.3%	68.7
Land Record Mutation	38.4	14.1	63.3%	57.4
Pension Scheme Enrolment	45.2	19.3	57.3%	62.1
Driving Licence Renewal	17.8	8.2	53.9%	58.9
Utility Complaint Resolution	18.3	11.7	36.1%	44.2
Birth / Death Certificate	14.6	5.8	60.3%	74.8

Note. Perceived turnaround times based on respondent recall (pre-2014) and current experience (2019). Secondary data from the Government of Andhra Pradesh (2019a), Meeseva Monthly Progress Report; National Council of Applied Economic Research [NCAER] (2018). Baseline figures represent a weighted average from survey recall and secondary administrative records.

7.4 Citizen Satisfaction with E-Governance Services

Overall citizen satisfaction with e-governance services was measured using a composite index derived from five Likert-scale items: ease of access, quality of service (accuracy, completeness), staff behaviour, physical environment of service centres, and overall experience. The composite Citizen Satisfaction Index (CSI) ranged from 1 (highly dissatisfied) to 5 (highly satisfied), with a midpoint of 3 representing neutral assessment.

The overall mean CSI of the respondents who had utilized e-governance services ($N = 230$) was 3.62 ($SD = 0.74$), which shows a moderately positive satisfaction level. Satisfaction was highest for "ease of access" (mean = 3.89) and lowest for "grievance redressal and follow-up" (mean = 3.14). Consistent with access findings, urban respondents reported significantly higher satisfaction (mean CSI = 3.91) than rural respondents (mean CSI = 3.38), a statistically significant difference ($t = 6.43$, $p < .001$). Female respondents reported slightly lower satisfaction than males (3.51 versus 3.71), largely attributable to reported difficulties in travelling to Mandal-level Meeseva centres.



Table 5: Respondents' opinion on service satisfaction

Satisfaction Dimension	Mean Score	Std. Dev.	Urban Mean	Rural Mean
Ease of access to the service centre/portal	3.89	0.68	4.12	3.61
Speed of service delivery	3.74	0.72	3.98	3.47
Accuracy and completeness of service	3.71	0.79	3.90	3.49
Staff behaviour and courtesy	3.68	0.81	3.82	3.51
Physical environment of the service centre	3.56	0.84	3.79	3.30
Grievance redressal and follow-up	3.14	0.93	3.44	2.82
Overall Citizen Satisfaction Index (CSI)	3.62	0.74	3.91	3.38

Note. CSI scores based on a five-point Likert scale (1 = highly dissatisfied, 5 = highly satisfied). N = 230 (respondents who had used e-governance services). Primary survey data.

7.5 Corruption Mitigation and Transparency

A critical dimension of administrative efficiency in the Indian context is the reduction of informal payments and bribery associated with access to public services. E-governance platforms that eliminate direct citizen-official contact at the point of service delivery are theorised to reduce opportunities for rent extraction (Bertot et al., 2010; Klitgaard, 1988). The survey findings offer cautious empirical support for this proposition in the Andhra Pradesh context.

Among respondents who had used both manual (pre-e-governance) and digital (post-e-governance) service channels, 56.7% reported that they had paid unofficial fees ("speed money" or bribery) in at least one transaction under the manual system, compared to 17.3% who reported being solicited for unofficial payments at Meeseva centres. The reduction in bribe incidence (approximately 39.4 percentage points) is substantial, though the persistence of informal payment demands in nearly one-in-six digital transactions signals that digitalisation has not eliminated corruption entirely. Qualitative interview data from key informants suggested that corruption had partially migrated "upstream"—from service delivery counters to documentation verification and data entry stages—rather than being eliminated.

Table 6: Experiences of Respondents with Prior Exposure To Both Manual And E-Governance Service Channels

Corruption Indicator	Pre-E-Governance (%)	Post-E-Governance (%)	Change (pp)	Significance
Respondents who paid an unofficial fee	56.7	17.3	−39.4	p < .001
Respondents solicited a bribe but refused	12.4	6.2	−6.2	p < .05
Respondents are unaware of the official fee structure	63.5	28.4	−35.1	p < .001



Corruption Indicator	Pre-E-Governance (%)	Post-E-Governance (%)	Change (pp)	Significance
Perceived overall transparency (4–5 on 5-pt scale)	22.5	61.3	+38.8	$p < .001$
Willingness to report corruption (4–5 on 5-pt scale)	18.0	43.2	+25.2	$p < .01$

Note. Data based on self-reported ($N = 178$). Primary survey data. AP Lokayukta annual report provides state-level bribery complaint trends (Government of Andhra Pradesh, 2018).

7.6 Barriers to E-Governance Adoption

Respondents who had not used e-governance services ($N = 190$) and those who had experienced difficulties ($N = 112$ among users) were asked to identify the primary barriers to adoption. Multiple responses were permitted; data are presented as the percentage of respondents identifying each barrier. Digital illiteracy emerged as the single most frequently cited barrier (58.4%), followed by lack of internet connectivity at home or in the village (47.9%), distance to the nearest Meeseva centre (42.6%), procedural complexity and documentation requirements (38.2%), language barriers (services perceived as requiring English literacy) (26.3%), concern about data privacy and misuse (19.5%), and negative prior experiences with e-governance systems (11.8%).

Table 7: Respondents Identified Barrier to E-Governance Adoption

Barrier to E-Governance Adoption	% Respondents Identifying Barrier	Rank	Urban (%)	Rural (%)
Digital illiteracy/lack of ICT skills	58.4	1	38.2	72.6
Lack of internet connectivity (home/village)	47.9	2	21.4	67.1
Distance to the nearest Meeseva centre	42.6	3	14.8	63.8
Procedural complexity/documentation burden	38.2	4	41.6	35.8
Language barriers (English-centric interfaces)	26.3	5	19.5	31.4
Concerns about data privacy / Aadhaar misuse	19.5	6	24.8	15.6
Negative prior experience with the e-gov system	11.8	7	13.4	10.6
Cost of internet/smartphone access	9.7	8	6.7	11.9

Note. $N = 302$ (respondents who either had not used e-governance services or who reported encountering difficulties). Multiple responses permitted; percentages do not sum to 100. Primary survey data. Digital literacy figures cross-referenced with the NASSCOM Foundation (2019) national CSC assessment.



A multiple linear regression was conducted with the composite Citizen Satisfaction Index (CSI) as the dependent variable and six theoretically motivated predictors as independent variables: educational attainment (continuous, 1–5 ordinal scale), urban-rural location (dummy variable, 1 = urban), gender (dummy, 1 = male), frequency of e-governance usage in prior 12 months (continuous, number of transactions), perceived reduction in corruption (five-point Likert), and perceived ease of use of platform (five-point Likert). The model explained 61.4% of variance in CSI ($R^2 = 0.614$, $F(6, 223) = 59.17$, $p < .001$), indicating strong explanatory power.

Perceived ease of use emerged as the strongest predictor ($Beta = 0.421$, $p < .001$), followed by perceived corruption reduction ($Beta = 0.318$, $p < .001$), frequency of usage ($Beta = 0.214$, $p < .01$), urban location ($Beta = 0.187$, $p < .01$), and educational attainment ($Beta = 0.142$, $p < .05$). Controlling for the other factors, the apparent gender difference in satisfaction is not significant ($Beta = 0.061$, $p = .21$), meaning that the difference in satisfaction between women and men is largely due to education level and access frequency rather than to gender.

Table 8: Citizen satisfaction predictor variables

Predictor Variable	Beta (β)	t-statistic	p-value	95% CI
Perceived ease of use	0.421	7.84	< .001***	[0.31, 0.54]
Perceived corruption reduction	0.318	5.92	< .001***	[0.21, 0.43]
Frequency of e-gov usage	0.214	3.97	< .01**	[0.11, 0.32]
Urban location (vs. rural)	0.187	3.46	< .01**	[0.08, 0.29]
Educational attainment	0.142	2.63	< .05*	[0.04, 0.25]
Gender (male vs. female)	0.061	1.26	.210 (n.s.)	[-0.04, 0.16]
(Constant)	—	4.23	< .001***	—

Note. Dependent variable: Composite Citizen Satisfaction Index (CSI, 1–5 scale). $N = 230$. $R^2 = 0.614$; Adjusted $R^2 = 0.604$; $F(6, 223) = 59.17$, $p < .001$. * $p < .05$; ** $p < .01$; *** $p < .001$. Primary survey data, OLS regression estimated in IBM SPSS v.25.

7. Discussion

The findings of the study lend support to and substantiate the rosy tales emerging around e-governance in Andhra Pradesh. The data yield three general arguments. The first reason is that the benefits of e-governance are indeed real and significant. Reductions in service turnaround times by the Meeseva platform across all seven service categories (Table 4) confirm that it is having a material impact on improving the speed of government service delivery, as documented by international evidence of the transaction-cost-reducing nature of digital service delivery channels (Bhatnagar, 2014; World Bank, 2016). The decline in the reported rates of bribery from 56.7% in 2007 to 17.3% in 2010 (Table 6) adds up to a solid anti-corruption dividend, which reinforces Bertot et al.'s (2010) view that e-governance establishes accountability mechanisms that work against rent-seeking. The efficiency and transparency gains are also reflected in the consistent performance of AP in the national rankings of e-governance, and the state has been recognized as a sub-national leader in digital service delivery innovation in the UN E-Government Survey 2020. These benefits, however, are unevenly distributed, with the second being the most beneficial. The urban-rural access gap (74.6% versus 40.3% usage rates), combined with the education gap (91.2% amongst graduates versus only 24.4% amongst those with no education) and the gender gap in both access and satisfaction rates, indicates that e-governance, as currently implemented in Andhra Pradesh, can add to social inequalities and not alleviate them. This is a very strong argument for the Capability Approach critique that the sum of the efficiencies is not enough if they systematically exclude the poorest groups. It also reminds us of the World Bank's (2016) caution regarding the "digital dividends paradox," which is the potential of the ICT expansion to benefit the already advantaged and disadvantage the already disadvantaged.



Third, the regression analysis (Table 8) suggests that the most important factors in citizen satisfaction are perceived ease of use and perceived corruption reduction. This has important policy implications. It recommends investments in user interface, providing Telugu language access, and informing the citizens about the anti-corruption successes will return the most satisfaction. Alternatively, the fact that gender is non-significantly predictive (when controlling for education and access frequency) indicates that it is the underlying mediators (digital literacy and physical access) that should be targeted in interventions, and not gender-specific platforms.

The qualitative results obtained from key informant interviews complement the quantitative results. In the rural districts of Srikakulam and Kurnool, the operators of Meeseva consistently reported that a substantial number of the transactions they conducted on a daily basis were assisted by their operators (citizens brought documents to the counter and were assisted by the operator to use the service portal). This 'assisted e-governance' approach, while not essentially bad, is a dependency on the skills and honesty of individual operators and represents, in a weaker form, the discretion-based service encounters of pre-digital times. Back-end integration with departmental databases was not completed in some categories of service, meaning that it was not possible to reap the front-end benefits due to processing bottlenecks.

While the Gramasachivalayam scheme came up in October 2019, it was too early to evaluate it in a systematic way, but it was greeted with cautious optimism by the administrators and citizens. The scheme's doorstep service delivery model can help overcome the access barriers that may account for many of the rural-urban differences shown in this study. But there were worries about the training of village secretariat functionaries as well as the financial sustainability of the scheme.

9. Conclusion and Policy Recommendations

This study has been an empirical, systematic one, which was based on primary survey data collected from 420 respondents from six districts of Andhra Pradesh, secondary evidence, and qualitative data. The key conclusions are as follows: EPragati and AP Fibernet, both e-governance platforms in Andhra Pradesh, have provided substantial measurable improvement in citizen satisfaction, service turnaround time, and transparency. These improvements are real but are limited to the urban, educated, and male population, while rural citizens, women, and the less educated have significantly less access, utilisation, and satisfaction. Last-mile connectivity and Digital literacy are still the biggest hurdles for wider adoption.

Based on the above conclusions, the study forwards six policy suggestions for integrating and broadening Andhra Pradesh's successes in e-governance:

1. Scale AP Digital Literacy Mission: with a targeted focus on rural women, agricultural labourers, and the elderly. Community-based digital literacy camps with Gramasachivalayam network and Ward Volunteers as trainers provide a cost-effective delivery mechanism. There is a need to focus on Meeseva-specific computer navigation skills in the curricula, instead of computer literacy.
2. Last-Mile Connectivity Acceleration: AP Fibernet connectivity targets in the 57.9% of survey respondents' villages that lacked reliable broadband must be prioritised. APSFL should establish milestones for connectivity with independent performance auditing at the Mandal level. Meanwhile, e-governance services should be leveraged via USSD and IVR to provide optimised services for the most frequently used services.
3. Strengthen Grievance Redressal: This was the lowest rating in satisfaction (CSI = 3.14). The State should set up a real-time and mobile SMS based grievance tracking system that is connected to the Meeseva application and has a mandatory escalation system for complaints that do not get resolved within seven days. The dashboard infrastructure of the AP Real-Time Governance Society is suitable for this.



4. Back-End Process Re-engineering: Improving processes at the front end of the organization where citizens interact must be accompanied by back-end process changes in the departments. The state should have the data integration completeness audited in all 51 e-Pragati-linked departments and come up with a time-bound plan for addressing any interoperability gaps that could delay processing.

5. Institution of Citizen Feedback Mechanism: Citizen satisfaction survey should be conducted every year, and reports should be made in the RTGS dashboard by an independent body. Districts' and Meeseva operator incentive payments should include both citizen satisfaction scores and transaction volume.

6. Gender-Responsive E-Governance Design: Gender is not an independent predictor of satisfaction, but gender differential access is significant. Village secretariats should have female-specific operating timings, female operators, and awareness talks for SHGs to address the challenges for women in e-governance.

The state of Andhra Pradesh is at a turning point in its progress towards e-governance. Technological infrastructure-Meeseva, AP Fibernet, e-Pragati has been set up. The challenge now is not just about putting infrastructure in place but making sure that the positive impacts of digital governance are felt by all segments of the vast and varied population of a state. The Gramasachivalayam initiative, which is based on a hybrid door-step model, is a mechanism with the potential to change the digital divide. However, it will be successful only if it is adequately resourced, sufficiently trained, and has political support to keep the scheme going beyond the first rollout phase. In the future, the longitudinal development of e-governance outcomes in Andhra Pradesh should be studied, taking particular note of whether the scheme of Gramasachivalayam reduces access inequalities as described in this study.

References

- Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government Information Quarterly*, 27(3), 264–271. <https://doi.org/10.1016/j.giq.2010.03.001>
- Bhatnagar, S. C. (2014). Public service delivery: Role of information and communication technology in improving governance and service delivery. Asian Development Bank. <https://www.adb.org/publications/public-service-delivery-role-information-and-communication-technology>
- Common Service Centres (CSC). (2019). Annual report 2018–19. Ministry of Electronics and Information Technology, Government of India. <https://csc.gov.in>
- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Government of Andhra Pradesh. (2018). Annual report of the Andhra Pradesh Lokayukta 2017–18. Andhra Pradesh Lokayukta, Vijayawada.
- Government of Andhra Pradesh. (2019a). Meeseva monthly progress report, March 2019. Department of Information Technology, Electronics and Communications, Government of Andhra Pradesh, Amaravati.
- Government of Andhra Pradesh. (2019b). AP State FiberNet Limited: Project status report 2018–19. AP State FiberNet Limited (APSFL), Vijayawada.
- Government of Andhra Pradesh. (2019c). e-Pragati integrated governance framework: Status report 2019. Department of Information Technology, Electronics and Communications, Government of Andhra Pradesh, Amaravati.
- Heeks, R. (2006). *Implementing and managing eGovernment: An international text*. SAGE Publications.
- Hood, C. (1991). A public management for all seasons? *Public Administration*, 69(1), 3–19. <https://doi.org/10.1111/j.1467-9299.1991.tb00779.x>
- Klitgaard, R. (1988). *Controlling corruption*. University of California Press.
- Layne, K., & Lee, J. (2001). Developing fully functional e-government: A four-stage model. *Government Information Quarterly*, 18(2), 122–136. [https://doi.org/10.1016/S0740-624X\(01\)00066-1](https://doi.org/10.1016/S0740-624X(01)00066-1)
- Meijer, A. (2015). E-governance innovation: Barriers and strategies. *Government Information Quarterly*, 32(2), 198–206. <https://doi.org/10.1016/j.giq.2015.01.001>
- Ministry of Electronics and Information Technology (MeitY). (2019). Annual report 2018–19. Government of India, New Delhi. <https://www.meity.gov.in/documents/reports>



- Misra, S., & Bhatt, A. (2016). Meeseva and digital service delivery in Andhra Pradesh: An evaluative study. *Indian Journal of Public Administration*, 62(4), 812–830. <https://doi.org/10.1177/0019556116666985>
- NASSCOM Foundation. (2019). Digital India: Technology to transform a connected nation—Assessment of Common Service Centres 2019. NASSCOM Foundation, New Delhi. <https://nasscomfoundation.org>
- National Council of Applied Economic Research (NCAER). (2018). State of governance: A framework for assessment—Phase II. National Council of Applied Economic Research, New Delhi.
- Nussbaum, M. C. (2011). *Creating capabilities: The human development approach*. Harvard University Press.
- Osborne, D., & Gaebler, T. (1992). *Reinventing government: How the entrepreneurial spirit is transforming the public sector*. Addison-Wesley.
- Raghunath, S., & Prabhakar, K. (2017). Digital infrastructure and governance: An assessment of AP Fibernet's implications for rural e-governance in Andhra Pradesh. *Journal of Rural Development*, 36(3), 411–428.
- Rao, M. K. P. (2018). A study on e-governance in India: problems and prospects. *International Journal of Management, IT and Engineering*, 8(6), 270-289.
- Sen, A. (1999). *Development as freedom*. Oxford University Press.
- Shareef, M. A., Kumar, V., Kumar, U., & Dwivedi, Y. K. (2011). e-Government adoption model (GAM): Differing service maturity levels. *Government Information Quarterly*, 28(1), 17–35. <https://doi.org/10.1016/j.giq.2010.05.006>
- United Nations. (2020). UN e-government survey 2020: Digital government in the decade of action for sustainable development. United Nations Department of Economic and Social Affairs (UNDESA). <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2020>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified theory. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- Weerakkody, V., Janssen, M., & Dwivedi, Y. K. (2011). Transformational change and business process reengineering (BPR): Lessons from the British and Dutch public sector. *Government Information Quarterly*, 28(3), 320–328. <https://doi.org/10.1016/j.giq.2010.07.010>
- World Bank. (2016). *World development report 2016: Digital dividends*. World Bank Publications. <https://doi.org/10.1596/978-1-4648-0671-1>