

## Stakeholder's Expectation on Integrating ICT and the 5T Framework for Transformative e-Governance in Odisha

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### Abstract

This paper seeks to examine how Information and Communication technology (ICT) and the 5T Governance Framework: i) Teamwork, ii) Technology, iii) Transparency, iv) Time and v) Transformation are amalgamated in Odisha. This has enabled high-quality e-Governance, better service provision, and transparency and citizen participation. The paper analyses policy intervention, introduction of ICT infrastructures and the socio-economic impacts on the citizens. It contains the discussion on challenges, lessons learned, and recommendations on the sustainable governance reform with references to the potential of technology-driven models of governance. People, the administration, business partners and civil society are stakeholders who play a crucial role in designing, implementing and assessing ICT projects. This combines the information on e-governance and Odisha policies and experiences to determine how ICT strategies relate to the expectations of stakeholders and how they support the 5T objectives.

**Keywords:** e-Governance, ICT, 5T Framework, Digital Transformation.

### Introduction

The incorporation of Information and Communication Technology (ICT) has been a part of good governance in the modern digital age. Governments around the world are actively relying on ICT to improve on administration efficiency, transparency and involvement of citizens in service delivery. The State of Odisha in India has become the leader in adopting technological governance with its innovative 5T Framework: consisting of Teamwork, Transparency, Technology, Time, and Transformation. The 5T model is an attempt to change strategy to be more accountable and performance-oriented in governance, with technology acting as the driver of systemic change. In this context, the stakeholders, such as citizens, government officials, policymakers, and institutions, are very important, since their expectations and feedback determine the success of the e-governance initiatives. The expectations of the stakeholders are based on better service delivery, online accessibility, accountability and real-time responsiveness of the government departments. ICT in the public administration has resulted in a few initiatives that have had far-reaching effects in Odisha, including digitisation of land records, online revenue collections, integrations on Aadhaar, and electronic court monitoring systems. All these measures have helped in reducing bureaucratic delays, curbing corruption and increasing the level of satisfaction of the citizens. Nevertheless, their effectiveness and sustainability are based on how much these ICT interventions meet the expectations of the stakeholders. ICT implementation and the 5T framework synergy are, therefore, necessary to realise transformative governance.

## Literature Review

According to Heeks and Bertot et al. ICT has emerged as a crucial component of contemporary public administration, offering benefits, such as improved accessibility, efficiency, transparency, and citizen involvement [1, 2]. India has e-governance projects that are driven by ICT to minimise information leakage, expedite service provision, and enhance accountability [3]. The state of Odisha introduced the 5T model of governance, i.e., Teamwork, Technology, Transparency, Time, and Transformation, to promote citizen-oriented reforms at the state level. This 5T strategy explicitly connects the ICT adoption to better performance, Government of Odisha, 2022 [4, 5]. Citizens, administrators, private partners, and civil society are stakeholders that have a critical influence on the development, execution, and evaluation of ICT projects. The review is a synthesis of international and Indian e-governance literature with Odisha policies and experience to determine how ICT strategies can suit the stakeholder expectations and contribute to the 5T goals. It also relies on peer-reviewed e-governance and ICT4D literature, policy reports, such as Odisha IT Policy 2022. The Odisha Right to Public Services Act, 2012, states reports, scholarly case studies based on Nayak and Dash et al. [6, 7]. The government portals/initiatives, such as Mo Sarkar, e-Abhijoga, and RTP portals, these sources represent (a) theoretical knowledge about expectations and effects of e-governance, (b) empirical data of Odisha, and (c) criticism of gaps regarding expected and real results.

A general expectation of the citizens is that ICT will allow them to enjoy greater access to government services, minimise the use of intermediaries, lessen waiting time, and also increase transparency in diverse settings, as to the studies by Bhatnagar et al [9]. These aspirations are also extended to rural and tribal areas in India, where bridging the digital divide, offering low-cost and localised services, and enhancing redressal mechanisms are studied by Kumar and Best [10]. On the same note, the citizens of Odisha expect faster certificate delivery, more accessible welfare schemes, and enhanced responsiveness, which are embodied in the digital grievance and feedback platforms in the state by the e-Abhijoga portal, India.gov.in, etc. According to Dwivedi and Weerakkody, ICT is expected to simplify the working procedures, facilitate the use of data in decision-making, and minimise human error [11]. Departmental expectations are defined in the Odisha context to include integrated dashboards, sharing of data between departments and automated statutory timelines under the Right to Public Services Act. (The Odisha Right to Public Services Act, 2012). However, the literature warns that the officials also seek institutional support: training, change management and incentives to digitisation success, as explained by Gupta and Jana [12].

Misuraca explained that Government ICT initiatives are regarded by technical vendors and other private partners as platforms to form Public Private Partnerships (PPP), market (BPO, cloud services), and innovation in service delivery [13]. The IT Policy 2022 of Odisha expressly invites the participation of the private sector, data centres, and digital infrastructure investment based on the 5T goals (Government of Odisha, 2022). The civil society anticipates that ICT would enhance social responsibility, openness, and citizen involvement [14]. Behera and Malik explained that the Mo Sarkar (citizen feedback) project of Odisha and online grievance systems are aimed at empowering the citizens to assess the quality of services and hold the providers responsible. Nevertheless, the openness of data and the channels of participation of the civil society actors demand meaningful information and channels of participation instead of a tokenistic digital process.

The success of e-governance relies on technology, investments in broadband, cloud computing, data centres, and supporting infrastructure to enable state e-governance, as stated in Odisha IT Policy 2022. The Planning & Convergence Department assesses e-service platforms and identifies urgent needs for back-end integration [15]. Karan explained that the case studies of the revenue department reform (Bhulekh, e-Registration, DMS) demonstrate how paperwork is reduced and traceability improved due to digitised land records and automated workflows [16]. However, the lack of digital infrastructure (e.g., villages where mobile connectivity is unreliable) limits universal access (Times of India reporting), resulting in constraints on stakeholders' expectations of ubiquitous technological connectivity.

Transformation denotes deep institutional and cultural shifts in governance. Odisha positions 5T as a transformational agenda, linking ICT adoption to renewed performance culture and citizen centricity. Instances of improved financial traceability, citizen feedback loops (Mo Sarkar), and online grievance escalation are plausible indicators of a transformative shift. Yet the transformation is uneven: metropolitan and departmental pockets show progress while tribal and remote districts report persistent service and connectivity deficits. Stakeholders in remote, tribal, and low-income communities face limited connectivity, low digital literacy, and language barriers. These constraints erode expectations of universal access to ICT-enabled services and require targeted inclusion strategies (digital kiosks, localised training, offline/assisted channels) [17]. Odisha's 5T emphasis on performance metrics and centralised dashboards has accelerated results reporting, but critiques argue it risks over-centralisation and may constrain local adaptive governance. Striking a balance between statewide standards and local flexibility is important to satisfy both high-level performance expectations and grassroots realities.

### **5T Framework & e-Governance in Odisha.**

The state of Odisha has become a pioneering state in the Indian context when it comes to governance innovation through its 5T Framework, which was implemented by the Chief Minister, Naveen Patnaik. The 5Ts are Teamwork, Technology, Transparency, Time, resulting in Transformation. These pillars are the centre of the state policy on citizen-focused e-governance. The initiative was introduced in October 2019 and named Mo Sarkar (My Government) as a mechanism of citizen feedback to evaluate the services provided by the government offices, like hospitals and police stations. (Odisha Newsroom).

### **Basic Characteristics and Elements.**

The 5T model of governance focuses on ensuring that services to the citizens are delivered in a timely, transparent, and efficient manner. Within this model, the government departments are supposed to apply technology (ICT tools, dashboards, online portals, etc.), make sure that there is teamwork among the different departments, respect time constraints and make sure that there is accountability through receiving feedback and openness in processes.

### **Certain e-governance projects in the 5T umbrella.**

**Mo Sarkar Feedback System:** This is a system where the citizens visiting the government offices provide their mobile numbers, are sent a confirmation SMS, and then contacted later to give them feedback on the service experience. This is directly related to Transparency and Teamwork and makes the public servants accountable. (DIGITAL CSC)

Online Incentive Management System: an ICT product that enables entrepreneurs to place incentive applications through a portal that saves physical paperwork and enhances efficiency. This is categorised under Technology, Time, and Transformation. (Odisha Stand).

Standardised Website Framework (SWF): 30 district-wide websites with consistent and easy-to-use digital portals of the government services available to the citizens.

State Dashboard: A publicly available performance dashboard of government departments in terms of the 5T parameters. Citizens are able to see KPIs, progress of schemes, etc. This element upholds trans.

### **Influence, Obstacles, and Criticism.**

Government reports and media statements provide a positive response to the 5T framework: the quality of delivering services to the population has improved, more investments have been made, citizens trust in the government has increased, decision-making has become faster, and the governance in multiple industries, such as education, healthcare, infrastructure, and power, has become stronger. (The New Indian Express), Business Standard

However, challenges remain. A report by the Comptroller and Auditor General revealed anomalies and the absence of clear schedules in the school transformation in the 5T High School Transformation Programme. There was misuse of some of the facilities that were developed under the programme, procurement problems were reported, and in some instances, the project implementation was below expectations. (The Statesman)

### **Significance and Future Directions.**

The 5T model makes Odisha a role model of transformative governance in India. The main features that include people-centric feedback, ICT-based tools, integrated monitoring, and performance measurement are contributing to the shift of the public administration towards the citizens. Its significance is supported by the recommendation of such national organisations as NITI Aayog. (The New Indian Express)

In the future, these gains will only be maintained with an improved institutional capability, closer supervision of timeframes and timetables, making sure that technological implementations are accessible (digital literacy, access), and eliminating the gaps disclosed during audits. It will also be paramount to expand e-governance to more remote/rural locations as part of the 5T draft, close feedback loops, and ensure that the risk of corruption is reduced.

### **Methodology**

The research article on Stakeholder Expectation on the need to integrate ICT and 5T Framework on Transformative e-Governance in Odisha uses the mixed-method research design, whereby both qualitative and quantitative approaches are incorporated to help the researcher achieve a very thorough insight into the expectations of the stakeholders. The study mainly aims at learning how the incorporation of the Information and Communication Technology (ICT), as part of the 5T framework. The research design used is a descriptive and exploratory research design to determine the expectations of the stakeholders

### **Research Gaps**

Despite the fact that Odisha presents a good laboratory of 5T and ICT alignment, there are still

gaps in the empirical analysis. First, longitudinal impact assessments of the effect of rigorous and longitudinal shifts of the level of citizen satisfaction, and the level of service quality in relation to ICT and 5T in combination are scarce in relation to other districts. Second, a comparative analysis of the various states in India that have adopted different e-governance models would assist in isolating success factors that are context-specific. Third, there is a need to conduct more detailed studies of inclusion that would evaluate the experiences of tribal, women, elderly, and disabled citizens using e-governmental platforms. Finally, sustainability models (public financing and local governance) research would guide scale-up choices.

### Conceptual Model

The conceptual model shows that the stakeholder expectations, implementation process of ICT initiatives, and subsequent impact of the 5T framework of transformative e-governance in Odisha are interrelated.

### Conceptual Model

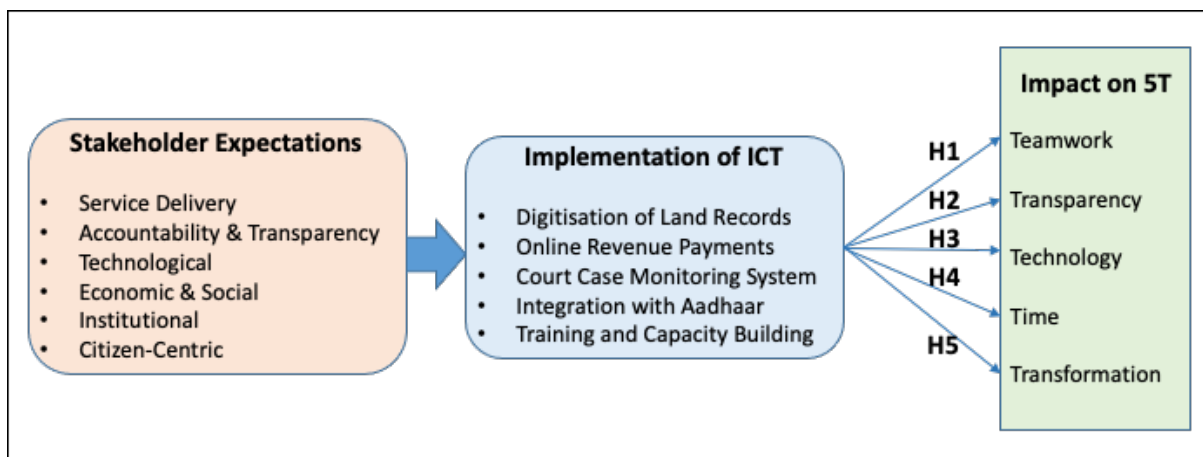


Figure 1: Conceptual Model of 5T Framework for Transformative e-Governance in Odisha.

The model rests on the assumption that the expectations of the stakeholders, including the citizens, the government employees, and the institutional actors, are the core force behind the digital transformation of governance. The expectations of the stakeholders include better service delivery, better accountability and transparency, technological efficiency, economic and social inclusiveness, building of institutional capacity, and citizen-focused governance. The Government of Odisha has responded to this pressure by developing a series of ICT-based projects, including digitisation of land records, revenue payment systems, monitoring of court cases, Aadhaar integration, and extensive training and capacity-building activities. These interventions of ICT are the mediating force between the expectations of the stakeholders and governance results. Effective implementation of ICT adds value to the actualisation of the five pillars of the 5T framework. According to the conceptual model lays out a rational trail where the expectation of the stakeholders is the transition of ICT, which subsequently catalyses the realisation of the 5T goals, and eventually results in a more participatory, transparent and citizen-focused system of governance in Odisha.

## Objective

To examine the role of ICT in enhancing e-Governance practices in Odisha.

To determine how well the 5T paradigm can be used to build a transparent, timely, and accountable government.

To assess the socio-economic impacts of ICT and 5T on citizens, namely, on the sphere of education and on public services.

## Hypotheses

H1: The perceived team performance among government departments significantly influences the expectations of the stakeholders for the ICT-driven Governance transformation.

H2: The degree of transparency that is guaranteed by ICT-enabling 5T practices has a positive effect on the satisfaction of the stakeholders with e-Governance initiatives.

H3: The use of advanced technology in the context of the 5T framework is highly correlated with the expectations of the stakeholders regarding the adoption of ICT in transformative e-Governance.

H4: The effective time management in the 5T framework has a strong association with expectations of the stakeholders in terms of integrating ICT to enable e-governance transformation.

H5: Transformative results of the 5T framework have a significant relationship with the expectations of the stakeholders on the integration of ICT to provide effective e-governance in Odisha.

## Data Collection

Structured questionnaires and interviews are used in the collection of primary data, which includes the key stakeholders of Odisha, like government officials & citizens, ICT professionals and the representatives of the local governance of the selected districts in Odisha. Stratified random sampling is used to have a representative of different administrative levels, such as the Revenue layer, the Panchayati Raj layer and the IT layer. The secondary data will be based on the government reports, policy papers, e-governance project reviews, and scholarly sources on digital transformation and governance reforms in India.

## Data Analysis and Demonstrated Hypotheses

Descriptive statistics and inferential tests, including ANOVA and regression analysis, are used to analyse quantitative data to identify the relationships between ICT implementation and stakeholder satisfaction, considering the 5T framework. Interpretative data from interviews are analysed thematically to get subtle views on technological adoption, service delivery, and capacity building of an institution. The paper also deploys a conceptual framework of the connection between stakeholder expectations, strategies of implementing ICT and their effects in the five dimensions of the 5T framework.

## Demonstrated Hypotheses (H1)

The above Table 1 shows the Mean value is 3.41570, SD is 1.12107. Table 2 shows the summary of fit statistics R<sup>2</sup> value is 0.7919, the adjusted R<sup>2</sup> is 0.5837, and the standard error is 1.0597. The ANOVA test Table 3 shows the F value is 5.012, and the P value is 0.000, which is less than 0.05

significant. So, it can prove that the Null hypothesis (H2o) is rejected and the alternative hypothesis (H2a) is accepted. That means the team of the 5T Framework plays a critical role towards achieving stakeholder expectations in transformational e-governance. It has a highly qualified and committed team that facilitates efficient implementation, coordination, and tracking of ICT-initiated initiatives within the departments. Teamwork enhances collaboration, innovative and accountable practices, enabling a smooth process of delivering citizen-focused services and paving the way towards a culture of efficiency and shared responsibility in governance.

Table 1: Descriptive Statistics of Hypothesis (H1)

	5T1
Count	522
Mean	3.41570
Std. Deviation	1.12107
Minimum	1
Maximum	5

Table 2: Summary of Fit Statistics of Hypothesis (H1)

Summary of Fit Statistics	
R Square	0.7919
Adjusted R Square	0.5837
Standard Error	1.0597
Observations	522

### ANOVA TEST

Table 3: ANOVA Table of Hypothesis (H1)

ANOVA TEST OF H1					
Source of Variation	Sum of Squares	df	Mean Square	F	P-value
Between Groups	7.495	5	1.499	5.012	0.000
Within Groups	934.955	3126	0.299		
Total	942.449	3131			

### Demonstrated Hypotheses (H2)

Table 4: Descriptive Statistics of Hypothesis (H2)

	5T2
Count	522
Mean	3.5498
Std. Deviation	1.12995
Minimum	1
Maximum	5

Table 5: Summary of Fit Statistics of Hypothesis (H2)

Summary of Fit Statistics	
R Square	0.6602
Adjusted R Square	0.3204
Standard Error	1.0644
Observations	522

**ANOVA TEST**

Table 6: ANOVA Table of Hypothesis (H2)

ANOVA TEST OF H2					
Source of Variation	Sum of Squares	df	Mean Square	F	P-value
Between Groups	8.369	5	1.674	6.192	0.000
Within Groups	844.955	3126	0.270		
Total	853.323	3131			

The above Table 4 shows the Mean value is 3.5498, and the SD is 1.12995. Table 5 shows the summary of fit statistics R2 value is 0.6602, the adjusted R2 is 0.3204, and the standard error is 1.0644. The ANOVA test Table 6 shows the F value is 6.192, and the P value is 0.000, which is less than 0.05 significant. So, it can prove that the Null hypothesis (H2o) is rejected and the alternative hypothesis (H2a) is accepted. That means, Transparency is also one of the key factors that will meet the expectations of the stakeholders in the context of the integration of ICT and the 5T Framework of transformative e-governance in Odisha. It makes the government accountable, trustworthy, and transparent through opening citizens to information via digital opportunities. Open governance can make people more active, reduce corruption, and increase trust in the institutions, which contributes to a more effective and people-oriented administration.

**Demonstrated Hypotheses (H3)**

Table 7: Descriptive Statistics of Hypothesis (H3)

	5T3
Count	522
Mean	3.5881
Std. Deviation	1.1139
Minimum	1
Maximum	5

Table 8: Summary of Fit Statistics of Hypothesis (H3)

Summary of Fit Statistics	
R Square	0.8626
Adjusted R Square	0.7252
Standard Error	1.0547
Observations	522

**ANOVA TEST**

Table 9: ANOVA Table of Hypothesis (H3)

ANOVA TEST OF H3					
Source of Variation	Sum of Squares	df	Mean Square	F	P-value
Between Groups	8.5354	5	1.707	6.463	0.000
Within Groups	825.703	3126	0.264		
Total	834.238	3131			

The above Table 7 shows the Mean value is 3.5881, and the Standard Deviation is 1.1139. Table 8 shows the summary of fit statistics R2 value is 0.8626, the adjusted R2 is 0.7252, and the standard error is 1.0547. The ANOVA test (Table 9) shows that the F value is 6.436, and the P value is 0.000, which is less than 0.05, indicating significance. So, it can prove that the Null hypothesis (H3o) is rejected and the alternative hypothesis (H3a) is accepted. That means, the 5T framework of Odisha is supported by technology, where transparency, efficiency, and accountability in governance are realised. By incorporating ICT tools like digital portals, mobile apps, and real-time data systems, the state has facilitated the service delivery process and engagement with the citizens. Projects such as Mo Sarkar, e-Abhijoga and Odisha One are some examples of how technology can enable administrators and citizens to communicate with one another without any problems. Through the use of modern technologies, Odisha is planning to make governance more responsive, inclusive, and data-oriented, and more in line with the changing expectations of stakeholders.

**Demonstrated Hypotheses (H4)**

Table 10: Descriptive Statistics of Hypothesis (H4)

5T4	
Count	522
Mean	3.4559
Std. Deviation	1.0709
Minimum	1
Maximum	5

Table 11: Summary of Fit Statistics of Hypothesis (H4)

Summary of Fit Statistics	
R Square	0.8806
Adjusted R Squar	0.7612
Standard Error	1.0353
Observations	522

**ANOVA TEST**

Table 12: ANOVA Table of Hypothesis (H4)

ANOVA TEST OF H4					
Source of Variation	Sum of Squares	df	Mean Square	F	P-value
Between Groups	8.727	5	1.745	5.894	0.000
Within Groups	925.703	3126	0.296		
Total	934.430	3131			

The above Table 10 shows the Mean value is 3.4559, and the Standard Deviation is 1.0709. Table 11 shows the summary of fit statistics R2 value is 0.8806, the adjusted R2 is 0.7612, and the standard error is 1.0353. The ANOVA test (Table 12) shows that the F value is 5.894, and the P value is 0.000, which is less than 0.05, indicating significance. So, it can prove that the Null hypothesis (H4o) is rejected and the alternative hypothesis (H4a) is accepted. That means the time factor is an important element of the 5T framework, which focuses on timely decision-making and delivery of services in a timely fashion through ICT-based governance. The incorporation of online systems and capabilities has dramatically cut down on administrative delays, which have guaranteed a quicker redressal of grievances and smooth running of government schemes. The government increases accountability and responsiveness by encouraging real-time monitoring and automated processes. The efficient utilisation of time can be considered as one of the indicators of governance effectiveness and public satisfaction with the Odisha transformative model of e-Governance by stakeholders.

**Demonstrated Hypotheses (H5)**

Table 13: Descriptive Statistics of Hypothesis (H5)

	5T5
Count	522
Mean	3.5421
Std. Deviation	1.1438
Minimum	1
Maximum	5

Table 14: Summary of Fit Statistics of Hypothesis (H5)

Summary of Fit Statistics	
R Square	0.6911
Adjusted R Square	0.3822
Standard Error	1.0677
Observations	522

ANOVA TEST

Table 15: ANOVA Table of Hypothesis (H5)

ANOVA TEST OF H5					
Source of Variation	Sum of Squares	df	Mean Square	F	P-value
Between Groups	9.65	5	1.930	6.280	0.000
Within Groups	960.703	3126	0.307		
Total	970.353	3131			

The above Table 13 shows the Mean value is 3.5421, and the Standard Deviation is 1.1438. Table 14 shows the summary of fit statistics R2 value is 0.6911, the adjusted R2 is 0.3822, and the standard error is 1.0677. The ANOVA test (Table 15) shows that the F value is 6.280, and the P

value is 0.000, which is less than 0.05, indicating significance. So, it can prove that the Null hypothesis (H5o) is rejected and the alternative hypothesis (H5a) is accepted. That means, the last objective of the 5T framework used in Odisha is transformation, which will result in the change of the old bureaucracies towards a transparent and technology-driven mode of governance. With the incorporation of ICT, the public administration in Odisha has evolved to be citizen-centred, efficient and data-informed. Digital innovations have given citizens more accessible services and increased confidence in the process of government. Such a change is based on the expectations of the stakeholders of the inclusive development, better accountability and sustainability of the results of the governance in the state.

#### Conclusion

The stakeholder demands of ICT in e-governance are in the form of increased speed, transparency, and accessibility of services, which are in line with the 5T agenda of Odisha. The policy-oriented instruments (IT Policy 2022) and practice-oriented programmes (Mo Sarkar, e-Abhijoga, revenue digitisation) of Odisha demonstrate the serious intention of taking advantage of technological application in governance transformation. Empirical statistics show that there is a significant improvement in certain areas (financial management, land records, grievance tracking) with varying results based on geography, departmental capacity, and infrastructure. To realise the entire potential of 5T, it is important to consider inclusion, institutional commitment, process redesign, and vigilance in order to make sure technology is used to meet expectations of the stakeholders, and not to create new digital processes. New studies with rigorous, district-level impact assessment and inclusion assessment will be essential to generalising lessons and informing policy improvement.

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