



LEVERAGING DIGITAL GOVERNANCE FOR INCLUSIVE ECONOMIC GROWTH: GST REFORMS AND FISCAL FEDERALISM IN TAMIL NADU

Editors

Dr. A. Anandhiprabha

Dr. M. Jeeva

Ms. A. Gomathi

Dr. S. Mahalakshmi

Volume - I



A One Day National Seminar on

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LEVERAGING DIGITAL GOVERNANCE FOR INCLUSIVE ECONOMIC GROWTH: GST REFORMS AND FISCAL FEDERALISM IN TAMIL NADU

Volume I

© **Dr. A. Anandhiprabha**
Dr. M. Jeeva
Ms. A. Gomathi
Dr. S. Mahalakshmi

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PREFACE

The rapid advancement of digital technologies has transformed the way governments design and implement public policies, particularly in the field of taxation and economic governance. In India, the introduction of the Goods and Services Tax (GST) represents one of the most significant fiscal reforms aimed at creating a unified national market and improving transparency in tax administration. Supported by digital infrastructure such as the Goods and Services Tax Network, GST has strengthened compliance mechanisms, enhanced revenue efficiency, and promoted cooperative fiscal relations between the Centre and the States. These digital governance initiatives contribute significantly to inclusive economic growth, ease of doing business, and evidence-based policymaking in India.

The concept of fiscal federalism has also gained renewed importance in the post-GST era, as it reshapes the financial relationship between the Union and State governments. The functioning of the GST Council plays a vital role in ensuring cooperative decision-making and maintaining fiscal balance among the states. In this context, digital governance tools such as e-invoicing, automated compliance systems, and data analytics have enhanced accountability and transparency while addressing challenges related to tax evasion, revenue sharing, and administrative efficiency.

This edited volume is a compilation of research papers presented by eminent scholars, academicians, and research scholars at the ICSSR-SRC Sponsored One Day National Seminar on “Leveraging Digital Governance for Inclusive Economic Growth: GST Reforms and Fiscal Federalism in Tamil Nadu”, organized by the Department of Commerce - Banking and Insurance, NGM College. The seminar served as an academic platform for intellectual exchange on the evolving role of digital governance in tax reforms, economic inclusiveness, and policy innovation.

We express our sincere gratitude to the Indian Council of Social Science Research – Southern Regional Centre, Hyderabad, under the Ministry of Education, for sponsoring and supporting the successful organization of this national seminar. We also extend our heartfelt thanks to the distinguished resource persons, contributors, academicians, and participants whose valuable insights and scholarly contributions have enriched this volume.

We hope that this book will serve as a meaningful academic resource for researchers, policymakers, students, and industry professionals interested in understanding the intersection of digital governance, GST reforms, and fiscal federalism in promoting sustainable and inclusive economic development.

Seminar Convenor

Dr. A. Anandhiprabha

Assistant Professor

Department of Commerce - Banking and Insurance

NGM College, Pollachi

Organising Secretary

Dr. M. Jeeva

Associate Professor & Head,

Department of Commerce - Banking and Insurance

NGM College, Pollachi

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TECHNOLOGY-ENABLED TRANSPARENCY AND ANTI-EVASION MECHANISMS



Dr. P.V. Nandhini

M.Com., M.Phil., Ph.D., NET

Assistant Professor, UG Department of B.Com CA

NGM College, Pollachi

Mail Id: pvnandhini8@gmail.com

Abstract

The accelerating integration of digital technologies into governance, finance and regulatory systems has transformed the pursuit of transparency and accountability. Thus, the technology enabled transparency refers to the deployment of tools such as blockchain, artificial intelligence and open data platforms to create immutable records, automated reporting and provide real-time visibility into institutional processes. Thus, these innovations reduce information, asymmetry, empower stakeholders and strengthen public trust by ensuring that financial flows, procurement activities and compliance procedures are traceable and verifiable. The rapid digital transformation of governance system has fundamentally reshaped the global landscape of transparency, accountability and regulatory compliance. These technologies create verifiable, traceable and tamper-proof information ecosystems that significantly reduce discretionary loopholes, corruption opportunities and manual manipulation. Thus, through digital record-keeping, automated audit trails and interoperable information system, governments can monitor complex financial, environmental and administrative activities in real time. Block chain provides us with immutable, decentralized ledgers that prevent data alteration, while AI-driven anomaly detection identifies hidden patterns of evasion and fraud with greater accuracy than traditional inspection methods.

Keywords: Tax evasion, Digitalization, Automation.

Introduction

In digital era due to increase in complexity of economic transactions and administrative systems has lead to new challenges for transparency, accountability and so on. Most probably the traditional governance mechanisms often rely on manual processes, fragmented record-keeping and limited monitoring capacity that can create opportunities for tax evasion, corruption, financial fraud and regulatory violations. The economies become more interconnected and data-driven, governments and institutions are increasingly adopting advanced technologies to enhance transparency and strengthen the mechanisms. Technology-enabled transparency refers to the use of digital tools such as artificial intelligence, blockchain, big data analytics, digital identity systems, and electronic transaction platforms to ensure that information is accessible, verifiable, and traceable. These technological innovations allow authorities to monitor transactions in real time, detect irregularities, and reduce discretionary decision-making that may lead to misuse of resources.

For decades, governments across the world struggled with the "shadow economy," where informal transactions and sophisticated offshore maneuvers led to massive revenue leakages. However, the emergence of **Technology-Enabled Transparency (TET)** has shifted the power dynamic from tax evaders to regulatory authorities. By leveraging high-speed data processing, distributed ledger technology, and real-time monitoring systems, tax administrations are now able to create a "glass-pipe" economy where financial flows are visible, traceable, and verifiable. This transition is not merely about increasing tax collection; it is about building a fair social contract where every economic participant contributes their legitimate share toward national development. The global fiscal landscape in 2026 has been fundamentally reshaped by the rapid integration of advanced technologies designed to combat financial opacity and tax evasion.

One of the most revolutionary technological interventions in recent years is the implementation of **Blockchain and Distributed Ledger Technology (DLT)** for real-time reporting. Traditional accounting systems were prone to "double-entry" manipulation, where different sets of books were maintained for internal and external purposes. Blockchain solves this by providing a single, immutable source of truth. Every transaction recorded on a blockchain is timestamped, encrypted, and linked to the previous entry, making it impossible to alter records retroactively without detection. For Value Added Tax (VAT) and Goods and Services Tax (GST) systems, blockchain-enabled smart contracts can automatically calculate and remit taxes at the point of sale, virtually eliminating the possibility of "missing trader" fraud or carousel fraud that has historically plagued industrial supply chains.

The concept of **Electronic Invoicing (E-invoicing) and Real-time Reporting (RTR)** has become the backbone of transparency in the manufacturing and services sectors. Countries like India, with the GSTN (GST Network), have mandated that invoices be generated through a centralized portal. This ensures that the tax authorities receive data the moment a transaction occurs, leaving no room for "post-facto" adjustments or fake invoice generation. E-invoicing creates an automated audit trail that links the buyer and the seller in a digital handshake. This transparency not only prevents evasion but also simplifies compliance for honest businesses by pre-filling tax returns and accelerating input tax credit (ITC) claims, thereby improving the overall "ease of doing business."

Furthermore, the rise of **Digital Payment Ecosystems** has dealt a severe blow to the "cash-is-king" culture that historically facilitated tax evasion. The mass adoption of UPI (Unified Payments Interface), digital wallets, and central bank digital currencies (CBDCs) has moved transactions from the invisible realm of cash into a searchable digital database. When a transaction is digital, it leaves a "breadcrumb trail" that can be easily audited. Governments are increasingly using this data to map the informal sector, bringing millions of small-scale vendors and service providers into the formal tax net. This shift to a "less-cash" economy is perhaps the most effective anti-evasion mechanism, as it removes the anonymity that is the primary requirement for financial misconduct.

Key Factors

1. Real-Time Data Integration and Reporting

Traditional tax systems relied on "post-event" reporting, where data reached authorities months after a transaction. Modern transparency mechanisms use Real-time Reporting (RTR) to capture data the second a sale or transfer happens. This eliminates the "time window" that evaders used to manipulate books or disappear. By integrating E-invoicing with tax portals, authorities can see the economic heartbeat of the nation in real-time, making it impossible to hide large-scale transactions.

2. AI-Driven Predictive Analytics

Artificial Intelligence acts as a digital watchdog by scanning massive datasets to find patterns of fraud. Instead of manual audits, Machine Learning algorithms compare a taxpayer's declared income against their actual spending, bank flows, and social media footprints. If the system finds a "mismatch," it automatically flags the account for investigation. This predictive power helps in identifying tax "leakages" before they become massive losses for the government.

3. Blockchain for Immutable Audit Trails

Blockchain technology creates a "digital ledger" that cannot be edited or deleted once a transaction is recorded. This immutability ensures that businesses cannot maintain two sets of books—one for themselves and one for the tax office. For high-value goods like gold, diamonds, or luxury cars, blockchain tracks the entire supply chain from origin to sale. This transparency ensures that every hand-off is taxed correctly and no "middle-man" evasion occurs.

4. Digital Payment Ecosystems (Less-Cash Economy)

The shift from physical cash to digital payments (UPI, Wallets, CBDCs) is the biggest enemy of the shadow economy. Cash transactions are anonymous and easy to hide, but digital payments leave a permanent electronic breadcrumb trail. When the economy becomes "less-cash," every rupee spent is recorded in a searchable database. This allows tax departments to easily map the income of even small-scale vendors, bringing the informal sector into the formal tax net.

5. Biometric and Geo-spatial Verification

To prevent "ghost companies" (shell companies that only exist on paper), technology now uses Biometric ID (Aadhaar/Bio-scans) and Geo-tagging. Authorities can now verify if a factory or office physically exists using satellite imagery and GPS coordinates. Linking business registrations to the biometric identity of owners ensures that individuals cannot hide behind multiple fake corporate identities to launder money or evade taxes.

6. Automated Cross-Border Information Exchange

Tax evasion often involves hiding money in offshore "tax havens." Modern anti-evasion relies on Automatic Exchange of Information (AEOI), where countries share financial data through secure, encrypted digital pipelines. Technology allows for the seamless transfer of data regarding bank accounts, property holdings, and investments of non-residents back to their home countries. This global digital network has made the world much smaller for tax evaders, as there are fewer "dark corners" left to hide assets.

Challenges in Implementing Technology-Enabled Transparency

1. Data Privacy and Cybersecurity Vulnerabilities:

As tax authorities collect vast amounts of sensitive financial and personal data, they become primary targets for sophisticated cyber-attacks. A single data breach could lead to catastrophic identity theft and corporate espionage, eroding public trust in the digital fiscal system. Balancing the need for "Total Transparency" with the fundamental "Right to Privacy" remains a complex legal and ethical struggle.

2. Prohibitive Implementation and Compliance Costs :

The deployment of advanced systems like Blockchain, AI, and Satellite-based monitoring requires massive initial capital investment from the government. Simultaneously, small and medium enterprises (MSMEs) often struggle with the recurring costs of software subscriptions, digital hardware, and hiring specialized staff to manage real-time compliance, leading to resistance at the grassroots level.

3. The Persistence of the Digital Divide :

For technology-enabled mechanisms to be effective, high-speed internet and consistent power supply are mandatory. In many developing regions, infrastructure gaps create a "Digital Divide," where rural businesses find it difficult to comply with real-time digital mandates. This lack of universal connectivity prevents the anti-evasion system from reaching its full potential.

4. Algorithmic Bias and Risk

Of False Positives AI and Machine Learning systems are only as good as the data they are trained on. There is a persistent risk of "Algorithmic Bias," where an honest taxpayer might be flagged as a fraudster due to unusual but legitimate transaction patterns. These "False Positives" can lead to unnecessary harassment by tax departments, causing significant distress to law-abiding citizens.

5. Evolution of Sophisticated "Tech-Savvy" Evasion:

As regulators upgrade their technology, tax evaders are adopting even more complex methods like "Crypto-tumbling," Privacy Coins, and Decentralized Finance (DeFi) to mask transaction trails. This constant "Cat and Mouse" game requires authorities to be in a state of

perpetual innovation, as evaders exploit the anonymity of the deep web and unregulated digital assets.

6. Legal Ambiguity and Jurisdictional Hurdles :

Technology operates beyond borders, but laws are confined to national jurisdictions. There is currently no global consensus on how to tax cross-border digital assets or how to handle "Data Localization" versus "Global Information Exchange." These legal loopholes allow multinational entities to shift profits to low-tax jurisdictions using complex digital maneuvers.

Conclusion

The shift toward technology-enabled transparency marks a point of no return in global fiscal history. By integrating Artificial Intelligence, Blockchain, and Real-time Reporting, governments are effectively closing the curtains on the era of financial opacity. While the challenges—ranging from cybersecurity risks to the digital divide—are significant, they are not insurmountable. The ultimate goal of these mechanisms is to foster a "Culture of Voluntary Compliance," where the cost and risk of evasion far outweigh its benefits. As we move further into the decade, the success of these anti-evasion tools will be measured not just by the increase in tax revenue, but by the creation of a fairer, more transparent economic environment where every citizen contributes their equitable share to national progress.