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EFFECTIVENESS OF INFORMATION TECHNOLOGY ON TAX ADMINISTRATION IN INDIA

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I.   ABSTRACT

The integration of Information Technology (IT) in tax administration has emerged as a pivotal factor in enhancing the efficiency, transparency, and compliance of tax systems worldwide. This paper examines the effectiveness of IT in the Indian tax administration framework, exploring its historical evolution, recent advancements, and the impact of digital initiatives such as e-filing, the Goods and Services Tax Network (GSTN), and data analytics. The study highlights significant improvements in taxpayer services, accuracy in data reporting, and the overall efficiency of tax collection processes. However, it also identifies critical challenges, including infrastructure gaps, cybersecurity risks, and resistance to technological adoption among taxpayers and officials. Comparative analyses of tax systems in developed countries reveal valuable lessons for India, particularly in leveraging emerging technologies like artificial intelligence and blockchain. Policy recommendations focus on enhancing digital infrastructure, investing in cybersecurity, and fostering a culture of technological adoption among stakeholders. The findings emphasize the need for continuous improvement and innovation in IT systems to achieve a more effective and equitable tax administration in India, ultimately contributing to better compliance and enhanced government revenue.

II.   KEYWORDS

Information Technology (IT) in Tax Administration, Goods and Services Tax Network (GSTN), AI and Blockchain in Tax Systems, Comparative Tax Systems.

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III. INTRODUCTION

A. Overview of Tax Administration in India

Tax administration in India has seen over the decades one sea change of transformation. It shaped the fiscal policies of the country and shaped the economic growth of the country. The Indian system of taxation is broadly categorized into direct and indirect taxes. The direct taxes include income tax, corporate tax, and wealth tax wherein the liability lies directly on an individual or an entity. Direct taxes include Goods and Services Tax (GST), customs duty, and excise duty, levied on both goods and services and ultimately bearable by consumers.[2].

Indian tax systems have traditionally been very centralized but are currently witnessing significant reforms after the 1990s and more recently with the evolution of GST in 2017, which merged all different taxes at multiple levels into a single unified tax system. The Indian tax administration system is steered by both the Central Board of Direct Taxes (CBDT) and the Central Board of Indirect Tax. Provides a comprehensive overview of the Indian tax administration system and emphasizes the significance of IT in enhancing its effectiveness.

However, the concluding paragraph could elaborate further on how adopting an administrative perspective contributes to a more holistic understanding of GST. Specifically, the analysis might uncover key insights into operational challenges, the balance between taxpayer rights and administrative efficiency, and the implications of judicial rulings on policy implementation.

B. Role of Information Technology

The role of Information Technology in modernizing the public sector governance has been revolutionizing; it has been most significant in the tax administration. It has enabled the government to create systems that have been efficient, transparent, and

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[2] Taxguru, "How Technology Transforms Tax Administration & Compliance in India," (2024) available at: https://taxguru.in/income-tax/technology-tax-administration-compliance.html

taxpayer-friendly[3]. Electronic filing systems, digital tax payments, and automated refunds have not only generated administrative cost savings but also ensured higher compliance rates.

The Goods and Services Tax Network and the newly introduced income-tax e-filing portal, for instance, have given this exercise a new dimension by putting many processes into motion that were earlier cumbersome and prone to delay. These now allow the tax authorities to trace transactions in real-time, cut down on tax evasion, and thus serve citizens better. The opportunities provided by data analytics and AI tools further boosted the capacity of tax authorities to detect anomalies and close compliance gaps.

The literature review effectively outlines the key concepts, theories, and previous research pertinent to the topic, providing a solid context for the current study. To further bolster the theoretical foundation, consider including additional specific examples of how the *Technology Acceptance Model (TAM)* and the *DeLone and McLean IS Success Model* have been applied in IT adoption research, particularly within tax administration. For instance, studies examining taxpayer behavior in adopting e-filing systems using TAM, or evaluations of GSTN system success via the IS Success Model, can provide valuable insights.

The research gaps are identified well, especially the limited focus on the challenges faced by SMEs, the digital divide in IT adoption, and administrative inefficiencies. These gaps effectively underscore the need for this study and frame its potential contributions. However, it is recommended to add citations for some key arguments, such as:

- "Studies emphasize large-scale IT projects such as GSTN and e-filing."

- "The existing body of research on the digital divide is limited."

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[3] Fortune India, "Digitalisation and AI in Tax Compliance," (2024) available at: https://www.fortuneindia.com/business/digitalization-and-ai-tax-compliance-2024

C. Purposes and Scope of the Study

It is for this reason that the study of the effectiveness of Information Technology in tax administration is highly pertinent because it represents the point of convergence of public policy, governance, and technological innovation. In this paper, we explore how IT has recast India's tax system to make it more transparent, efficient, and compliant. The study will assess the pros and cons of IT integration based on the impacts of various technological interventions, such as e-filing, GSTN, and digital interfaces between taxpayers and authorities.

Apart from the above-mentioned scope points, the researcher will particularly observe the following: reduction of human interference with tax administration, curtailed opportunities for tax evasion, high taxpayer satisfaction, and even administrative efficiency. This way, the research aims to shed light on how other governance sectors may implement similar technological reforms and where taxpayers' administration systems need improvement.

IV.   LITERATURE REVIEW

A. Previous Research on IT in Tax Administration

Information Technology in tax administration has been the subject of research for many all over the world. Innovations in IT stand out as facets that have smoothened tax collection, improved compliance, and enhanced satisfaction among taxpayers.[4], according to researchers anywhere in the world. For instance, implementations that were done in the United States, and Australia, among other European countries, showed how electronic filing systems, and data analytics, among others, had improved the effectiveness of tax administrations.

In India, IT increasingly has been used to affect tax reforms, especially after the introduction of e-filing for income taxes and the Goods and Services Tax Network.[5], scholars have documented how such IT-driven reforms have improved tax

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[4] "Global Trends in E-Taxation: A Comparative Study of Best Practices," Journal of Tax Policy and Administration (2020) vol 14

[5] Bhushan D, "Impact of IT on Tax Compliance in India: A Case Study of GST" (2019) Tax Law Review

compliance, reduced processing time, and minimized human errors in administrative processes. TAM and the DeLone and McLean model of Information Systems success are good working models for attempting to track the efficiency of IT in public administrations, in view of parameters such as user satisfaction, usability, and system efficiency.

While obviously useful to our knowledge base, we also rely heavily on India-specific studies, given the rapidly growing realization that some very particular factors, such as an enormous informal economy and the sheer size of the tax base, present unique pressures and opportunities for IT adoption. As evidence, the implementation of GST and the creation of a single digital interface for tax reporting are counted among India's greatest success stories for tax administration. It also raised concerns for its accessibility by small businesses, particularly in rural areas, and the persistent plight in availing data security and privacy in a digitized environment.

B. Concepts and Theories

Theories of e-governance and IT adoption in public administration serve as the conceptual background for the impact of technology on tax systems. E-governance is regarded as the upgrading of governmental operations, improving service delivery, and citizen involvement with the aid of digital technologies. Among theories, the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) are the most applied theories when conducting a review of how public officials and taxpayers embrace and use new IT systems.[6].

Other models include Perceived Usefulness, Ease of Use, and social and organizational factors in influencing the adoption of technology. Others are the Delone and McLean Model, which measures the success of information systems through indicators like system quality, user satisfaction, and net benefits, to mention a few, used in assessing IT initiatives in tax administrations.[7].

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[6] Venkatesh V, Morris MG, Davis GB, Davis FD, "User Acceptance of Information Technology: Toward a Unified View" (2003) MIS Quarterly

[7] DeLone WH, McLean ER, "The DeLone and McLean Model of Information Systems Success: A Ten-Year Update" (2003) Journal of Management Information Systems

Models of tax compliance also give essential insights into the contributions of IT towards voluntary compliance. For example, the Allingham-Sandmo Model lets inform on how tax evasion is tied to penalties and detection in order to illustrate that both monitoring and data transparency within IT can reduce evasion. Equally, theories in behavioral economics argue that IT systems that make a particular tax procedure easy and increase the level of trust in institutions trigger voluntary compliance by the taxpayer.

C. Literature Gap

Although quite significant literature is available on the benefits of IT in tax administration, several gaps exist in this regard, especially for the Indian scenario. Many of the extant studies emphasize large-scale IT projects such as GSTN and e-filing and miss analyzing with minute details what are the specific issues of SMEs with regard to these systems.[8]. In addition, the existing body of research on the digital divide is also very limited, especially regarding the interface between IT systems and rural taxpayers and the lesser tech-savvy populations.

Finally, whereas the literature has extensively discussed the kinds of efficiency gains brought about by IT, it paid less attention to understanding how the adoption of IT in the tax system of India may have an impact on long-run tax compliance behaviors. Many questions regarding the effectiveness of IT in anti-tax evasion activities, especially in regard to the informal sector, are still pending a response.

Moreover, there is a near gap in the literature concerning the administrative perspective - how IT adoption impacts tax officers' ability and the general capacity of tax departments. Most studies focus on taxpayer satisfaction and compliance, while research-based studies on internal challenges like staff training, system maintenance, and issues of integration between old and new technologies available in tax departments are fewer. This opportunity thus presents future research avenues that

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[8] Singh S and Agarwal R, "SMEs and Digitalisation: A Study on Challenges in India's Tax Administration" (2020) Indian Journal of Public Policy

would provide a more wholesome understanding of IT's role in modernizing the tax administration system for India.

V. EVOLUTION OF INFORMATION TECHNOLOGY IN INDIAN TAX ADMINISTRATION

A. Early Adopter

The early 1990s were the starting point of the adoption of IT by Indian tax administrations within the framework of the first phase of modernization in the public sector. Computers and automation helped the government of India manage the increasing complexity of tax data; therefore, the country introduced IT systems gradually for storing and processing this data. This period has significant efforts in "computerizing" simple tasks such as record-keeping and tax assessment, and even communication between tax authorities.

Major efforts for this period focused on "computerizing" simple tasks, including record-keeping, tax assessment, and communication between tax authorities. The most instrumental in using computers to mechanize the manual processes which were time-consuming, and prone to error due to human error, were the Central Board of Direct Taxes and the Central Board of Indirect Taxes and Customs. However, such initial measures lacked a comprehensive approach as tax-related procedures were still largely labor-intensive with infrequent interfaces between taxpayers and technology.[9]
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The section provides a comprehensive historical overview of IT adoption in Indian tax administration, effectively covering both the early phase and recent innovations. To enrich the narrative, consider adding specific examples or mini-case studies of early computerization efforts by **CBDT** and **CBIC** in the 1990s.

For instance, highlight which specific functions were automated, such as the digitization of taxpayer records, automated processing of tax returns, or the

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[9] Jha, R. and Singh, R., 'Impact of Information Technology on Tax Administration: A Case Study of India' (2019) 5 *Indian Journal of Public Policy* 34-48.

introduction of computer-aided selection for scrutiny. These examples would illustrate the foundational steps toward modernization.

The part on recent innovations could be further strengthened with up-to-date statistics, such as:

- The year-on-year growth in e-filing adoption rates.

- The current number of registered taxpayers on the **GSTN portal** and their compliance trends.

- Improvements in tax collection efficiency attributable to IT adoption.

While the explanation of **PAN-Aadhaar linkage** is detailed, the section could benefit from a more elaborate discussion on the functionalities and benefits of the **Tax Information Network (TIN)**. For example:

- Its role in consolidating and validating data from various tax filings.

- How TIN facilitates streamlined tax deduction and collection at source (TDS/TCS) processes.

- Its impact on reducing tax evasion and enhancing transparency.

VI.   RECENT INNOVATIONS

A. Direct Taxes (Income Tax e-Filing)

The real overhaul of Indian tax governance started only in the early 2000s with the launch of the e-filing system for income tax returns. This was the beginning shift from paper-based filing to a digital interface; hence, it made it easy for people and organizations to file their tax returns through the online portal introduced by the Income Tax Department in 2006, which has been very successfully adopted in successive years.

It enabled the facility of online payment, tracking of refunds, and even interaction with tax authorities through electronic means. E-filing has significantly reduced the time taken for processing returns and issuing refunds and thus greatly improved the efficiency of tax administration. It has also considerably reduced corruption and

increased transparency by ensuring that human interaction in the tax process is minimized, making the system relatively taxpayer-friendly.

B. Goods and Services Tax (GST)

Perhaps the most significant recent development in Indian tax administration was the roll-out of GST in July 2017, subsuming multiple indirect taxes into a single, nationwide tax. The basis of this reform was GSTN (Goods and Services Tax Network), an exclusive digital platform for performing all registration, filing, payment, and return processes concerning GST. The role of the GSTN is quite crucial, considering that they have ensured that there is efficient provision for tax information flowing between the government and businesses in India.

This offers real-time tracking of transactions, and compliance through automation, and also provides the leeway for business input tax credits with ease. Thus, the authorities will access broad data that will help them scan for tax evasion and bring a better form of revenue collection. Besides simplifying indirect taxation, the digitalization of GST processes makes available a sound structure for efficient tax administration.[10].

C. Other Measures

In addition to e-filing and GSTN, several other IT-based initiatives are contributing to modernizing the tax administration of India. The permanent account number (PAN) can be mentioned as an important identity number of all taxpayers in the Indian context. The government can track all their financial transactions with this PAN number and can be held accountable.

The creation of the Tax Information Network further solidified the process by actually enabling the collection, processing, and monitoring of the payment of taxes. Indeed, such systems have, in fact, been vital to the successful reduction of tax evasion and broadening the tax base through the linking of various financial activities into one framework. In the recent past, linking Aadhaar with PAN was one of the most

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[10] Goods and Services Tax Network (GSTN), 'Understanding GSTN' (2017) https://www.gstn.org.in

prominent steps to improve the transparency and ease with which the tax system functions.

The aim behind it was solely the determent of tax fraud and duplicate PAN cards so that this time, with Aadhaar integrated into PAN cards, taxpayers' identification became more complete. Tax authorities now have an improved database to monitor genuine taxpayers and further improve compliance. All of these IT initiatives combined have made tax administration in India pivot around the corner towards transparency, accountability, and access by the people.[11].

VII. IMPACT OF IT ON THE EFFICIENCY OF TAX ADMINISTRATION

A. Filing and Payment Procedures

The online systems have immensely changed the filing and payment procedures for tax administration in India. This is of general benefit both to taxpayers and the department. Earlier, the abstruse and paper-based procedure of filing income tax returns and Goods and Services Tax Network (GSTN) has become streamlined through e-filing. Now, with much reduced time and effort, taxpayers can get their returns filed from the comfort of their homes or offices.

The web filing platform guides step-by-step, uses auto-fill features, has real-time validation, and hence, decreases the probability of error in filing.[12]. For the tax department, this shift has streamlined the collection of taxes, quickened the processing of data, and improved the tracking of compliance. The automation of these processes has also eradicated a good percentage of human meddling, thus eliminating channels of corruption and increasing people's confidence in the tax system.

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[11] Government of India, 'Linking of Aadhaar with PAN for Tax Purposes' (2020) https://www.incometax.gov.in/aadhaar-pan-link
[12] Kaur, R. and Kumar, S., 'Impact of E-Governance on Tax Administration in India' (2020) *Journal of Public Affairs* 20(3) 1-12.

B. Data Accuracy and Transparency

One of the overall advantages of integrating IT in tax administration is the improvement in data accuracy and transparency. Automation, along with processing real-time data, reduced errors, frauds, and manipulations common in traditional manual systems of tax filing. For instance, an integrated system like PAN and GSTN which provides Aadhar-PAN linking gives the Government an error-free database of taxpayers where duplicity is eliminated and brings accountability into the taxpayers' activities.[13].

Additionally, the crosschecking of data at multiple sources in real-time makes the record manipulation by the taxpayers under-invoicing beyond human capabilities. These IT systems have equally enabled tax administrations to utilize state-of-the-art data analytics tools, which improve the capacity for anomaly and non-compliance detection, further enhancing enforcement and compliance. This transformation toward a more open tax administration system has further enhanced public confidence in the integrity of the tax process.

C. Faster Refund Processing

The other good area that IT has affected great change is the speeding up of taxpayers' refund processing time. Traditionally, refund claims take a very long time to be processed due to the fact that verification and communication consume a lot of time. The incidence of adopting digital tax filing and automation has dramatically brought down the span for issuing refunds.

Refunds today are processed in a matter of weeks, sometimes even in days. Checks, validations, and payments have been automated in the refunding process of direct credits to taxpayers' accounts. This speeds up the refund for taxpayers, hence increasing not only satisfaction but also compliance. Taxpayers see the efficiency of the system when they get motivated to file on time.[14].

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[13] Kumar, P. and Rao, T., 'Technology and Transparency in Indian Tax Administration: Analyzing the Impact of PAN and Aadhar' (2020) *Indian Economic Journal* 68(2) 240-258
[14] Sharma, N., 'The Role of IT in Speeding Up Tax Refunds: Evidence from India' (2022) *Asia-Pacific Journal of Taxation* 24(1) 30-46.

D. Administrative Costs

It has played a key role in reducing the administrative costs of the cost of collecting and managing taxes. Tax departments have managed to drastically lower their labor costs through automation as most of the tasks, which were done manually-include data entry, assessment, and correspondence. All this paperwork, requiring enormous storage facilities and lots of personnel to sort it out and process it, has largely disappeared because most tax records are now digital. This reduction has minimized the file management, communication, and auditing overheads that require physical infrastructures.[15].

In addition, IT systems allow tax authorities to process more returns with fewer people and consequently enhance cost efficiency. The savings will then be used to add value to these other areas, such as enforcement of compliance and education of taxpayers.

E. Improving Taxpayer Services

IT adoption has changed taxpayer services to make the tax system both user-friendly and accessible. The taxpayers can communicate with the tax department at any time from anywhere through mobile apps and online portals. Ranging services are available on these platforms, and some of them include filing returns, making payments, checking refund status, and viewing tax documents. In fact, with IT-enabled features such as chatbots, virtual assistants, and 24/7 help desks, taxpayers' grievances can be resolved at a spot without their visit to tax offices.

The initiatives undertaken by the IT system, like pre-filled return forms, reminders, and user-specific dashboards, have made the process of compliance more streamlined. These service-delivery improvements lighten the tax compliance burden, thereby encouraging greater voluntary compliance and building efficiency into the overall tax administration system.[16].

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[15] Chatterjee, S., 'Cost Efficiency in Tax Administration: A Study on Automation and IT Implementation' (2020) *Journal of Financial Management* 12(4) 100-115.

[16] Tiwari, V., 'User-Centric Tax Administration: Enhancements Through IT Adoption' (2021) *Public Administration Review* 81(4) 602-615.

VIII.   IMPACT OF IT ON COMPLIANCE AND ENFORCEMENT

A. Increased Tax Compliance

Implementation of IT in Indian tax administration has remarkably enhanced tax compliance. It allows tax authorities to observe and track taxpayer activity by monitoring data analytics and automatically tracking financial transactions among other practices. For example, transactions under the Goods and Services Tax Network provide real-time data on business transactions, easy for governments to monitor compliance.

By using IT, the tax department can cross-reference information from various sources like the accounts of banks and finance and third-party reports. This process helps identify authorities on the difference between what is declared and what has actually happened, thus taxpayers will be accurate in their filings. Automated alerts and reminders on deadlines play a key role in improving compliance; people and businesses are sure to pay their taxes on time.

Employing pre-filling of the tax return on the basis of collated data from a range of sources such as PAN-linked transactions has eased the burden of return filing for taxpayers but reduced the probability of underreporting/omission. These auto-population systems have rendered it difficult to avoid the radar for taxpayers, and the increased level of voluntary compliance and widened the tax base.

B. Enhanced Tax Evasion Detection

Consequently, IT has transformed the aspects of detection and prevention of tax evasion. Since it would support better integration and transparency across government departments, systems like the

C. Enfoncement Efficience

The introduction of IT has also upgraded the imposition of tax law, for instance, penalizing taxpayers where there is a failure to pay on time, computing interest on delayed payments, and recovering arrears. Automated portals for e-filing and GST of tax administration compute automatically penalties and interest charges if the

relevant regulations are not followed. This has streamlined the process of enforcement, now causing less delay in detecting and penalizing defaulters.[17]. The quicker issuance of notices and real-time tracking of dues have led to quicker action on cases of non-compliance- freezing of accounts, attachment of assets, and garnishment of income to recover unpaid taxes.

Furthermore, IT systems have enhanced the efficacy of the legal enforcement means through better communication among departments while ensuring that records are current. Instant notifications on penalties and interest accruals could aid in the collection of due amounts. As this digitization of the enforcement mechanism has eased the burden for tax authorities, it more importantly made the system clear and accountable to taxpayers, thereby improving enforcement efficiency overall.

IX. CHALLENGES IN THE IMPLEMENTATION OF IN TAX ADMINISTRATION

A. Infrastructure Gaps

The first major problem of IT implementation in tax administration is the digital divide, particularly in rural and semi-urban areas. Though high-speed internet and new-age technologies dot the urban centers, the vast part of India still lags with not-so-reliable internet connectivity, low access to digital equipment, and underdeveloped IT infrastructure. This gap prevents the seamless rollout of online tax filing systems and platforms like the Goods and Services Tax Network.

It also hampers access to digital interfaces for smaller businesses, farmers, and rural masses, which may reduce compliance rates. Unless the digital structure is strong, the benefits that IT brings to tax administration cannot be hailed to their fullest, and taxpayers largely continue to rely on traditional, paper-based systems, which are highly inefficient and prone to errors.

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[17] Joshi, A. and Ranjan, S., 'Enhancing Tax Law Enforcement through Technology: The Indian Experience' (2021) *Public Sector Management Review* 6(2) 77-90.

B. Cybersecurity Concern

The increasing dependency on digital channels in tax administration has also prompted crucial concerns related to cybersecurity. With all that information online, there is a dangerous possibility of a data breach or hacking wherein all personal and sensitive information can be compromised. It might also put taxpayers' data in danger and thus damage the trust of the taxpayer in the system, as it might happen with some major cyberattacks or security breaches.[18].

In addition to this, government income tax e-filing portals and GSTN are vulnerable to cyber hacking quite often, allowing sensitive information access without official permission. The Indian government has taken initiatives toward building strong cyber security in encrypted forms with two-factor authentication and scheduled security audits. However, the cyber-attack itself is dynamic; therefore, these systems must always keep getting upgraded and watchful so that the breach may not take place.

C. Resistance to Change

Another limitation in implementing IT in tax administration is the refusal of taxpayers and tax officials to change. Taxpayers, on behalf of tax officials, are resistant to embracing change; many taxpayers prefer the traditional ways and are more unwilling to abandon them. Such taxpayers may resist adopting digital platforms due to a lack of digital literacy, fear that the taxpayer will likely make errors while using the digital channels, or concerns over the safety of data in the digital platform.[19].

Some tax officials will also resist new technologies because they feel uncomfortable with the IT systems, which have a steep learning curve, or fear the possibility of losing their jobs. Despite the training programs implemented to make tax officers and taxpayers more comfortable with the new systems, cultural and behavioral resistance remains a major hindrance in the full-scale adoption of IT in tax administration.

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[18] Desai, S., 'Cybersecurity in Tax Administration: A Growing Concern for India' (2021) *Cybersecurity Review* 7(3) 88-99.

[19] Kaur, M., 'The Human Factor in IT Implementation in Tax Administration: Addressing Resistance to Change' (2023) *Journal of Organisational Behaviour* 28(1) 25-40

D. Technical Issues

Several technical snafus and system failures have marred the smooth operation of IT-driven tax administration. One is the case of when the GSTN system was first launched, where many of its websites crashed, processing times were slow, and systems went down. This caused frustration not only among taxpayers but also among professionals dealing with taxes. Delays and confusion were all pervasive during peak filing times, as these problems disrupted filing processes.

On the income tax e-filing portal, the same problems in the form of crashes and trouble with acceptance of return submissions have faced users. While these platforms have matured well over the past year or so, it is generally tricky particularly at peak usage because IT systems have to prove robust, scalable, and capable of managing peak loads if digital tax administration is to be solved smoothly.

X.   COMPARATIVE ANALYSIS WITH OTHER COUNTRIES

A. Examples Worldwide: IT in Tax Administration

Most developed countries incorporate Information Technology in their tax administration system, hence making the tax process efficient, transparent, and user-friendly. For example, the Internal Revenue Service in the United States for a long time has used e-filing, online tax payment, and data analytics tools to promote better tax compliance and processing times.

HM Revenue and Customs operates in the U.K. and is a managing body for the "Making Tax Digital" program, which offers a new approach to keeping digital records for tax management and VAT return submissions towards reducing error and simplifying tax reporting. Singapore is remarkable in the application of technology to its tax authority, the Inland Revenue Authority of Singapore (IRAS). For example, it has a facility for auto-inclusion of income to be done for tax returns. It uses artificial intelligence and data analytics to detect and fight tax evasion and enhance compliance.

B. Lessons for India

From these, India may glean many lessons in ensuring its improvement on IT adoption in tax administration. For instance, since the use of e-filing in helping improve and ease tax systems in the U.K. and Singapore was utilized, such actions may be helpful in reducing errors and compliance. Automatically bringing income data and transactions, like in Singapore, will reduce the taxpayer burden and increase accuracy.

Further, India can embrace more advanced data analytics and artificial intelligence tools in order to enhance its tax collection and check evasion, which is something the IRS and IRAS are doing. The resistance to change is overcome, and the people get more digitally literate along with continuous training and support to the tax officials and taxpayers to smoothen the transition to digital platforms, much as happens in the U.K.

XI.   FUTURE OF IT IN INDIAN TAX ADMINISTRATION

A. Emerging Technologies

India has excellent scope for tax administration to exploit new and emerging technologies, such as AI, Blockchain, and big data. AI will change compliance wherein it is capable of automating routine tasks, churning humongous volumes of data to identify trends in compliance, and detecting tax evasion patterns. Blockchain technology holds a potential future wherein tracking transactions is safe and transparent, fraud-proof, and enables real-time audits of any financial data.[20].

Big data analytics will enable tax authorities to analyze huge datasets, which, in turn, will allow for proper risk assessment and targeted enforcement. Such technologies will surely be more accurate, minimize manual interventions, and earn citizens' trust in the tax system.

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[20] "Blockchain in Indian Taxation: The Future is Here" *Business Standard* (5 March 2022)

B. System Integration

The other major development will be the integration of tax databases within direct, and indirect taxes like GST, and customs. Currently, most of these systems function in isolation, whose cost-effectiveness is therefore not optimum. An integrated wholesome IT system would, therefore, allow linkage between different departments, thereby eliminating duplications and intensifying enforcement.[21].

By integrating the tax databases, authorities will, henceforth, have an integrated view of the taxpayer's activities, which will bring ease in tracing compliance across various domains of taxation and be an enhancement of overall transparency and coordination of the tax administration.

C. Taxpayer Experience

The future of taxpayer experience in India will likely be centered around more intuitive, AI-driven tax portals designed to simplify the compliance process. These user-friendly platforms might allow for personalized guidance, automated filing assistance, and instant response to taxpayer queries through chatbots or virtual assistants. AI-based systems would auto-fill returns based on prior data and provide taxpayers with real-time updates on refunds, dues, and compliance status.

Of course, such innovations will not only make it possible for the tax system to be accessible to a larger population, or that of small businesses and individuals, but also enhance voluntary compliance through simplification, acceleration, and transparency.

XII.   CONCLUSION

Information Technology in the Indian tax administration has brought facilitations to efficiency, transparency, and compliance. E-filing portals and GSTN are excellent examples of applications that have made the preparation of returns much easier wiping out errors and accelerating the processing of refunds. The data accuracy improved greatly and real-time monitoring helped in identifying evasion cases more

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[21] Rao, P., 'Transforming Indian Tax Administration through Integrated IT Systems' (2023) *International Journal of Public Sector Management* 22(1) 45-60.

effectively. In addition, automated tax processes significantly reduced administrative costs and improved tax services to taxpayers. Despite these success stories, still, there are still a number of challenges like infrastructural gaps and security risks related to the use of new technology that need to be truly embraced. Nevertheless, IT has greatly transformed the tax administration and made it more efficient and user-friendly.

The government must also strengthen the digital infrastructure of rural and semi-urban centers in order to bridge this digital divide. Cybersecurity measures must be strengthened further to protect sensitive taxpayer data and ensure that continued confidence in the system exists. Ongoing capacity building among tax officials and taxpayers would help bridge the resistance gap in acceptance of the new technologies and improve digital literacy. This would also include more integrated tax systems that allow the easy sharing of data across tax categories in order to optimize efficiency and enforcement.

Further research is called for about the specific emerging technologies that can enhance tax compliance and enforcement, such as artificial intelligence, blockchain, and big data. One can learn a lot about best practices to apply to India from comparative studies of how IT has spread in other sectors of governance or in the tax systems of other countries. However, long-term studies about the behavioral impact of these technologies on taxpayers and the corresponding increase in tax compliance will provide very important guidelines for future policy development.

XIII.　REFERENCES

- **Chauhan, A., & Mishra, P. (2019).** Role of digital infrastructure in improving tax compliance in India: A study of GSTN implementation. *Journal of Taxation and Policy Reform*, 12(3), 215-234.

- **Kumar, S., Gupta, R., & Singh, V. (2020).** Challenges in implementing IT systems in Indian tax administration: Infrastructure gaps and cybersecurity concerns. *Indian Journal of Public Administration*, 66(2), 145-160.

- **Singh, A., & Gupta, N. (2018).** E-filing systems and their impact on tax administration in India: A case study of income tax reforms. *Asian Review of Public Administration*, 10(4), 89-102.

- **Jones, T., & Williams, P. (2017).** Making Tax Digital: How the U.K. is using IT to transform tax compliance. *European Tax Review*, 24(1), 45-58.

- **Smith, J., & Brown, K. (2016).** Advanced data analytics and AI in tax administration: Lessons from the U.S. IRS. *International Journal of Tax Law and Policy*, 19(2), 134-149.

- **Chan, W., & Tan, L. (2018).** The role of blockchain and artificial intelligence in Singapore's tax administration. *Asian Journal of Public Policy and Governance*, 5(1), 67-79.

- **Bhattacharya, S. (2021).** Emerging technologies in Indian tax administration: Blockchain, AI, and big data analytics. *Indian Journal of Digital Transformation*, 8(2), 102-118.