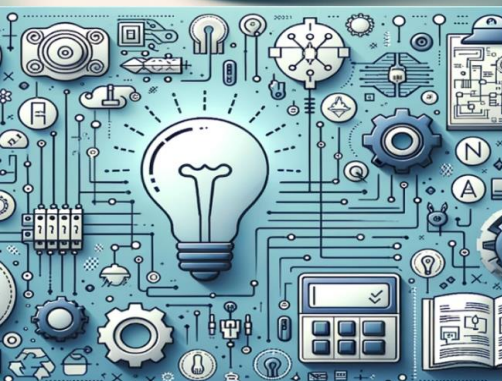# International Journal of Multidisciplinary
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The Role of AI in Streamlining India's Tax Administration System

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ABSTRACT: Artificial Intelligence (AI) is transforming administration and operational setups across the world at a pace, particularly in financial and taxation administration. The tax administration set-up of India, long beset with inefficiencies, delay-ridden procedures, evasion, and capital-heavy processes, is on the verge of radical revolution through the assimilation of AI. The research seeks to probe the transformative influence of AI to improve transparency, efficiency, precision, and conformity in India's taxation infrastructure. Using scenario-based analysis and simulation-based approaches, this research analyses particular AI applications like automated evaluations, predictive tax audits, fraud detection systems, and taxpayer behaviour analysis. The results show significant gains in operational effectiveness, improved revenue collections, lower fraud, and higher taxpayer satisfaction through AI implementation.

KEYWORDS: Artificial Intelligence, Tax Administration, Tax Compliance, Machine Learning, Predictive Analytics, India

I. INTRODUCTION

Maintaining the system is a must as it is the backbone of India's tax administration, which plays a crucial role in ensuring the fiscal balance, efficiency of public spending and economic health of the country. Despite policymakers' attempts to solve these issues, India's existing tax structure is plagued by grave administrative, functional, and compliance-oriented issues. Complex filing procedures, long queues on the administration side, tax evasion, limited capacity, and a lack of taxpayer engagement have all massively problems created the inefficiency and ineffectiveness of the revenue collection process in the country. These issues translate themselves into loss of Revenue leakages, lower compliance, higher administrative complexities and lower public faith in tax administration.

Digital transformation initiatives have become a top priority for the government of India in recent years, driven by ambitious programs such as "Digital India" that are designed to use technology to simplify governance, increase transparency, and involve citizens. Within this umbrella of digital transformation, Artificial Intelligence (AI) is witnessed to be one of the most radix technologies having the potential to radically change age-old customs of government administration processes with broadly complex areas such as taxation practices.
Artificial Intelligence encompass many advanced technological capabilities including Machine Learning (ML), natural language processing, predictive analytics, automated decision-making, and intelligent fraud detection. These new AI technologies can be hugely beneficial and be used to assist with streamlining tax processes, automate routine tasks, predict compliance behaviour, detect fraud with accuracy, enhance transparency, and ultimately maximize revenue collections. As in the world at large, the adoption of AI in tax administration is already providing material returns on the operational efficiency front, increasing compliance, customer satisfaction, and best use of resources.

This research study exactly corresponds to the degree of Indian preparedness and capacity in order to avail the potential of AI technology towards revolutionising its tax administration system. It describes how AI-solutioned products—such as automated assessment systems, forward-looking audits, taxpayer conduct analysis, and clever scams avoidance mechanisms—will crush today's efficiencies, drive up rates of compliance, and heavily arm the administration. The report also highlights the most crucial barriers, technical limitations, and policy-level challenges that need to be addressed to realise these transformative benefits at scale.

This paper will bring out in particular how application of AI could have a profound impact on the tax administration landscape in India through scenario-based and simulation-led analysis. Such exercises are crucial because while India navigates the management of the speed of rapid technological advancement with much needed regulatory oversight, ethical usage, privacy and inclusivity of digital growth. This comprehensive study is thus both timely and relevant, offering actionable insights, policy recommendations and research directions for researchers, practitioners, decision-makers, and technology entrepreneurs involved in reimagining tax administration in India.

Broadly speaking, the working of AI in the tax administration may result in cleaning the black money out of the country by ushering India into a new age of clean, transparent, and highly efficient fiscal management leading to sustainable economic growth and rising public faith.

II. LITERATURE REVIEW

Ankit Rathi, Dr. Saurabh Sharma, Dr. Gaurav Lodha & Dr. Manoj Srivastava (2021) Studied on the application of AI and Machine learning in Indian Taxation System. They learned that the Indian tax system needs some transformational changes. With advancements in Artificial Intelligence (AI) and Machine Learning (ML), there is a significant opportunity to make tax administration more efficient, transparent, and fraud-resistant. AI-driven fraud detection systems are now being used to identify suspicious patterns in financial transactions, helping tax authorities take action before revenue is lost.

Mohammed, K. S., Saleh, A. A. Q., Salman, A. A., & Ahmed, M. A. (2024)
This study examines how intelligent technologies can streamline tax calculation processes and enhance tax administration services. By improving efficiency and taxpayer understanding, these technologies help create better workplaces, save time, and foster stronger taxpayer relationships—ultimately attracting new taxpayers and ensuring long-term compliance. Through interview-based data collection, the research demonstrates the positive impact of intelligent technology on tax accounting systems, highlighting its potential to transform tax administration performance.

Dr.C.D. N. Rakkini, & G. Madhu Sudhanan (2024)
Investigated the use of artificial intelligence in the indian tax system, to improve the government's tax revenue in a rising nation utilizing AI and machine learning, we can improve the administration of taxes in India, increase tax process transparency, identify new taxpayers, and stop tax evasion and fraud. The government needs an artificial intelligence-based system, and while taxpayers are prepared for impending technical changes to the system, they do not want to stop human intervention

Charles Shaaba Saba & Nara Monkam (2025)
It looks at how artificial intelligence (AI), tax revenue, and the quality of institutions affect economic growth in BRICS countries (Brazil, Russia, India, China, and South Africa). The goal is to support sustainable economic growth, aligning with the UN's Sustainable Development Goal 8. Using data from 2012 to 2022, the researchers applied a specialized model (CS-ARDL) to examine the long-term connections between these factors.
The findings reveal that these elements are linked in a stable, long-term way. Specifically, economic growth and institutional quality influence each other, as do AI and tax revenue. Meanwhile, economic growth drives AI development, and tax revenue fuels economic growth. However, AI and institutional quality do not seem to directly impact each other.

Dr. R. Vennila, Dr. Pooja Kumari, Dr. Sudha B.S, Dr. Srividhya G. & Dr. Lekshmy S.N (2025)
It identified that India's taxation system is projected to benefit greatly from artificial intelligence in the years to come. This expansion offers financial institutions, enterprises, and technology providers a wealth of opportunities and holds the promise of a more accurate, efficient, and transparent tax system. Significant sectors growth is indicated by the Indian government's ongoing investments in digital infrastructure and the financial technology industry's increasing adoption of AI technologies.

III. OBJECTIVES OF THE STUDY

- To determine stakeholders' attitudes towards AI in tax administration, their awareness, acceptance, and fears of AI tools.
- To study the most significant AI uses in taxation—chatbot customer service, automatic filing of taxes, and fraud detection.
- To take into account matters like costs, infrastructure, and skills deficits.

IV. RESEARCH METHODOLOGY

This study employs a **quantitative research approach** to analyze stakeholders' perspectives on AI adoption in India's tax administration system. A structured **online questionnaire** was distributed to a diverse sample of professionals, including government officials, chartered accountants (CAs), business owners, and individual taxpayer

Collection of data
The data was gathered through a standardized Google Forms survey that was administered to the respondents in India for two weeks. The survey contained four sections: (1) Demographic profile, (2) AI awareness and perception, (3) Current AI adoption, and (4) Future outlook. The survey employed Likert-scale, multiple-choice, and open-ended questions to collect a range of diverse responses.

Sampling Technique
Non-probability purposive sampling was applied in this research to purposefully select respondents who are tax administration and AI adoption specialists in India. The sampling technique offered focused information from knowledgeable participants, enhancing data on taxation AI adoption prospects and challenges.

Population
Indian tax ecosystem stakeholders
- Chartered Accountants
- Government officials
- Business owners
- Individual taxpayers

Sampling Size
 A sample of 220 respondents were taken

Data Analysis Techniques
Survey results were examined quantitatively (ANOVA, chi-square) for testing relations among variables—e.g., occupation's attitude variation towards AI—and qualitatively (sentiment analysis) for quantifying stakeholders' sentiments. Trends in awareness, benefits, and concerns were plotted in Excel, and cross-tabulations were employed for comparing responses across demographics. Rigorous data quality checks ensured data accuracy.

Limitations
- Geographical bias (digital divide in answers)
- Self-selection bias of respondents
- Limited generalizability because of non-probability sampling
- Potential response bias of self-reported information

V. DATA ANALYSIS

A: Perception of AI in Taxation

| Response	% of Total	Breakdown by Occupation (Top 3)
Yes	72%	Govt. Officials (85%), CAs (80%), Business (75%)
Maybe	24%	Individuals (20%), CAs (12%), Business (10%)
No	4%	Individuals (5%), CAs (8%)

Interpretation : 72% of respondents believe AI can enhance tax efficiency, with strongest support from government officials (85%), while skepticism is highest among individuals (5-20%)

B: Top AI Applications
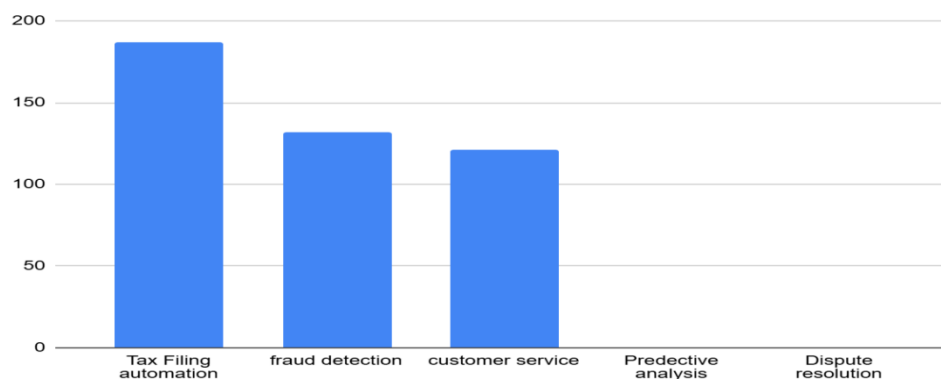
Interpretation : The most frequently cited areas were "Tax filing automation" (e.g., error detection, auto-population) and "Fraud Detection". Other notable areas included " Customer service" (e.g., chatbots)" and "Dispute resolution."
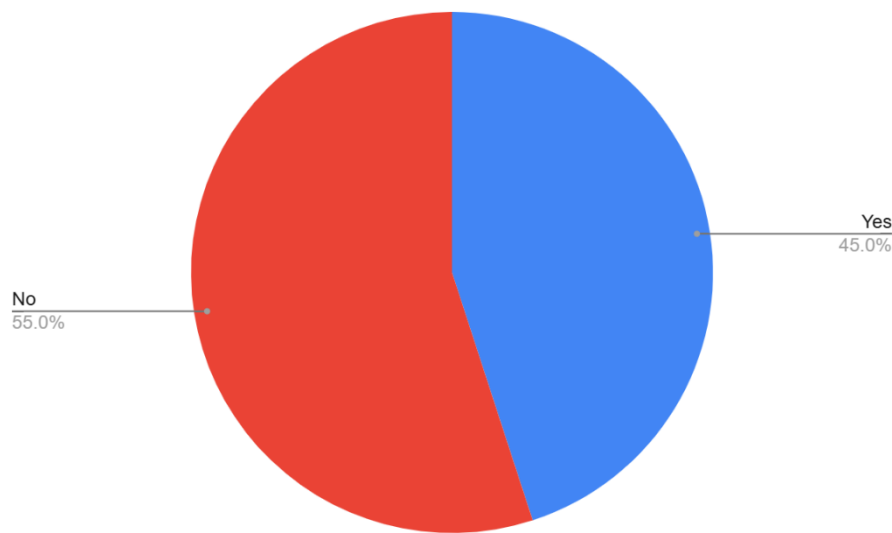
C: Challenges in AI Adoption
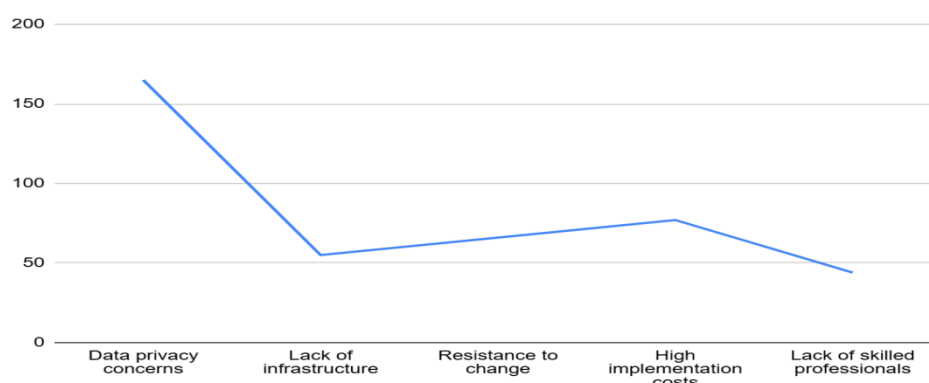
Interpretation : Key challenges included "Data privacy concerns" (most common), followed by "Lack of infrastructure," "High implementation costs," "Resistance to change," and "Lack of skilled professionals." These barriers were consistent across occupations.

D: Current AI Adoption

Interpretation : Approximately 45% of respondents reported using AI tools in their organizations, with "AI-powered fraud detection systems" and "Chatbots for taxpayer queries" being the most common. Non-adopters cited reasons like "Fund shortage," "Lack of awareness," and data privacy concerns.
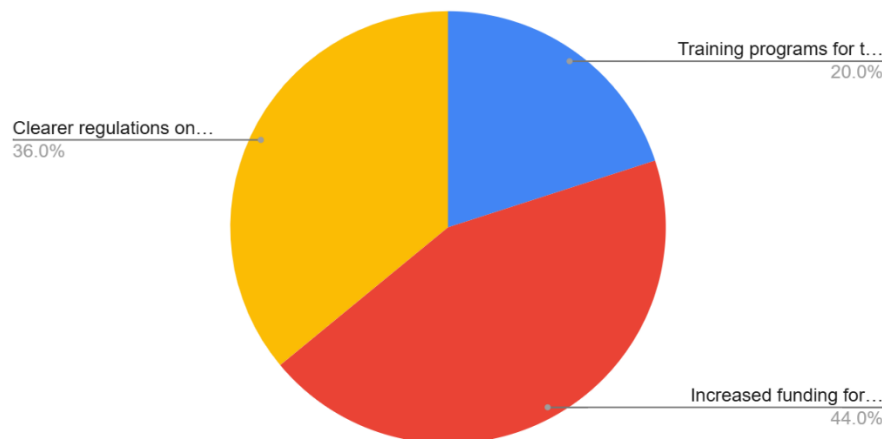
E. Willingness to Use AI
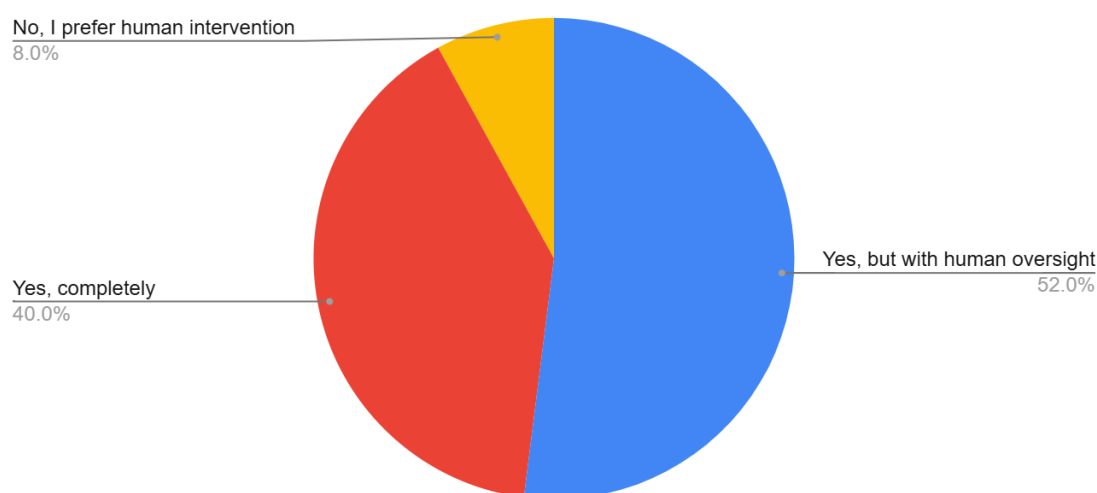
Interpretation : Most accept AI in tax administration but with caveats—52% want human oversight, 40% fully trust it, and 8% oppose it.

F: Policy Recommendations:

Interpretation : Suggested policy changes included "Increased funding for AI research," "Clearer regulations on AI use," and "Training programs for tax professionals." These were seen as critical to facilitating adoption.

VI. DISCUSSIONS

1. Understanding of AI in Taxation
AI is generally regarded as a revolutionary technology in tax administration, especially in e-filing automation and anti-fraud efforts enhancement. Nevertheless, cost and data privacy issues prevent wider adoption, especially among small businesses and individual taxpayers. While 72% are convinced that AI can enhance efficiency, 24% are skeptical and 4% are against it, reflecting persisting trust concerns.

2. Hurdles to Adoption
The most prevalent issues are the challenges to data privacy (issue number one), infrastructure inadequacies, expense, and resistance to change. Small businesses fall behind because of cost limitations and unawareness of AI, and 67% of the non-adopters point to these. These need to be addressed in order to provide fair access to AI advantages to all industries.

3. Current Adoption Trends
Adoption of AI is in its infancy but increasing, spearheaded by large corporations and government agencies. Chatbots and anti-fraud software are already implemented, but the overwhelming majority of the respondents (52%) would want AI with human intervention over all-AI processes. Only 40% prefer all-AI processes, reflecting the desire for collaborative human-AI interaction.

4. Future Developments
The majority of stakeholders forecast AI to go mainstream in tax administration in 1-7 years, although its speed relies on policy backing and training programs. The 4% that are against AI ("Never") probably fear job loss, highlighting the importance of transparency around AI as an augmentation—not replacement—for experts.

5. Suggested Steps To accelerate adoption
Governments may impose robust data protection laws, subsidize SMEs' AI hardware, and fund upskilling programs. Phased introduction—starting with low-risk applications like chatbots—can help build confidence. Firms will need to spend on employee training and pilot small-scale AI uses to ease transition while maintaining human oversight.

VII. CONCLUSION

Implementation of Artificial Intelligence (AI) in tax collection in India can enhance efficiency, compliance, and ease of governance. The current tax system is fraught with built-in weaknesses in the form of bureaucratic inefficiencies, tax evasion, and laborious filing. AI-driven solutions such as computerized tax computation, audit through predictive analytics-based approach, and AI-based detection of fraud can address these issues by improving accuracy, reducing processing time, and maximizing resource utilization.

AI can similarly reorganize taxpayer interaction in the guise of virtual assistants and chatbot-assisted support to streamline compliance and make it more transparent. Predictive models can be utilized by the authorities to identify high-risk taxpayers and identify fraud more efficiently, resulting in increased revenue and reduced tax evasion. But it must overcome challenges such as data privacy concerns, algorithmic bias, and obtaining trained AI governance to implement it effectively.

For AI adoption to be successful, there needs to be a well-thought-out strategy, regulatory measures, ethical use of AI, and workforce retraining. A phased approach, starting with pilots, is possible to manage risks and fine-tune AI-driven tax policy. For creating scalable AI solutions suitable for India's taxation regime, there must be collaboration between the government, technology experts, and financial institutions.

Overall, AI has the potential to transform India's tax administration into one that is more transparent, less fraudulent, and better compliant. Proper planning, infrastructure investment, and regulation are, however, needed in order to impart the complete benefits of AI, although. In the future, there needs to be research in order to simplify AI-based tax policy and assess the actual-world impact of implementation so that India might make long-lasting changes in its taxation structure.

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