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AI-Powered GST Analytics: Enhancing Taxpayer Experience and Policy Formulation

Sunil Kumar Khatri, Research Scholar, Department of Commerce, Shri Khushal Das University, Pilibanga, Hanumangarh
sunilmgc@gmail.com
Dr. Priyanka, Supervisor, Shri Khushal Das University, Pilibanga, Hanumangarh

Abstract

The integration of Artificial Intelligence (AI) in Goods and Services Tax (GST) analytics has the potential to transform the way tax systems are managed, offering significant improvements in both taxpayer experience and policy formulation. This research explores the role of AI in optimizing GST processes, focusing on how AI-driven analytics can streamline compliance, simplify complex tax calculations, and provide real-time, data-driven insights into tax data. By automating tedious tasks such as data reconciliation, anomaly detection, and audit processes, AI not only reduces the burden on taxpayers and tax authorities but also enhances the accuracy and efficiency of the entire tax system. Additionally, AI-powered tools enable better understanding of tax trends, identifying areas of non-compliance, and predicting future revenue collections, which can support policymakers in designing more effective, evidence-based, and responsive tax policies. This study also discusses the potential challenges and ethical considerations surrounding the use of AI in GST, including issues related to data privacy, algorithmic biases, transparency, and ensuring equitable access to AI-driven solutions across different sectors. Ultimately, AI-powered GST analytics promises a more efficient, transparent, and taxpayer-friendly tax environment while facilitating the creation of adaptive, future-ready tax policies that are aligned with economic realities.

Keywords: Artificial Intelligence, GST Analytics, Taxpayer Experience, Policy Formulation, Data Reconciliation, Tax Compliance, Anomaly Detection, Revenue Prediction, Tax Policy, AI in Taxation, Data Privacy, Algorithmic Bias, Tax Automation.

Introduction

In today's modern era, new discoveries are being made in computer science every day, one of the major and revolutionary achievements of which is Artificial Intelligence (AI). Artificial Intelligence is also being used very widely in the field of business, which has seen a new change in the business scenario. This new technology is making business operations more effective, streamlined and efficient.

AI is also being widely used in the field of taxation, which has brought about a significant change in the ways the government and businessmen handle tax collection, return filing and other tax-related transactions. The Goods and Services Tax (GST) system, which is an important and integral part of India's indirect tax system, involves many complex processes. These processes require great accuracy, efficiency and transparency. Through AI, these processes can be completed in less time with more accuracy and effectiveness, making tax compliance simple and easy.

AI-powered data analysis is not only making GST compliance easier for taxpayers, but is also guiding policymakers in formulating more robust and effective tax regulations. Apart from this, with the help of AI-based technologies, various GST related tasks can be automated, which can help detect fraud in time. This is not only proving helpful for tax officials, but is also proving useful for businessmen, as it is helping them to make the tax process more transparent and smooth.

This research paper explains in detail how Artificial Intelligence is proving to be helpful in making tax administration more effective, transparent and smooth. Through this, the tax system is being modernized, which is making the country's economic structure stronger.

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Assistance in Tax Compliance

Filing returns on time under Goods and Services Tax (GST) and ensuring compliance with GST rules is a complex task for businesses. Artificial Intelligence (AI) not only simplifies the process but also saves time by automating calculations and reducing human errors. Businesses match their invoices with tax returns, which requires including every large amount invoice in the return online. In addition, e-way bills are also required for goods to reach their destination, which is generated by entering information online.

Through AI, businesses can accurately match their invoices and invoices, reducing the risk of human errors and enabling more accurate and efficient reporting. GST compliance also requires businesses to ensure the correct application of various tax rates, exemptions and input tax credit (ITC). AI can not only identify the correct parties to a transaction but also accurately check exemptions and deductions. Through this, businesses can claim the correct amount of input tax credit, thereby reducing the risk of calculation errors and making filing tax returns simpler and more accurate. It can also be a challenge for businessmen to understand GST rules and deadlines. AI-powered chat-bots can provide assistance to solve this problem. These chat-bots can not only simplify the tax filing process by answering common questions related to GST, but can also provide guidance in different languages for businessmen from different sectors. Apart from this, answers to new questions and updated guidance and information can also be made available easily in these chat-bots as per the needs of the taxpayers.

Use in tax audits and fraud detection

Tax evasion is a major concern for governments. Fraudulent activities can be detected more efficiently with the help of artificial intelligence (AI). AI-powered systems analyze large amounts of taxpayer data to identify suspicious transactions. These tools are able to detect fake invoices, tax evasion patterns, and irregular financial activities.

Suspicious transactions can be identified using machine learning, alerting tax officials to take action in real time. Leveraging AI can make the government tax system more robust, transparent, and effective. Additionally, AI analyzes business compliance history based on their type and provides a risk score, helping tax officials focus on high-risk cases. Anomalies are detected by in-depth analysis of returns through AI-powered tax audits, reducing the need for random audits. Anyway, manual audit consumes more time and resources, whereas AI-based tax audit makes the process faster, efficient and less costly.

Use of AI for better tax policy making

It is important for the government to estimate revenue to formulate the right tax policy. To plan the budget well, it is important to understand what changes can happen in tax collection. Artificial Intelligence (AI) helps in this. It helps in estimating future tax collection. Also, it also tells at what time tax collection increases or decreases.

AI analyzes data. Through this, governments can make better economic plans. It also tells how much money should be invested in which sector. It is also helpful in distributing resources in the right way.AI is also beneficial for tax officials. With this, they can understand the behaviour of taxpayers better. It also helps in identifying which industries do not follow the tax rules properly. The government can make new rules to prevent tax evasion and increase compliance. In this way, policies can be made more transparent and effective by using AI. This not only increases the revenue of the government but also makes the process easier for taxpayers.

Challenges and ethical concerns

Although artificial intelligence (AI) can improve tax administration, it also comes with certain challenges and ethical concerns. These need to be addressed so that the tax system remains transparent, fair and secure.

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1. Security of taxpayer data

AI analyzes data on a large scale, raising privacy concerns. It is very important to ensure the security of sensitive data of taxpayers. For this, governments will have to implement strict data security measures and ensure compliance with global data protection laws.

In addition, cyber security measures have to be adopted to prevent unauthorized access to taxpayer information. If taxpayers are confident that their data is safe, they will accept the AI-based tax system more easily.

2. Bias and bias in AI system

At times AI models may be biased, which may lead to biased treatment of some taxpayers. To avoid this:

- It should be mandatory for tax officials to be trained on the correct use of AI.
- AI models should be regularly audited to ensure that the decisions are fair.
- Transparent AI decision systems should be developed that treat all taxpayers equally and equitably.

3. Transparency of AI decisions

Taxpayers should have the right to know on what basis AI-driven tax decisions are made. Therefore:

- AI models should be transparent and clear so that taxpayers understand that the decisions are fair.
- Officials should be held accountable so that they implement AI decisions in a rational and equitable manner.

4. Fair access to AI tools

Small merchants may find it difficult to use AI-driven tools and compliance features. Therefore:

- The government should work with software providers to provide affordable AI solutions.
- Merchants should be trained on the use of AI-driven platforms.
- AI applications should be developed according to the needs of small and medium businesses.
- If all merchants are given equal access to AI tools, it will ease tax compliance and increase automation of businesses.

Conclusion

AI can revolutionise the existing GST system by simplifying tax compliance, improving fraud detection and helping governments formulate better tax policies. However, there are some challenges like data privacy, fairness and transparency. But these can be addressed with proper regulation and vigilance.If governments use AI efficiently, they can create a more transparent, efficient and taxpayer-friendly GST system that can keep pace with the changing economic landscape.

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