

ARTIFICIAL INTELLIGENCE IN TAXATION: TRANSFORMING GST COMPLIANCE AND FRAUD DETECTION IN INDIA

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ABSTRACT

Artificial Intelligence is becoming a technology in modern tax administration. In India the Goods and Services Tax system has created a digital environment involving registration, return filing, e-invoicing, e-way bills and Input Tax Credit. The large amount of transaction data generated through these processes provides opportunities for the application of Artificial Intelligence and Machine Learning. Artificial Intelligence can assist tax authorities in analysing transactions identifying patterns detecting potential fraud and improving taxpayer services.

This paper examines the role of Artificial Intelligence in GST taxation in India. It focuses on the use of Artificial Intelligence for improving GST compliance detecting tax fraud and analysing the benefits and challenges of Artificial Intelligence based tax administration. Artificial Intelligence can help identify invoices unusual ITC claims, inconsistent transactions and potential tax evasion patterns. It can also reduce administrative work and provide faster taxpayer assistance. However challenges such as data privacy, cybersecurity, algorithmic bias, lack of transparency and the requirement, for professionals need to be addressed. The study concludes that Artificial Intelligence can significantly improve GST administration when it is implemented with human supervision, data protection and transparent procedures.

Keywords: Artificial Intelligence, GST, Machine Learning, Taxation, Fraud Detection, Tax Compliance, GSTN, Input Tax Credit.

1. INTRODUCTION

GST is a change in how India taxes goods and services. I see that GST was made to create a tax system and to make indirect taxes easier to follow. GST also pushes the use of computers in tax work. Now people register as GST taxpayers file GST returns report GST invoices and pay GST online. The digital GST world creates an amount of data. GST invoices, GST purchases, GST sales, e-way bills, e-invoices and GST Input Tax Credit

records give clues about how taxpayers act.. Looking at all those GST records by hand can be hard and slow. Artificial Intelligence offers a way to speed up this work. Artificial Intelligence means using computers that can do jobs that normally need thought like spotting patterns, sorting data guessing outcomes and helping with decisions. Machine Learning is a part of Artificial Intelligence that lets computers learn patterns from past data.

In GST tax work Artificial Intelligence can spot GST deals review GST invoices check GST ITC claims, judge GST compliance risk and help GST taxpayers. Artificial Intelligence can go through GST records fast and find patterns that people might miss with old manual methods. The job of Artificial Intelligence, in tax is growing. Of taking over the job of a tax officer Artificial Intelligence can act as a helper by giving information and risk signals that let officers make better GST decisions.

2. OBJECTIVES OF THE STUDY

The study has the following three main objectives:

- To study the role of Artificial Intelligence in improving GST tax compliance in India.
- To examine the effectiveness of AI in detecting GST fraud and tax evasion.
- To analyze the benefits and challenges of implementing AI in GST administration.

RESEARCH METHODOLOGY

The study relies on data. Information has been gathered from research papers, journal articles and other academic sources that are related to Artificial Intelligence, GST, tax compliance and fraud detection.

The research uses an conceptual approach. Existing literature has been reviewed to understand how Artificial Intelligence is applied in GST administration and to explore the benefits and challenges involved.

The study pays attention to three key areas: improving GST compliance detecting fraud and tax evasion and analyzing the advantages and limitations of using Artificial Intelligence.

4. ROLE OF ARTIFICIAL INTELLIGENCE IN GST

4.1 AI in GST Compliance

Tax compliance is a part of the GST system. Businesses must keep records issue proper invoices and follow all GST rules. Artificial Intelligence can help tax compliance by looking at amounts of taxpayer data. Machine Learning systems can spot transaction patterns and flag possible inconsistencies. For example: if a transaction looks very different from a taxpayers patterns an Artificial Intelligence system may mark the transaction for a deeper review. This helps tax authorities use their resources on the cases that need attention. Artificial Intelligence can also aid taxpayers by finding errors before they submit returns. This reduces mistakes. Boosts voluntary compliance.

4.2 AI in Invoice Verification

Invoices are a source of data in the GST system. Big businesses can produce thousands of invoices making manual checking hard. Artificial Intelligence can examine invoice data. Compare details such as GSTIN, taxable value and tax amounts. Automated systems can spot inconsistencies and suspicious invoices. Optical Character Recognition (OCR) can pull information from documents and Artificial Intelligence can help analyze the extracted data. This cuts down effort and boosts the efficiency of invoice verification.

4.3 AI in Input Tax Credit Verification

Input Tax Credit (ITC) is a part of GST. Eligible businesses can claim credit for GST paid on purchases that follow GST rules. Wrong or fraudulent ITC claims can threaten tax revenue. Artificial Intelligence can analyze purchase and sales data and spot patterns. Machine Learning models can give risk scores using transaction history and other key data. High-risk transactions can then be checked by tax officials. Artificial Intelligence gives a chance to make ITC verification more data-driven.

5. AI FOR GST FRAUD DETECTION

Fraud detection is one of the important uses of Artificial Intelligence in GST. GST fraud can involve invoices dishonest ITC claims, circular trades and other ways of evading tax. Traditional methods may miss links between many businesses and their transactions. Artificial Intelligence and Big Data Analytics can look at data sets and find patterns that hint at possible fraud.

5.1 Detection of Suspicious Transactions

Artificial Intelligence can compare transaction patterns across times and taxpayers. Strange changes can be flagged for review. For example a sudden unexplained jump in transactions or odd ties between businesses may signal that extra checks are needed.

5.2 Detection of Fake Invoices

Fake or wrong invoices can support ITC claims. Artificial Intelligence can study invoice patterns and spot odd mixes of transaction values, businesses and reporting behavior. The Artificial Intelligence output can alert tax officers, who can then investigate further.

5.3 Detection of Circular Trading

Circular trading happens when businesses trade with each other to create a look of commercial activity. These networks are hard to spot with rules. Artificial Intelligence network analysis can look at relationships between businesses and transactions. This can uncover trade networks. Recent studies have looked at using Artificial Intelligence and Big Data Analytics to find trading and tax-evasion patterns in GST transactions.

6. BENEFITS OF AI IN GST ADMINISTRATION

- Artificial Intelligence can spot errors and odd patterns encouraging taxpayers to fix mistakes and improve tax compliance.
- Artificial Intelligence can process amounts of information much faster than manual work. This speeds up tax administration.
- Artificial Intelligence can find transaction patterns and fraud clues helping tax enforcement work better.
- Automation cuts tasks for tax officials letting them focus on more complex cases.
- Artificial Intelligence chatbots and digital assistants can give answers to common GST questions.

7. CHALLENGES OF AI, IN GST

while Artificial Intelligence brings benefits using it in GST also brings some challenges. GST systems hold financial and business details. Proper security steps are needed to stop access and misuse of taxpayer data. The increasing use of digital technology makes cyber security extremely important. AI-based GST systems must be protected from cyber threats.

Scope of the Study

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1. To study the application of AI in improving GST compliance.
 2. To examine the use of AI for detecting GST fraud and tax evasion.
 3. To analyze the role of AI in Input Tax Credit (ITC) verification.
 4. To study the use of AI in improving taxpayer services and GST administration.
 5. To understand the potential of AI in India GST system.

Findings of the Study

1. AI can improve GST compliance through automated data analysis.
2. AI can help identify transactions and fraudulent invoices.
3. AI can support the verification of Input Tax Credit claims.
4. AI can reduce work and improve the efficiency of tax authorities.
5. Data privacy, cybersecurity and human oversight are challenges, in AI-based GST administration.

Suggestions

1. GST authorities should adopt reliable AI systems.
2. Data privacy and cybersecurity measures should be implemented.
3. Tax officials should be provided with AI and data-analytics training.
4. AI-generated results should always be supported by human verification.
5. AI systems should be regularly. Updated for accuracy and fairness.

CONCLUSION

Artificial Intelligence has significant potential to improve GST administration in India. It can enhance tax compliance, detect fraud, verify ITC claims and reduce administrative work. However, challenges such as data privacy, cyber security and human oversight must be addressed. With proper implementation and responsible use, AI can make the GST system more efficient, transparent and taxpayer-friendly.

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