

ROLE OF ARTIFICIAL INTELLIGENCE IN IMPROVING TAX FILLING ACCURACY

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ABSTRACT

Artificial Intelligence (AI) has emerged as one of the most important technologies transforming modern business and government activities. The taxation sector is also experiencing significant changes through the adoption of AI, machine learning, data analytics, automation and intelligent digital systems. Traditional taxation systems involve large amounts of data collection, tax calculation, verification, assessment and compliance monitoring. These activities can be time-consuming and may involve human errors. AI provides opportunities to automate many of these processes and improve the efficiency of tax administration.

AI can analyse huge volumes of taxpayer information and identify unusual financial transactions, suspicious activities and possible cases of tax evasion. It can support tax authorities in selecting high-risk cases for detailed investigation. AI can also assist in tax calculation, return processing, document verification and taxpayer communication. Chatbots and virtual assistants can provide immediate responses to common tax-related questions and improve taxpayer services.

The implementation of AI in taxation provides several benefits, including improved accuracy, faster processing, reduction of administrative costs, better fraud detection and increased tax compliance. At the same time, the use of AI creates challenges related to data privacy, cybersecurity, algorithmic bias, transparency, accountability and the need for skilled employees.

INTRODUCTION

Taxation is one of the major sources of government revenue. Governments collect taxes from individuals and businesses to finance public services, infrastructure, education, healthcare, social welfare and economic development. An effective taxation system requires accurate assessment, timely collection, proper compliance monitoring and efficient administration.

Traditionally, tax administration has depended heavily on manual processes. Tax officials have had to examine large numbers of tax returns, financial documents and transactions. As the number of taxpayers and volume of financial transactions increase, manual processing becomes more difficult and time-consuming. Errors may occur during data entry, calculation and verification. Tax authorities also face challenges in identifying tax evasion and fraudulent activities.

Importance of AI in Taxation

- 1.Improved Accuracy:** AI can reduce errors in repetitive calculations and data processing.
- 2.Faster Processing:** Large amounts of tax information can be processed quickly.
- 3.Fraud Detection:** AI can identify unusual transaction patterns.
- 4.Better Compliance:** Risk-based analysis can help tax authorities identify non-compliant cases.

5.Reduced Administrative Work: Routine activities can be automated.

6.Improved Taxpayer Services: Chatbots and digital assistants can provide quick support.

RESEARCH METHODOLOGY

Research Design

This study follows a descriptive and conceptual research design. The purpose is to examine the role of Artificial Intelligence in taxation, its applications, benefits, challenges and future opportunities.

Objectives of the Study

- 1.To understand the concept of Artificial Intelligence in taxation.
- 2.To examine the major applications of AI in tax administration.
- 3.To study the benefits of AI for taxpayers and tax authorities.
- 4.To identify the challenges involved in implementing AI.
- 5.To analyse the strengths, weaknesses, opportunities and threats of AI in taxation.
- 6.To understand the future scope of AI-based taxation.

Sources of Data

- Academic research papers
- Research journals
- Books
- Government publications
- Tax administration reports
- OECD publications
- International organisation reports
- Professional articles
- Reliable online resources

Method of Analysis

The collected information is analysed using descriptive methods. The study focuses on identifying the major uses of AI in taxation and examining its positive and negative impacts.

Scope of the Study

The study covers the application of AI in tax administration, including fraud detection, tax compliance, automated processing, taxpayer services, risk assessment and data analysis. It also considers the challenges associated with privacy, security and ethical use of AI.

Limitations of the Study

The study is mainly based on secondary information. The development of AI is rapid, and new technologies and regulations may emerge over time. The effectiveness of AI may also differ depending on the quality of available data, technological infrastructure and legal systems.

LITERATURE REVIEW

Artificial Intelligence and digital technologies have received increasing attention in the field of taxation. Previous research suggests that advanced technologies can improve the efficiency of tax administration by supporting data analysis, compliance monitoring and fraud detection.

Studies on digital tax administration indicate that tax authorities increasingly use technology to process taxpayer information and identify compliance risks. AI can analyse large datasets and identify relationships between different types of

financial information.

Another important area identified in the literature is risk management. Tax authorities cannot investigate every taxpayer in detail. AI-based risk assessment can help authorities prioritise cases according to their level of risk.

Research Gap

Although AI offers significant benefits, there is still a need for further research on ethical AI, transparency, taxpayer privacy and the long-term impact of automated decision-making. Developing countries may also face challenges due to limited technological infrastructure and shortage of skilled professionals.

MAJOR APPLICATIONS / HEADS OF AI IN TAXATION

1. Tax Fraud Detection

AI can analyse large amounts of financial information to identify suspicious transactions and unusual patterns. This can help tax authorities detect possible fraudulent activities more efficiently.

2. Tax Evasion Detection

Tax evasion involves deliberately avoiding tax obligations. AI can compare different sources of information and identify inconsistencies between reported income, transactions and other available data.

3. Automated Tax Calculation

AI-based systems can assist in calculating tax liabilities, deductions and other tax-related amounts. Automation can reduce repetitive work and minimise calculation errors.

4. Tax Return Processing

AI can help process tax returns by checking information, identifying missing details and detecting inconsistencies. This can make the assessment process faster.

5. Risk Assessment

AI can classify taxpayers or transactions according to risk levels. High-risk cases can be selected for further investigation, while low-risk cases can be processed more efficiently.

Benefits of AI in Taxation

1. Increased Efficiency

AI can automate repetitive activities and allow tax officials to focus on complex cases and decision-making.

2. Improved Accuracy

Automated systems can reduce human errors in data processing and calculations.

3. Better Fraud Detection

AI can identify unusual patterns and relationships that may indicate fraud or tax evasion.

4. Cost Reduction

Automation can reduce the time and resources required for routine administrative activities.

Challenges of AI in Taxation

Despite its benefits, AI implementation involves several challenges.

1.Data Privacy: Tax systems contain sensitive financial information. Protecting this information is essential.

2.Cybersecurity: AI-based tax systems can become targets for cyberattacks.

Algorithmic Bias: Biased training data may result in unfair predictions or decisions.

3.Lack of Transparency: Some AI models may be difficult for taxpayers and officials to understand.

4.Human Skills: Tax departments require employees with knowledge of AI, data analytics and cybersecurity.

5.Implementation Cost: Developing and maintaining advanced AI systems can require significant investment.

CONCLUSION

Artificial Intelligence is changing the way taxation can be administered. The increasing volume and complexity of financial information make traditional manual methods less effective. AI provides tools that can process large datasets, identify unusual patterns, automate repetitive tasks and support tax authorities in improving compliance.

AI has several applications in taxation, including fraud detection, tax-evasion detection, risk assessment, tax-return processing, automated calculations, document verification, taxpayer assistance and revenue forecasting. These applications can improve the speed, accuracy and efficiency of tax administration.

For taxpayers, AI can make tax services easier and more accessible. Automated systems can provide information, reminders and assistance without requiring taxpayers to wait for manual support. For tax authorities, AI can reduce administrative workload

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