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A STUDY ON PERVASIVE IMPACT OF AI ON TAXATION: FROM TAX COMPLIANCE TO POLICY DESIGN

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ABSTRACT:
The revolutionary effects of artificial intelligence (AI) on taxation are examined in this study, with a particular emphasis on India. By automating repetitive tasks, increasing data accuracy, and boosting fraud detection capabilities, artificial intelligence is completely transforming tax administration and compliance. It tackles continuing problems in tax administration, like ineffective compliance checks and difficulties figuring out tax evasion. Key AI-driven developments are highlighted in the study, such as improved audit procedures, predictive analytics, and automated tax filing. It also looks at how taxpayers view the implementation of AI, showing a sense of cautious about its potential to enhance fairness and optimize the tax law. There is discussion of difficulties like integration with current systems, the necessity for qualified specialists, and ethical issues. The findings show that while AI has a lot to offer in terms of enhancing transparency and productivity, solving societal, legal, and technological challenges is essential to its success. The study's conclusion highlights how important AI is to be creating a more intelligent fair tax system while encouraging cooperation between taxpayers and the government.

KEY WORDS: ARTIFICIAL INTELLIGENCE IN TAXATION; INDIAN TAX SYSTEM; TAXPAYERS

INTRODUCTION

Technology has profoundly transformed our lives, both personally and professionally. One area that is still undergoing a revolution is taxation. As Benjamin Franklin said, “In this world, nothing is certain except death and taxes.” However, in today’s era of rapid technological advancement, we might add artificial intelligence (AI) to that list of certainties.

AI isn’t just a buzzword anymore; it’s reshaping industries and redefining traditional practices. Taxation, often considered one of the most rigid and complex sectors, is now embracing AI to enhance efficiency, streamline processes, and improve fairness in tax administration. Tax authorities across the globe are now leveraging AI to bridge gaps in tax collection, reduce errors, and offer a more seamless experience for taxpayers.

But what does this mean for the future of taxation, and how does it impact the relationship between taxpayers and the authorities?

This paper delves into the transformative role of AI in taxation, focusing on its implementation in India—a country where tax compliance is both a challenge and an opportunity. By exploring the perceptions of taxpayers and the practical applications of AI, we aim to uncover how technology is poised to redefine the future of tax systems.

OBJECTIVES OF THE STUDY

This study seeks to achieve two primary objectives:

1. To explore the role of artificial intelligence in the Indian taxation system

2. To understand the perception of taxpayers towards adoption of Artificial Intelligence in taxation system.

RESEARCH METHODOLOGY

For research purpose, the information was gathered from the participants via a structured questionnaire. In addition to this primary data, secondary sources were consulted for information via referring a variety of articles, research papers, publications, bulletins, CBDT, GST, and other websites.

1. Population and sample for analysis

a. Individual taxpayers are the study's population. Some of the criteria that can be done in the sampling as follows:
b. Individuals who are involved in day-to-day tax practice like tax professionals, consultants, etc.
c. Individual who are aware about the Artificial Intelligence
d. Individuals who are filing their returns on their own

2. Methodology used for collecting data

The data for the analysis has been collected through questionnaire. A questionnaire is a tool used to collect data which consists of a set of questions aimed at collecting information from respondents. The questionnaire is measured by 5-point Likert, scale from 1: No impact to 5: very significant.

TRADITIONAL TAX COMPLIANCE: A CASE FOR CHANGE

Before the integration of Artificial Intelligence (AI), traditional tax compliance methods relied heavily on manual processes and old-fashioned practices. This included manually inputting tax data into systems, which increased the chances of errors and required extensive verification. There was minimal automation in tax calculations and reporting, resulting in longer processing times and delays. Taxpayers kept hardcopy records, causing paperwork intensive processes and storage challenges. Moreover, Compliance checks and audits were also heavily relied on human analysis for reviewing documents, using manual sampling methods that were time-consuming and less efficient.

Understanding of complex tax laws was difficult and often required professional advice. Instead of using real-time predictive analytics, risk assessment and fraud detection were reactive, depending on past data and recurring audits. Taxpayer support primarily used traditional channels such as tax offices and customer service centres.

Developing countries face significant challenges in establishing efficient tax systems. It has been observed that governments in these countries often resort to exploiting existing resources rather than implementing modern tax systems that would be more effective.
Some of the issues faced by India include:

- Failure to pay tax dues
- Submission of false tax returns
- Lack of reporting income
- Income earned and stored in foreign countries

In some cases, individuals may purchase products or lead extravagant lifestyles that exceed their reported income as per their tax returns. This information is often not visible to tax officials, making it difficult for them to assess and analyse everything manually. However, with the use of technology, this information can be easily analysed.

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Traditional approaches have proven to be ineffective and costly in a country like India, where the large number of taxpayers poses a logistical challenge. This highlights the urgent need for technological intervention. Among various options, AI stands out as one of the most promising emerging technologies globally.

ARTIFICIAL INTELLIGENCE (AI)

According to Merriam Webster, Artificial intelligence is "The capability of computer systems or algorithms to imitate intelligent human behaviour." Broady, Artificial Intelligence can be classified into two parts as shown in fig. 1.

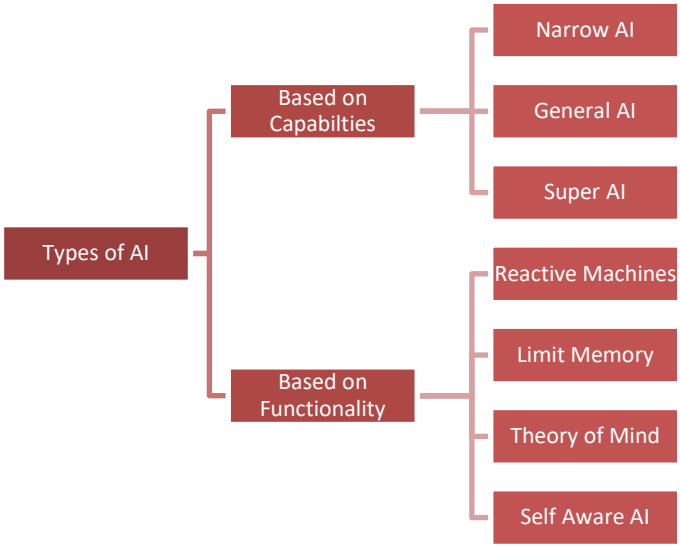

Fig. 1 Classification of Artificial Intelligence

(Source: https://www.geeksforgeeks.org/types-of-artificial-intelligence/)

MACHINE LEARNING

Machine learning (ML) is a type of artificial intelligence that allows software programs to improve their ability to predict outcomes without being specifically programmed to do so. According to Merriam Webster, machine learning is "a computational method that is a subfield of artificial intelligence and that enables a computer to learn to perform tasks by analysing a large dataset without being explicitly programmed."

In the past, computers could only understand mathematical language. However, with advancements in technologies such as Deep Learning, Natural Language Processing, Image processing, Speech recognition, and object recognition, we now have access to vast amounts of data. This large quantity of data makes it easier for machine learning algorithms to learn and improve.

TRANSFORMATIVE TECHNOLOGIES IN MODERN TAXATION

Countries around the world are using AI and robotics in various industries such as healthcare, transportation, defence, and national security. In India, the government is quickly embracing AI, which is creating new opportunities for innovation in services like taxation. Taxation is a significant source of income for the government, and it is constantly seeking ways to collect taxes more

efficiently and effectively. The goal is to reduce the number of tax defaulters and improve the overall tax collection process.
The government is currently using robotics and AI in taxation to achieve several objectives:

- Preventing tax defaults
- Regulating taxpayers
- Identifying defaulters who are underreporting or not paying taxes at all

This is done by analysing and monitoring citizens' financial data across various sources. AI also enables features like automated tax filing (such as pre-filled forms on the Income-tax website) and can assist in educating taxpayers about their obligations.

The field of tax practice is undergoing a transformation due to generative AI tools such as TaxGPT and Blue J Legal. These tools have the capability to generate comprehensive legal documents, notes, and other relevant writings. While generative AI holds great promise for revolutionizing the industry, there are still challenges that need to be addressed, including issues related to data bias and privacy concerns.

One of the most significant recent technological advancements is generative AI and its potential impact on tax systems. Tools like ChatGPT and specialized tax AI platforms are reshaping research and knowledge management for tax professionals.

These advancements have the potential to streamline workflows, enhance decision-making processes, and improve overall efficiency within tax practices.

IMPACT OF AI ON THE TAX SYSTEM AND TAX PROFESSIONS

The tax system stands to gain a great deal from the automation of operations, which will increase efficiency and need less manual labour. AI and other technology can speed departmental verification procedures, improve data management, and improve the administration of tax laws. Additionally, automation may enhance taxpayer experiences by lessening the administrative load associated with compliance. For example, taxpayers can find the process easier with systems that automatically include reporting figures into tax returns, and they can stay better informed about their responsibilities and benefits with more easily accessible digital materials.

Technological developments may assist governments in accomplishing important tax system goals. By boosting taxpayers' faith in the system, they can improve voluntary compliance by lowering inadvertent mistakes and chances for tax evasion and avoidance.

Technology will also affect tax professionals by altering the skills needed and the way they acquire knowledge and grow in their field. Although these technologies offer increased productivity and enhanced compliance, they also present substantial potential and difficulties for tax professionals, necessitating adaptation and the acquisition of new competencies to prosper in this dynamic environment.

Artificial Intelligence (AI) has transformed tax compliance in several important ways:

1. **Automating tax return preparation and filing:** AI enhances tax operations by automating routine tasks such as preparing and filing tax returns. AI-powered software, often integrated with Robotic Process Automation (RPA), accurately extracts data from sources like trial balances and invoices, organizing it into required tax forms.

2. **Monitoring tax compliance and improvement:** AI aids in monitoring and improving tax compliance by providing timely alerts on new tax regulations. This approach helps businesses mitigate risks associated with noncompliance, such as financial penalties and reputational damage.
3. **Enhancing the tax audit process and fraud detection:** AI improves the efficiency of tax audits by analysing historical data to identify compliance weaknesses. It also assists tax authorities in detecting anomalies and potential fraud through analysis of large datasets, ensuring the integrity of the tax system.
4. **Forecasting and predictive analytics:** AI algorithms analyse sales data to identify trends across various tax filing cycles (annual, quarterly, monthly). Businesses gain insights to optimize strategies, reduce costs, and enhance profitability in a competitive post-pandemic landscape.
5. **Augment data management:** Tax and accounting professionals often face the challenge of managing vast amounts of client data, from general ledgers and journal entries to employee records and unsorted documents. AI-powered document processing technology automates data extraction and organization from diverse sources, saving time and improving accuracy in tax, accounting, and audit tasks.
6. **Identify tax advisory opportunities:** AI helps firms identify client-specific tax events, enabling timely outreach and provision of value-added services. By explaining tax changes and offering tailored recommendations, firms enhance client compliance and revenue generation as trusted advisors.

CASE STUDY: AI IN ACTION—THE UTTAR PRADESH GST INITIATIVE

The Government of Uttar Pradesh faced challenges with bogus Input Tax Credit (ITC) claims, which affected the overall GST revenue. To address this issue, a comprehensive system was developed to ensure 100% verification at the time of registration. This proactive approach aimed to plug all loopholes and prevent fraudulent claims. The pivotal development in this initiative was the creation of the AI module, an automated notice generation system based on database mismatches in returns filed. Tax department has deployed a Business Intelligence and Financial Analytics (BIFA) tool to identify unexplained increase in inward movement or outward movement of goods and revenues. This system highlights such cases and gets them red flagged and then it is sent to their team for necessary action. Since the BIFA system is integrated with NHAI e-Way bills on a real time basis, tax department know which goods have passed which toll plazas. Due to this, tax department have accurate information on the movement of goods. As an outcome, the AI module has generated six lakh notices, resulting in GST deposits of Rs.980 crores during the Financial Year 2023-24. The development of this AI tool, costing Rs.18 lakhs, was facilitated with the expertise of IIIT Lucknow. This implementation allowed the department to collect more revenue without changing the GST rates.

TAXPAYER'S PERCEPTIONS: DATA ANALYSIS & INTERPRETATION

When a reform is implemented, it is never easy to accept the same. Taxpayers in a nation like India, where tax education is extremely poor, seek assistance of professional when filing their tax returns.

To understand how taxpayers perceive the implementation of AI in the tax system, the researcher has developed two hypotheses:

Hypothesis 1: The deployment of an artificial intelligence-based tax system has been welcomed favourably by taxpayers.

Hypothesis 2: According to taxpayers, integrating artificial intelligence will make the tax system less complicated.

In this research, the researcher has examined various factors such as education qualification, ethics and attitude towards tax compliance, impact of recent upgradation of tax departments activities, need of AI for collection of tax, etc. and tried to understand the taxpayer's perception for need an impact of AI on taxation. This was done through the circulation of questionnaire. A Pearson correlation analysis was conducted to determine the strength and direction of the relationship between the two variables.

The results obtained from the research are as under:

Hypothesis 1:

The purpose of this analysis is to determine if there is a significant association between citizens' sense of responsibility to pay taxes and their perception of the need for artificial intelligence (AI) in tax collection. The Pearson correlation coefficient between the two variables is 0.134. This value suggests a weak positive correlation. The corresponding p-value for this correlation is 0.028. Since this value is less than the commonly accepted significance threshold level of 0.05, the correlation is considered statistically significant. In practical terms, the analysis suggests that there is a meaningful, though weak, association between the two factors.

Although the correlation is statistically significant, the weak magnitude of the correlation coefficient implies that the relationship between these variables is not strong enough to be considered practically significant. While individuals who believe in the responsibility to pay taxes may be slightly more inclined to support the use of AI in tax collection, this inclination is not robust.

The weak correlation could suggest that opinions on the use of AI in tax collection are influenced by other factors, such as technological literacy, trust in government systems, or perceived fairness and efficiency of AI applications in governance. Policymakers aiming to implement AI in tax collection may need to address these broader concerns and not rely solely on citizens' sense of tax responsibility.

Hypothesis 2:

This analysis explores the relationship between two perceptions of artificial intelligence: its potential to aid in tax return filing and its role in making the tax system user-friendly. The results showed a Pearson correlation coefficient of 0.298, indicating a positive and moderate correlation. The corresponding p-value for this correlation is 0.000001. Since this value is far below the commonly accepted significance threshold of 0.05, it indicates that correlation is statistically significant. Thus, we can confidently conclude that there is a real association between these variables in the population.

The moderate positive correlation implies a shared perception of AI's utility in improving various aspects of the tax system. The alignment of these beliefs reflects a level of optimism or trust in AI's potential role in simplifying and enhancing tax-related processes.

This correlation, while significant, also suggests that the relationship is not overwhelmingly strong. Therefore, other factors, such as awareness, prior experience, or exposure to AI technology, may also influence these perceptions.

CHALLENGES AND CONSIDERATIONS

Tax authorities are increasingly examining the use of AI systems since they have the potential to enhance productivity, cost reductions, and enhanced compliance. However, there are obstacles in the way of fully integrating AI in tax administration.

1. **Probabilistic Nature of AI:** AI, being inherently probabilistic, can sometimes produce outcomes that may be deemed incorrect by traditional standards. Still, it's important to note that human decision-making in tax matters is also prone to errors.
2. **Complexity of Tax Laws:** AI must accurately interpret complex and dynamic tax laws across various jurisdictions, each with its own intricacies and applications.
3. **Ethical Concerns:** Ethical concerns also emerge regarding AI's potential impact on job displacement and the fairness of tax assessments, necessitating strategies to promote equitable outcomes.
4. **Technical and Operational Issues:** The integration of AI with existing tax systems and workflows presents technical and operational issues, including compatibility issues and stakeholder resistance to change.
5. **Skill Development for Tax Professionals:** Lastly, equipping tax professionals with the necessary skills and training to effectively oversee AI-driven processes is essential for harnessing AI's full potential in taxation while mitigating the associated risks.

CONCLUSION

AI is undeniably reshaping the landscape of tax compliance and administration. By automating routine tasks, enhancing data accuracy, and improving fraud detection, AI has the potential to provide a more efficient and equitable tax system. However, its success is based on its awareness, trust, and seamless integration with existing frameworks.

As we stand on the edge of this technological revolution, it is essential to continue exploring AI's potential while addressing the ethical, legal, and societal implications. The future of taxation lies in a harmonious blend of human expertise and artificial intelligence—ushering in an era of smarter and more transparent tax systems. In this evolving environment, the relationship between taxpayers and tax authorities is poised to evolve, paving the way for a future where compliance is not just a duty but a seamless, technology-driven experience.

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