Transforming Fiscal Oversight: Digital and AI Solutions for FBR & AGP

Introduction

Digital technologies are now becoming part of the emerging economies' fiscal architecture in public financial management. The high level of tax evasion and low tax to GDP ratio in Pakistan has made it all the more important to have effective tax administration and audit mechanism (Rasheed et al., 2024). The Federal Board of Revenue (FBR), and the Auditor General of Pakistan (AGP) are two cornerstones of fiscal governance, but their isolated institutional frameworks, manual approaches, and absence of a common data environment puts the traditional way of work at risk (Ayyadurai et al., 2026). Many businesses are now transitioning to a digital-first strategy, and one way to achieve more transparency, increase compliance and improve revenue collection is to use Artificial Intelligence (AI). The academic literature in recent years has emphasized the potential of implementing AI-powered systems for better detection, to reduce the risk of mistakes by humans in the process, and to make it conducive to algorithmic responsibility, following the OECD Tax Administration 3.0 blueprint (Belahouaoui & Alm, 2025). The article analyzes both tax and audit systems in Pakistan and their current state, as well as the transformative power of AI and digitalization, and suggests policy recommendations for incorporating these technologies to boost and enhance public finance governance in Pakistan.

Overview of Existing Tax and Audit Systems in Pakistan

The Federal Board of Revenue (FBR) administers the federal taxes such as income tax, sales tax and customs duties. The AGP, on its part, is responsible for the auditing of public sector entities for fiscal accountability and legislative oversight (Usman, 2023). Traditionally, these institutions have not been technologically interoperable. The FBR has adopted digital measures like introducing an online portal for taxpayer registration, filing of returns, and processing of payments called IRIS (Mohammad Affan Habib et al., 2024). IRIS has also enabled the basic e-filing functions, and the system is primarily used as a repository of files rather than a smart, predictive analytics tool (Kinanti et al., 2025). Likewise, the AGP audit processes are largely manual and are mostly conducted after the expenditure has been made, rather than in real-time, with monitoring rather than verification being the priority. The current operational framework has been characterized by a lack of integrated data governance, with data from customs, inland revenue and provincial tax authorities not being easily linked together and missing elements in comprehensive taxpayer profiling (Rasheed et al., 2024).

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Challenges in Traditional Tax and Audit Mechanisms

The existing tax and audit framework in Pakistan is plagued with numerous challenges, jeopardizing fiscal integrity. One of the main challenges is that tax evasion is common and the informal economy is significant, outside the formal regulatory framework to a large extent. Manual auditing processes are inefficient, prone to human error and subject to discretion exercised by tax officials (undefined & Shepel, 2024), and empirical evidence in Pakistan shows that traditional tax audits have contributed little to direct tax collection and have not been successful in having a significant impact on the deterrence of tax evasion because of their limited scope and reactive nature. In addition, data is fragmented across different departments of the government, which makes it hard for the FBR to have a single and complete picture of taxpayer activities, and make it difficult to compare income sources and find any discrepancies. Financial data is not monitored in real-time, which makes it difficult to detect anomalies in financial transactions years after they happen, making them less effective at correcting issues (Ahmed, 2024).

Role of Digitalization in Tax Administration

Digitalization is the building block for modernizing the tax administration. Reduction of manual work through the use of digital tools such as e-filing, e-payment and automated data processing, cuts down on administrative work.

Examples of digital reforms such as Faceless Customs Assessment FCA demonstrate the potential impact of digital reforms in Pakistan, where reducing physical interactions and paperwork could enhance trade and increase revenue efficiency (Nasir, 2026). Digital record keeping systems are more accurate and immutable for tax data collection, increasing transparency and minimizing the risk of tampering with tax data to defraud the tax system. Digital systems can be used to optimize and digitalize routine compliance monitoring tasks, and help tax authorities focus their resources on more high-risk cases (Ahmed, 2024). Also, the reduction of human touch in the normal processes will contribute to minimize the risk of corruption and enhance the level of public trust in tax system fairness (Pali & Rama, 2025).

Application of Artificial Intelligence in Tax and Audit Systems

The digitization revolution is not the only revolution that's taking place with Artificial Intelligence (AI) in tax and audit. Machine learning algorithms, deep learning networks and natural language processing (NLP) are examples of AI technologies that assist with proactive fraud detection and determining which risks to audit. Supervised machine learning models such as random forest models can help improve efficiency and reduce processing expenses in the audit while irregularity in financial transactions can be detected. The more the tax authorities are able to predict tax compliance patterns and the revenue streams the more quickly and effectively they can take action to identify potential tax compliance concerns before they even become issues, and take appropriate action. Furthermore, the anomaly detection systems can process a vast amount of data in real-time, and warn of any unusual patterns that might constitute a tax evasion/money laundering event, something that a conventional tax detection system couldn't detect. In addition, Large Language Models LLM like TaxTajweez show the potential to increase the effectiveness of tax compliance by offering precise and relevant guidance, which in turn would decrease compliance pressures and boost voluntary compliance (Mohammad Affan Habib et al., 2024).

Comparative Analysis: Traditional vs AI-Based Tax and Audit Systems

The table below enumerates the major differences between the conventional and AI tax and audit systems and the advantages of digital tax and audit systems in improving transparency and efficiency.

International Best Practices

AI has been widely adopted by the tax administration industry, with the OECD countries and emerging economies having a high level of AI adoption. The OECD Tax Administration 3.0 framework is focused on adaptable AI monitoring to improve compliance and detection processes (Belahouaoui & Alm, 2025). The adoption of AI-powered analytics in India has not only enhanced the efficiency of GST compliance but also helped mitigate fraud, providing Pakistan with lessons on how to seamlessly connect various tax systems (Rathi & et al., 2021). Likewise, Brazil's 'Malha Fina de Convênios' algorithm uses supervised machine learning to audit federal transfers, resulting in marked efficiencies and cost savings. The highlights from these foreign cases demonstrate the need for strong digital infrastructure, inter-agency data exchange, and investment in AI technologies for impactful fiscal reforms.

Feature	Traditional Tax and Audit Systems	AI-Based Tax and Audit Systems
Data Handling Method	Manual entry, fragmented databases, paper-based records	Automated ingestion, integrated big data platforms, real-time processing
Audit Selection Process	Random or subjective selection, limited risk assessment	Risk-based selection using predictive algorithms and machine learning
Speed and Efficiency	Slow, labor-intensive, significant processing delays	Rapid processing, continuous auditing, immediate anomaly detection
Accuracy Level	Prone to human error and inconsistent application of rules	High precision, consistent algorithmic application, reduced error rates
Transparency	Low visibility into decision-making processes, opaque procedures	Enhanced traceability, algorithmic accountability, clear audit trails
Corruption Risk	High due to discretionary powers and physical interactions	Reduced through automation and minimized human intervention
Cost-Effectiveness	High operational costs due manpower and physical infrastructure	Lower long-term costs through automation and optimized resource allocation
Real-Time Monitoring	Retrospective, post-period auditing	Continuous, real-time monitoring and immediate feedback

Barriers to Implementation in Pakistan

However, there are several challenges that hinder the implementation of AI-driven tax and audit systems in Pakistan. Lack of good digital infrastructure, such as the poor quality of broadband internet access, and outdated hardware, hinders the scalability of cutting-edge technological solutions (undefined & Shepel, 2024). One of the critical issues is cybersecurity and data privacy, as the inclusion of financial information means it needs to be secured to ensure it is not compromised and maintains public trust (Umbet et al., 2025). Entangled in a web of institutional interests and without strategic vision, institutional resistance to change is another obstacle to progress. Moreover, there is a shortage of data science and AI-related skilled human resources in the public sector. Another significant concern is data incompleteness, where disparate data silos make it difficult to perform a thorough analysis needed for effective AI application.

Policy Recommendations

The following policy recommendations will address these issues, and will help put the advantages of AI and digital systems into practice. First, integrating the FBR and AGP databases is essential to ensure that there is one fiscal database which enables the tax-payers to be profiled as a whole and for audit purposes (Ayyadurai et al., 2026). Second, there is a need to invest in the adoption of AI and big data analytics, including predictive modelling, machine learning tools to detect fraud and assess risk. Third, there is a need for extensive data science and cybersecurity capacity building and training to bolster existing staff as well as hire of data science and cybersecurity specialists. To safeguard sensitive information and promote responsible use of AI, it is essential to adopt more stringent cybersecurity measures and set up data governance protocols. Last but not least, the public-private partnership (P3) approach can be used to speed up the digital transformation and to tap the private sector's expertise and innovations to provide suitable solutions in Pakistan's fiscal environment.

Conclusion

The use of digital technologies and Artificial Intelligence (AI) in tax and audit procedures offers a valuable chance to improve transparency, effectiveness, and fiscal integrity in the public financial management system in Pakistan. Institutions like the Federal Board of Revenue (FBR) and the Auditor General of Pakistan (AGP) can increase revenue collection, minimize tax evasion losses and boost public confidence in government institutions by moving away from the traditional manual process and introducing AI-based, risk-based methods. However, enabling policy measures, such as Data integration, infrastructural, technical and organizational challenges must be addressed to achieve a successful implementation, including the development of policy and institutional capacity. In this regard AI must be seen as a strategic reform that aims to establish a more accountable, responsive, and efficient system of public financial governance, based on international best practices. Further studies are needed on the ongoing AI initiatives in Pakistan to assess their long-term impacts on tax compliance, audit efficiency, and fiscal results.

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