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Policy Brief

Use of AI in FBR to Increase Revenue

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Abstract

Pakistan’s Federal Board of Revenue (FBR) faces persistent challenges in tax collection, with the country's tax-to-GDP ratio stagnating at 10%—well below the global average of 15–20%. This shortfall is worsened by a largely informal economy (comprising nearly 70% of economic activity), widespread tax evasion, and underemployment. Addressing these structural inefficiencies is critical, as FBR plays a central role in ensuring fiscal stability and advancing Pakistan’s economic development agenda.

Artificial Intelligence (AI) presents a transformative opportunity to enhance tax compliance, detect fraud, and improve revenue forecasting. FBR has long struggled with systemic inefficiencies, tax evasion, and a narrow tax base. However, by applying AI-driven technologies such as predictive analytics, machine learning, and automation, Pakistan can significantly expand its tax net, increase compliance, and boost revenue collection. Implementing AI solutions could potentially double the country’s tax-to-GDP ratio within five years, strengthening transparency, efficiency, and public trust in the tax system.

This paper explores the benefits of AI integration in tax administration while addressing key implementation challenges, including data availability, technological infrastructure, and cybersecurity risks. It concludes with actionable recommendations for modernizing FBR, positioning it as a technology-driven authority capable of addressing Pakistan’s economic challenges through innovation and efficiency.

Introduction

Pakistan faces serious fiscal challenges, with its tax-to-GDP ratio at a staggering 10%, below the global average of 15-20%[1]. This low rating reflects weaknesses in the system, including a narrow tax base, broad taxation, and reliance on outdated practices. Despite strong economic performance, only 1.5% of Pakistan's population files income tax returns, indicating the ineffectiveness of the Federal Board of Revenue (FBR) to address non-compliance[2] .

Around the world, advanced technologies such as Artificial Intelligence (AI) are transforming tax administration by addressing similar challenges. For example, India's Goods and Services Tax Network (GSTN) is using AI and big data analytics to monitor compliance across its major tax jurisdictions, achieving an 18% reduction in tax evasion within two years of implementation. Similarly, HM Revenue and Customs (HMRC) in the United Kingdom is using AI to detect sophisticated tax evasion schemes among high-value taxpayers, ensuring compliance and transparency. In the United States, the Internal Revenue Service (IRS) is using AI-powered audit systems to detect fraudulent claims and identify uncollected income, improving administrative efficiency[3]. These success stories demonstrate the transformative potential of AI to transform tax systems, increase revenue, and enhance public trust.

For Pakistan, introducing AI is a unique opportunity to address long-term financial challenges. AI can streamline FBR's day-to-day operations, improve accounting efficiency, and apply risk-based intelligence to identify high-income taxpayers. AI-powered forecasting can improve financial forecasting, enabling strategic policy development to address emerging economic conditions[4]. In addition, AI-based systems can support the organisation of the informal economy[5]* by finding patterns in

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[1] Revenue Division. (2024). *Yearbook: Revenue Division 2024*. Islamabad: Federal Board of Revenue.
[2] Revenue Division. (2024). *Yearbook: Revenue Division 2024*. Islamabad: Federal Board of Revenue.
[3] Internal Revenue Service (IRS). (2023). *Annual Report on Tax Compliance and Fraud Detection*. Washington, DC: IRS Publications.
[4] Revenue Division. (2024). *Yearbook: Revenue Division 2024*. Islamabad: Federal Board of Revenue.
*President Pakistan Businessmen and Intellectuals Forum (PBIF), President All Karachi Industrial Alliance (AKIA), Senior Vice Chairman of the Businessmen Panel of FPCCI and former provincial minister, Mian Zahid Hussain said that 70 pc of Pakistan's economy is informal, which is of high concern.
[5] Pakistan Businessmen and Intellectuals Forum (PBIF). (2019, February 6). 70% of Pakistan's economy is informal, which is of high concern: PBIF. The Nation. Retrieved from https://www.nation.com.pk/06-Feb-2019/70-pc-of-pakistan-s-economy-is-informal-which-is-of-high-concern-pbif

undocumented transactions and providing immediate insight into tax evasion[6]. Blockchain technology, as part of an AI-assisted system, can improve transparency and reduce corruption by creating transparent transaction records, addressing the critical issue of public trust in the FBR[7]

Adopting AI in Pakistan's tax sector is not without its challenges. Lack of reliable data, outdated technical infrastructure, and resistance to change among stakeholders are major obstacles[8]Financial constraints and the high cost of implementing AI systems make it more problematic. Despite these challenges, the potential challenges of integrating AI are significant, including increasing compliance, reducing delays, and improving transparency. By learning from international models and adapting these technologies to Pakistan's unique circumstances, the FBR can improve its tax administration and position itself as a forward-looking institution that can meet the needs of the country's taxpayers.

Blockchain-based solutions provide a decentralised environment which can collectively validate trust-less records and tracking of transactions using distributed ledgers. This protocol is used to directly execute a contract and eliminate the need for intermediaries to facilitate the processes and improve operational productivity. The application of advanced cryptographic technologies and the distributed net structure of the blockchain system results in the probable minimisation of the risks of data manipulation and deed secure, self-protected documentation. Due to its applicability in time and cost savings as well as security improvements the blockchain approaches many transactions as the best solution for improving transactional functions across many industries.[9].

The present government in Pakistan is even working to make taxation a better system but there are problems which need better solutions such as inequality of tax collection, corruption at the time of tax collection cost of collection of taxes and protection of data. All these problems could be solved if tax authorities in Pakistan attempt to adopt blockchain technology in the taxation system. Due to blockchain technology, there is

[6] Federal Board of Revenue (FBR). (2024). *FBR Yearbook 2024*. Islamabad: Government of Pakistan.
[7] Federal Board of Revenue (FBR). (2024). *FBR Yearbook 2024*. Islamabad: Government of Pakistan.
[8] Federal Board of Revenue (FBR). (2024). *FBR Yearbook 2024*. Islamabad: Government of Pakistan.
[9] Okazaki, Y. (2018, June). Unveiling the potential of blockchain for customs. World Customs Organization Journal.

no possibility of corruption while using this technology because cannot go against ledgers like government and public, taxpayers directly pay their taxes to the government, and this is secured through computers based on blockchain technology. If Pakistan is collecting taxes through a blockchain, then all the tax collection will be from the taxpayer to the government which in essence means all the work will be handled by computers through the blockchain. Consequently, the collection cost of the tax will reduce.[10].

This Paper explores that artificial intelligence is needed to transform the FBR into a modern, technology-driven tax authority. Using AI to detect fraud, track taxpayer profiles and compliance will help the FBR overcome strategic weaknesses, expand the tax base and address fiscal deficits. Pakistan will not only increase tax revenues but also restore public confidence in its tax system, laying the foundation for sustainable economic development.

Problem Statement

It is a compulsory payment for the fundamental products of an economy that individuals are obliged to make, that will effectively facilitate the performance of various financial activities within a certain region. Taxes can be on merchandise, firms, people or social orders as imposed by public authorities. The structure of the taxation system in Pakistan is similar to some other types of tax systems existing in the world. The tax revenue of government can be characterised into two general classes: These are direct taxes; and indirect taxes. The direct taxes consist of the emoluments, agency commission, profit on sale, and profit from the property whereas the indirect taxes are included under the sales tax payable on commodities and services.[11].

The Federal Board of Revenue (FBR), tasked with addressing these issues, is hampered by reliance on outdated systems, manuals and documentation, and inadequate technical resources. Tax evasion and reporting inefficiencies are often caused by a lack of understanding and accountability by the tax authorities. These

[10] Salman., A., Choudhary, S,A., Blockchain to Block Tax Evasion. 2021. Available at https://economicaffairs.com.pk/blockchain-to-block-tax-evasion/

[11] Salman., A., Choudhary, S,A., Blockchain to Block Tax Evasion. 2021. Available at https://economicaffairs.com.pk/blockchain-to-block-tax-evasion/

inefficiencies cost the economy billions of rupees each year, weaken Pakistan's fiscal health, and erode public confidence in the tax system.

The problem lies in the lack of AI-based solutions in the FBI's efforts has led to delays in audits, inaccurate revenue projections, and a failure to comprehensively detect and control tax fraud. In addition, the lack of centralised data storage and security hampers data collection and analysis, and reduces the FBI's ability to act quickly. Stakeholder resistance to change, as well as financial constraints and cybersecurity risks, pose challenges in implementing a tax system that supports modern technology.

The `State of Revenue Collection in Pakistan

A low compliance level, restrictive revenue base and structural problems define revenue mobilisation in Pakistan. FBR record shows only 1 % of the Pakistan population files returns of income tax and still so much economic activities are realised. Moreover, tax evasion and underreporting are two common and dispersed forms that are evident in various stages of the tax system. These inefficiencies were estimated to cost billions of rupees annually, increase the countries fiscal deficit.

Depending on the area of application in the context of tax administration, AI technologies can be addressed. The ability to perform repetitive tasks that normally would take ages and lead to exaggerated estimations, ability to study big data and outline patterns of tax evasion, AI can enhance the efficiency of tax gathering and regulation. This is in line with other objectives of the National Digital Policy in transforming the public sector in Pakistan.

FBR Revenue Collection vis-à-vis Target FY2023-24

Record breaking federal tax collection of Rs 9.014 trillion achieved in fiscal year 2023-24 hit a record during this budget speech. The FBR also performed well and attained 100.5% of the revised target as is evident from table: 1. However, regarding direct taxes, an amount of Rs. 809.7 billion was collected out of the target which was 121.8% more than the expected amount.

Table 1: FBR Tax Collection achievement

Tax Heads	*Target (Rs. Billion)*	*Collection (Rs. Billion)*	*Absolute (Achievement) (Rs. Billion)*	*Percentage (Achievement)*
Direct Taxes	3,721.00	4,530.70	809.7	121.8
Sales Tax	3,607.00	3,086.80	-520.2	85.6
Federal Excise	600	577.5	-22.5	96.3
Customs Duty	1,324.00	1,104.10	-219.9	83.4
Total	9,252.00	9,299.10	47.1	100.5

Source: Yearbook, Revenue Division, 2024[12]

The FBR in the FY 2023-24 collected Rs. 9299.1 billion as against the target of Rs. 7196.8 billion during the last financial year thus showing a growth rate 29.8 % . On an absolute basis, this constitutes a phenomenal increase of Rs. 2.1 trillion within one year only. All major tax categories contributed significantly to this performance: FED increased to 56.1%, direct taxes were up by 38.5%, the sales tax by 19.1%, while customs duty by 18.5% comparing the figures in Table 2. This important success can be attributed despite the country going through an economic downturn.

FBR to Leverage AI for Examining

The Federal Board of Revenue in Pakistan is modernising the checking of taxes in a most scientific way, thanks to Artificial Intelligence. The main purpose of its updating will be to give precision and efficiency to audits. A system based on AI properly scrutinises declared incomes and assets, points out the mistakes, and detects possible tax evasion in an automated manner. There is provision for precise scrutiny of income tax returns on certain prescribed standards, lessening the chances of human error. Key areas for the AI-driven audits include major banking transactions, property sales, vehicle purchases, and foreign travel, which can demonstrate unreported taxable income. This proactive approach is intended to facilitate individuals and businesses in adhering to the tax regulations, thereby contributing to an increase in national revenue. To ensure strict adherence to the rules, the FBR has announced that the last date of filing income tax return for the year 2024, September 30, would not be extended. Spokesperson Bakhtiar Muhammad shed light on the importance of

[12]FBR. Yearbook 2023-2024. Available at https://download1.fbr.gov.pk/Docs/20241151611531299 7FBR-REVENUE-DIVISION-YEAR-BOOK2023-24.pdf

timely submission of things, linking this to Pakistan's bigger economic objectives, including financial stability, infrastructure creation, and community assistance. This initiative is part of a broader strategy to modernise FBR operations using emerging technologies such as data analytics and machine learning.[13]

The FBR is also making its digital tax submission system, the Iris portal, better to help users, lower mistakes, and make it easier to access. The organisation is also investing in training its workers to create a skilled team that can handle today's tax needs. Using AI is an important move for being responsible, open, and collecting more money, which fits with Pakistan's goals for stability and growth.[14].

Artificial Intelligence (AI) can play a transformative role in building taxpayer trust in Pakistan by improving transparency, accountability, and fairness in tax administration. AI-powered systems enable real-time fraud detection and objective, unbiased audit options to ensure tax compliance. Combining blockchain technology with artificial intelligence results in counterfeit certificates, and accurate tax information, reducing concerns about corruption and data manipulation. AI-powered chatbots simplify the tax process, enhance taxpayer experience through usability, and support multiple languages. Additionally, predictive analytics inform policy decisions, while security measures protect tax data, increasing trust in the system. By ensuring transparency, accountability and efficiency, AI encourages voluntary compliance and increases public confidence in the Federal Bureau of Revenue (FBR).

The Promise of AI in Tax Administration

The use of artificial intelligence in tax systems around the world has the potential to fundamentally change traditional tax administration models, bringing about greater efficiency, transparency, and responsiveness to modern challenges. Tax authorities in many countries are using AI technologies to improve operational efficiency, enhance compliance, and increase revenue. The above developments provide ample scope for the Federal Board of Revenue (FBR) to implement artificial intelligence in its tax administration processes to curb inefficiencies and create a more robust system. The

[13] Pakrevenue. FBR to Leverage AI for Examining TY 2024 Income Tax Returns.September 22, 2024. Available at: https://pkrevenue.com/fbr-to-leverage-ai-for-examining-ty-2024-income-tax-returns/
[14] Pakrevenue. FBR to Leverage AI for Examining TY 2024 Income Tax Returns.September 22, 2024. Available at: https://pkrevenue.com/fbr-to-leverage-ai-for-examining-ty-2024-income-tax-returns/

following are some of the key areas where AI can greatly impact the working of the FBR:

One of the most promising applications of artificial intelligence lies in taxpayer profiling and risk assessment. By analysing large historical databases, AI algorithms can sort taxpayers based on their respective risk profiles, thus identifying those who show a higher likelihood of tax evasion or underreporting income. This systematic approach enables effective audits and enforcement actions so that resources are focused on high-risk cases rather than being diluted across the entire population of taxpayers.

Artificial intelligence holds a critical position in the identification and prevention of fraudulent activities. Machine learning algorithms are capable of detecting irregularities in tax submissions, spotting fabricated claims, and highlighting atypical transactions. As an example, the US Internal Revenue Service uses artificial intelligence systems to uncover millions of fraudulent tax returns every year. The same application on FBR may go a long way in reducing the short collection of revenue due to tax fraud and evasion.

Another critical application lies in revenue forecasting and policy formulation. AI-driven predictive analytics can analyse historical trends, economic indicators, and taxpayer behaviour to give accurate revenue forecasts. This capability not only aids in fiscal planning but also supports evidence-based policymaking, ensuring that tax policies are responsive to emerging trends and economic realities.

On operational efficiency, AI has a very important role to play, especially in automating regular processes. Technologies such as Robotic Process Automation are capable of managing repetition- and labour-intensive tasks including data entry, reconciliation, and compliance verification. This sort of automation not only reduces the error rate but also releases essential human resources to be able to focus on strategic and high-value tasks involving critical decision-making.

AI can also improve compliance support by bettering taxpayer interactions. AI-driven chatbots and virtual assistants can help answer taxpayer queries in real time, walk them through filing processes, and provide personalised advice depending on the tax situation of each individual. This not only enhances the user experience but also encourages voluntary compliance by making the process more accessible and less burdensome.

Global Case Studies: Lessons for FBR

The lessons from countries leading in the adoption of artificial intelligence in tax administration practices can be drawn by the Federal Board of Revenue. For example, Her Majesty's Revenue and Customs in the United Kingdom uses AI technology to identify complex tax evasion schemes to ensure high net worth individuals and entities are compliant with the laws. Similarly, the Goods and Services Tax Network in India uses big data analytics and artificial intelligence to monitor compliance in its large tax base. These initiatives show how technology can help prevent evasion, increase voluntary compliance, and result in a fairer tax system.

The experiences of these countries show the importance of investment in artificial intelligence infrastructure and human capital. In the case of FBR, the adoption of AI solutions would require collaboration with technology firms, investment in data analytics systems, and improvement in the skills of personnel to be able to manage and interpret insights generated by AI. Further, detailed regulatory frameworks would be needed to ensure data privacy and deal with ethical concerns related to the use of AI.

AI offers transformative possibilities for tax administration, and FBR stands to benefit greatly by integrating these technologies. Be it improved fraud detection, better services for taxpayers, or smarter policy formulation, AI can help drive greater efficiency, transparency, and fairness in Pakistan's tax system. By learning from global success stories and tailoring AI applications to local challenges, FBR can position itself as a modern, technology-driven tax authority capable of meeting the demands of a dynamic economic landscape.

Localisation Potential of AI in Pakistan Tax Administration

Pakistan’s tax system, especially its large-scale economy that accounts for over 70% of the economy, faces special challenges. Businesses largely operate outside the income tax system, resulting in a significant impact on the province’s revenue loss[15] (Ministry of Revenue, 2024). Artificial Intelligence (AI) can play a transformative role in

[15] Revenue Division. (2024). Yearbook: Revenue Division 2024. Islamabad: Federal Board of Revenue.

addressing these issues by offering strategic solutions based on Pakistan's unique context.

Using AI to address tax evasion in the informal economy

AI can detect patterns of tax evasion in informal activities by analysing data from business finances, utility bills, and evidence.

Transaction Analysis: Machine learning algorithms can analyse multiple bank transactions to identify differences between income and actual usage patterns. This method can help identify individuals and companies operating illegally and evading taxes.

Utility data collection: AI tools can collect utility data to identify electricity bills or unregistered gas users. By submitting this information along with FBR documents, previously undocumented areas can be brought into the tax system.

Retail sector monitoring: AI-powered tools can monitor point-of-sale (POS) information to ensure compliance for small businesses, especially those selling illegally in dense cities.

Reducing corruption in tax authorities through blockchain

Corruption in tax authorities undermines public trust and leads to lost revenue. Blockchain technology combined with AI offers the promise of transparency and accountability:

Tamper-proof records: Blockchain creates immutable records of tax changes to ensure that no individual or group can change a profile without being detected. This feature is especially important in Pakistan, where manipulation of tax information and allegations of bribery are common.

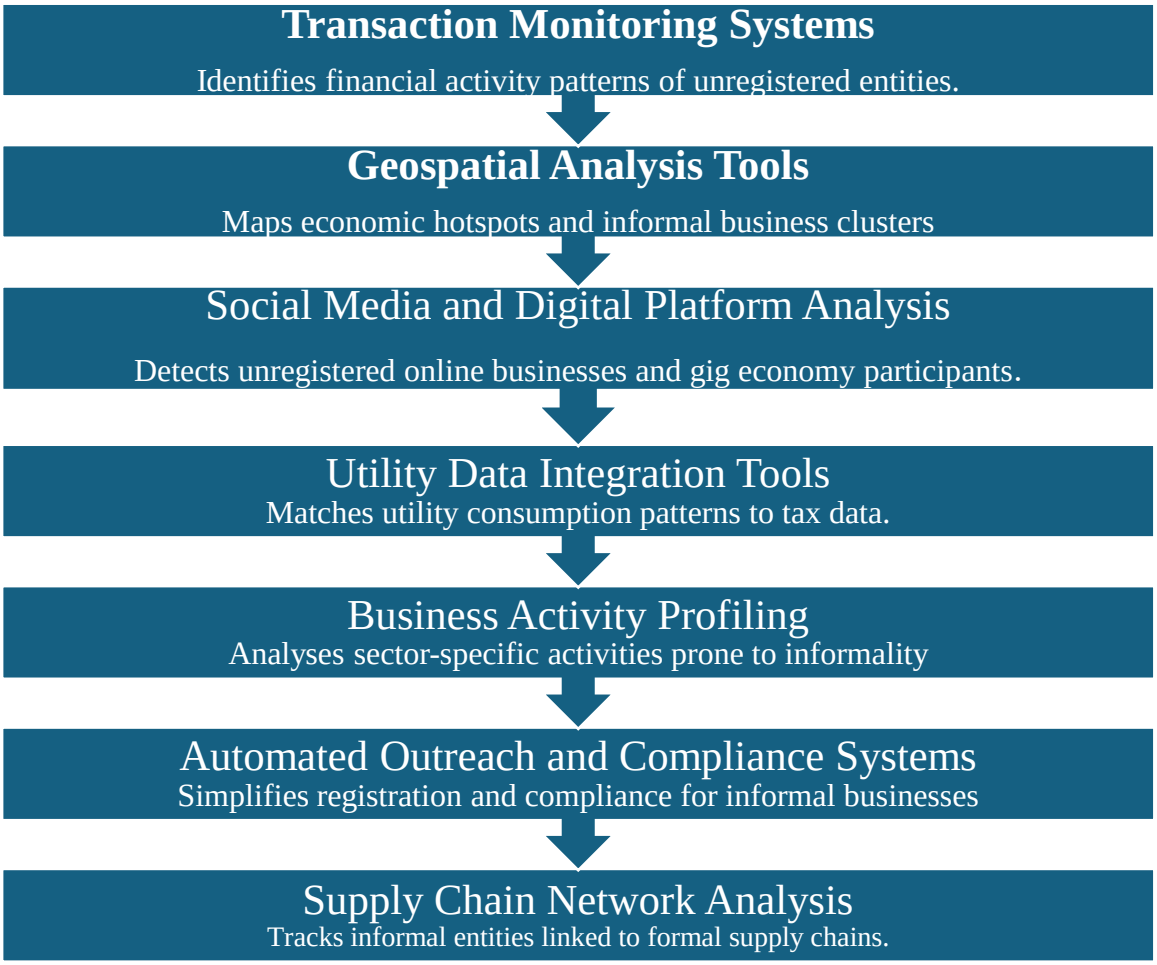
Direct tax payments: By paying taxes directly from taxpayers to the government, blockchain eliminates intermediaries and reduces opportunities for corruption. For example, blockchain-based smart contracts can automate tax processes and ensure compliance without human intervention.

Real-time auditing: AI-powered blockchain systems can audit tax records in real time, revealing suspicious transactions and irregularities. Such a system will make it harder

for tax officials to engage in corrupt practices, thus promoting fairness in the Federal Tax Service.

Chain of AI Tools for Formalising Pakistan's Informal Sector

Pakistan's informal economy is a major source of income, accounting for over 70% of its total economy. To regulate this sector, the Federal Board of Revenue (FBR) can use well-designed AI tools to identify and include undocumented economic activities in the tax system. Below are AI tools and their applications:



Challenges in Adopting AI in FBR

While the potential is large, its implementation in FBR faces many challenges:

1. Data Availability and Quality: Much of Pakistan's economy is informal and not documented digitally, creating challenges for AI-driven analysis.

2. Technological Infrastructure: FBR's outdated infrastructure requires modernisation to support AI tools, including high-speed servers and secure databases.
3. Resistance to Change: IA and resistance to adopting new technologies may slow AI implementation.
4. Cybersecurity Risks: Moving to AI-powered systems increases the risk of breaches, hence the need for better security measures.
5. Financial Constraints: The cost of acquiring and maintaining AI technology's limited budget, especially without external funding.

Revenue Losses Due to Tax Evasion in Pakistan

Pakistan loses a lot of money due to tax evasion and under-reporting. It is estimated that the country loses PKR 3.2 trillion (equivalent to 7% of GDP) annually due to tax evasion and tax evasion[16]. The informal economy, which accounts for 70% of economic activity, is underdeveloped, contributing to the economic slowdown. For example, industries such as retail, manufacturing, and real estate contribute significantly to the economy, but are largely unrecorded in the tax books. Closing these deficits is crucial for the stability of the country's economic governance.

Table 2: International Benchmarks of AI's Fiscal Impact

Country	AI Implementation	Key Outcomes
India[17]	AI and big data analytics to monitor compliance across millions of taxpayers.	18% reduction in tax evasion.
		Additional revenue collection of INR 1.6 trillion (USD 20 billion) annually.
		Improved detection of fraudulent invoices and mismatched returns.
United Kingdom[18]	AI for fraud detection and monitoring of high-net-worth individuals and corporations	Identification of GBP 3 billion (USD 4 billion) in underreported income (2022).

[16] Profit.March 25, 2024. Available at: https://profit.pakistantoday.com.pk/2024/03/25/pakistan-confronts-rs5-8tr-tax-evasion-challenge-affecting-gdp/
[17] Goods and Services Tax Network (GSTN). (n.d.). AI Applications in Indian Tax Compliance. Retrieved from [insert source].
[18] Her Majesty's Revenue and Customs (HMRC). (2023). Annual Report on Fraud Detection and Compliance. Retrieved from [insert source].

		40% reduction in manual audit workload through streamlined processes.
United States[19]	AI-driven audit selection and fraud detection systems.	Detection of over USD 10 billion annually in fraudulent claims and underreported income.
		30% reduction in tax filing processing times, enhancing taxpayer satisfaction.

Ethical Implications of Using AI in Tax Administration

The integration of artificial intelligence (AI) into tax administration has significant benefits, but it also raises important ethical issues, particularly related to data privacy, misuse of taxpayer information, and accountability in decision-making. These challenges need to be addressed to ensure that AI applications are aligned with the principles of fairness, transparency, and trust. While artificial intelligence has great potential to transform tax administration, addressing its ethical implications is critical to its successful implementation. By adopting a robust data protection framework, ensuring transparency and accountability, and involving stakeholders in decision-making, the FBR can harness the power of artificial intelligence while protecting taxpayers' rights. These efforts will not only reduce risk but also build public trust, which is the cornerstone of the success of the new tax system.

Table 3: Ethical Implications

Ethical Concern	Description	Proposed Solutions
Data Privacy and Security Risks	Unauthorised access to sensitive taxpayer data.	Establish comprehensive data protection frameworks (e.g., GDPR standards).
	Inadequate anonymisation increases identity theft risks.	Implement end-to-end encryption and secure storage protocols.
	Overreach in data collection.	Use role-based access controls to limit data access.
Misuse of Taxpayer Information	Risk of algorithmic bias disproportionately targeting certain groups.	Develop and enforce ethical AI standards for fairness and transparency.
	Potential political manipulation of AI systems.	Create independent oversight bodies to audit AI systems.
		Ensure AI systems provide explainable outputs for decision justification.

[19] Internal Revenue Service (IRS). (2023). Tax Fraud Detection and Automation Report. Washington, DC: IRS Publications.

Accountability and Transparency	Lack of clarity about who is responsible for AI-driven decisions.	Implement human-in-the-loop systems for critical decisions.
	Confusion among taxpayers regarding the role of AI vs. humans.	Publish transparency reports on AI system use, performance, and challenges.
Public Trust and Acceptance	Risk of taxpayer resistance due to perceptions of intrusiveness or unfairness.	Launch public awareness campaigns to educate taxpayers on AI's benefits.
		Engage stakeholders (taxpayers, civil society, data protection experts) in AI system design.
		Create feedback mechanisms to address taxpayer concerns.

Conclusion

The integration of artificial intelligence (AI) into the Federal Board of Revenue (FBR) represents an important step towards transforming Pakistan's tax administration into a modern, technology-driven institution. AI's ability to analyse large amounts of data, detect fraud, predict revenue trends, and improve compliance will enable the FBR to address systemic inefficiencies and broaden the country's tax base. By formalising 70% of Pakistan's informal economy and reducing tax evasion, AI offers the potential to double the tax-to-GDP ratio within five years, bringing Pakistan in line with international standards

Leveraging artificial intelligence (AI), the Federal Board of Revenue (FBR) can set reform targets to improve tax administration in Pakistan. AI has the potential to double the country's tax revenue to GDP ratio from the current 10% to 20% in five years, bringing it in line with the global average. AI intervention can reduce tax exemptions by 20%, which will reduce economic efficiency, which accounts for 70% of economic activity. In addition, the tax base can be expanded by increasing the number of registered taxpayers by 50%, supported by structural analysis and risk assessment tools. AI can also improve operational efficiency by reducing analytical processing time by 30%, allowing for faster detection and resolution of conflicts. Furthermore, the implementation of a chaos-free tax collection system such as blockchain will increase taxpayer trust and rebuild public confidence in tax administration. These measurable

goals demonstrate the transformative potential of AI for fiscal stability and sustainable economic growth.

These changes are not just operational, but also strategic—they promote transparency, restore public trust, and equip the FBR to meet the changing needs of a changing economy. AI can enable the FBR to become a proactive tax authority that can ensure fiscal stability while driving sustainable economic growth. With the help of AI, FBR has the opportunity to redefine its role as a catalyst for sustainable development and a model of technological excellence in public administration.

Information Sharing and Knowledge Transfer Mechanism

To enhance intellectual skills in tax administration in Pakistan, the Federal Board of Revenue (FBR) should collaborate with international governments, technology companies, and research organisations that have been successful in exploiting fraud for corporate tax compliance purposes. . These partnerships will facilitate transfer of expertise, access to proven technologies, and solutions to Pakistan's unique challenges.

Table 4: Collaboration with Government and Tax Authorities

Category	Rationale	Proposed Collaboration	Expected Outcome
Partnerships with Governments and Tax Agencies			
India's GSTN	Successfully integrated AI and big data analytics to improve compliance and reduce tax evasion.	Establish bilateral knowledge-sharing programs, joint workshops, and training programs for FBR officials.	Improved understanding of AI-driven compliance monitoring and fraud detection.
UK's HMRC	Uses AI to identify complex tax evasion schemes among high-net-worth individuals, focusing on algorithmic transparency.	Sign an MoU to exchange best practices and insights into ethical AI deployment. Guide explainable AI.	Enhanced transparency and accountability in AI-driven decision-making.

US IRS	Employs AI for audit selection and fraud detection, uncovering billions in underreported income annually.	Engage in joint research projects to adapt AI tools for high-value undeclared transaction detection in Pakistan.	Development of customised AI models for fraud detection in the informal economy.
Collaborations with Technology Firms			
IBM Watson	Offers predictive analytics and decision-making solutions widely used in public sector projects.	Partner with IBM to develop AI models for taxpayer profiling and revenue forecasting. Provide cloud-based systems and training.	Faster deployment of AI-driven systems with access to world-class expertise.
Google AI and TensorFlow	Widely used for developing scalable AI solutions.	Engage Google to design machine learning models for analysing taxpayer data and identifying compliance risks.	Scalable AI models to monitor the informal economy effectively.
Blockchain Firms (e.g., Chainalysis, ConsenSys)	Specialise in creating secure, tamper-proof transaction systems.	Partner with blockchain firms to implement distributed ledger systems for tax collection and auditing.	Enhanced security and transparency, reducing corruption and promoting taxpayer trust.
Knowledge Exchange with Research Institutions			
AI Research Labs	Global centres such as MIT's AI Lab and Stanford's Human-Cantered AI Institute lead in developing innovative AI solutions.	Collaborate with these labs to develop tailored solutions for Pakistan's needs.	Access to cutting-edge AI technologies and insights into public finance applications.
Regional Institutions	South Asian universities and think tanks specialise in region-specific AI solutions.	Engage with them to create models for integrating AI in tax administration.	Context-sensitive solutions for managing informal economies in developing countries.
Joint Pilot Projects and Training Programs			
Proposed Pilot Projects	Test AI tools in fraud detection and taxpayer profiling.	Launch joint projects with GSTN, HMRC, or the IRS to validate AI tools.	Real-world validation of AI tools before full-scale deployment.

Training Initiatives	Build FBR's workforce capacity in AI systems.	Organise training programs and certifications in collaboration with technology firms and tax agencies.	A skilled workforce capable of managing AI-driven tax systems.

Successfully integrating artificial intelligence (AI) into the Federal Board of Revenue (FBR) requires strong engagement from key stakeholders, including businesses, taxpayers, policymakers, and technology partners. Communication, collaboration, and knowledge are essential to build trust, drive buy-in, and ensure the successful implementation of AI innovations. Here are key strategies for engaging stakeholders:

Key Metrics for Measuring the Success of AI Operations

To effectively integrate artificial intelligence (AI) into the Federal Reserve System (FBR), certain metrics need to be tracked to measure progress and impact. These measures provide effective metrics for success:

Reducing tax evasion

AI-enabled systems should reduce tax evasion cases. The number of tax filings is expected to decrease by 20% in three years, demonstrating the effectiveness of predictive analytics and fraud detection tools. This can be tracked by analysing historical and real-time data on crimes detected by AI systems.

Increase tax return filing volume

One of the main goals of AI integration is to increase the number of tax return filings each year. By applying AI to the disclosure and identification of at-risk taxpayers' plan, the number of tax refunds will increase by 50 percent in five years, especially for the same individuals and businesses that were previously outside the tax net.

Speed up audit and processing efficiency

AI-powered automation should speed up audit and tax collection. The 30 percent reduction in average processing time for these projects over three years will demonstrate the efficiency of the technology and machine learning algorithms.

Increase tax rates

Improved compliance and fraud detection through AI will increase tax efficiency by 20-30 percent in five years. This growth can be seen both in previously unreported income and in new activities being introduced into the tax system.

Formalising the Informal Economy

AI's ability to analyse big data can help account for a significant portion of Pakistan's 70% informal economy. The intervention plan calls for bringing at least 10% of the informal economy into the formal tax system within five years.

Building Public Trust

AI should also build public trust in the FBR by ensuring transparency and fairness. Taxpayer satisfaction, as measured by regular surveys, is expected to increase by 25% in five years, indicating increased trust in transparency and accountability.

Recommendations and The Way Forward

FBR will need to follow a phased approach to successfully implement AI, which would include zing Tax Records and creating a centralised, secure database to serve as the foundation for AI applications.

- Establish a single, secure database that supports the availability and quality of data needed for the many AI-driven analyses. Part of this foundational step provides support for AI applications and taxpayer profiling and risk assessments.
- Upgrading the technological infrastructure of FBR, including high-speed servers, secure databases, and advanced computing systems, to integrate AI tools seamlessly.
- Facilitate training for FBR staff in data analytics, machine learning, and artificial intelligence technologies to cultivate internal proficiency and diminish reliance on external consultants.
- Deploy artificial intelligence in a few selected areas, like fraud detection or audit selection, to test its effectiveness and improve its deployment before wider national implementation.
- Implement strong cybersecurity to safeguard AI systems and sensitive taxpayer data from breaches in order to earn trust in the system.
- Implement artificial intelligence-driven chatbots and virtual assistants in order to improve taxpayer services, easing the filing procedures and answering queries in real-time to foster compliance.

Action Matrix

Action Area	Pathways to Solution	How to Implement Each Solution	Actor Responsible	Timelines
Fraud Detection	Launch AI-driven pilot projects to identify tax fraud.	Develop machine learning models to analyse high-value transactions and flag discrepancies.	FBR AI Unit, IT Department	0–2 Years (Short-Term)
Data Centralisation	Consolidate taxpayer data into a centralised, secure database.	Migrate all existing taxpayer records into a standardised digital format. Resolve inconsistencies in datasets.	FBR IT Department	0–2 Years (Short-Term)
Public Trust and Engagement	Conduct workshops and public awareness campaigns to address privacy concerns and explain AI benefits.	Organise taxpayer seminars and Q&A sessions. Publish transparency reports on AI initiatives.	FBR Communications and Outreach Division	0–2 Years (Short-Term)
Technological Infrastructure Upgrades	Invest in high-speed servers, secure cloud platforms, and blockchain integration.	Partner with IT firms for procurement. Ensure cybersecurity protocols are embedded in system upgrades.	FBR IT Department, External Consultants	2–5 Years (Medium-Term)

Workforce Training	Build internal capacity in AI, machine learning, and blockchain technologies.	Conduct regular training programs in collaboration with universities and tech firms.	FBR Training and HR Department	2–5 Years (Medium-Term)
Regulatory Frameworks	Develop policies for data privacy, ethical AI use, and algorithm accountability.	Formulate AI governance policies aligned with international standards (e.g., GDPR).	FBR Legal Division, Data Protection Units	2–5 Years (Medium-Term)
Comprehensive AI Deployment	Integrate AI into all tax processes, including revenue forecasting, compliance monitoring, and taxpayer profiling.	Use predictive analytics to anticipate tax trends. Automate routine audits and enhance taxpayer services.	FBR AI Unit, IT Department	5+ Years (Long-Term)
Taxpayer Services	Deploy AI-powered chatbots and virtual assistants for real-time support.	Develop multilingual chatbots for FAQs and filing guidance. Test and refine virtual assistants.	FBR IT and Customer Service Units	5+ Years (Long-Term)
Performance Monitoring	Establish metrics for evaluating AI impact, such as increased revenue and reduced evasion.	Create dashboards for tracking KPIs. Use stakeholder feedback to improve AI systems.	FBR Performance Monitoring Unit	5+ Years (Long-Term)

About the Authors

Dr Aneel Salman holds the distinguished OGDCL-IPRI Chair-Economic Security at the Islamabad Policy Research Institute (IPRI) in Pakistan. As a leading international economist, Dr Salman specialises in Monetary Resilience, Macroeconomics, Behavioural Economics, Transnational Trade Dynamics, Strategy-driven Policy Formulation, and the multifaceted challenges of Climate Change. His high-impact research has been widely recognised and adopted, influencing strategic planning and policymaking across various sectors and organisations in Pakistan. Beyond his academic prowess, Dr Salman is a Master Trainer, having imparted his expertise to bureaucrats, Law Enforcement Agencies (LEAs), military personnel, diplomats, and other key stakeholders furthering the cause of informed economic decision-making and resilience.

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