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The Impact of Artificial Intelligence in Combating Tax Evasion in Iraq

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Abstract:

General Framework: Tax evasion represents a critical challenge to Iraq's economic stability and tax justice, artificial intelligence (AI) offers a transformative opportunity to enhance tax compliance mechanisms.

Importance: The significance of this study lies in assessing the potential for integrating AI to combat tax evasion in Iraq, focusing on bridging the gap between technological capabilities and legal-ethical requirements, and the urgent need for legislative reform.

Problem: This research explores the potential role of artificial intelligence in combating tax evasion in Iraq by analyzing its technical efficiency, legal compatibility, and ethical implications within the Iraqi tax framework, highlighting legislative gaps and concerns regarding transparency and taxpayer rights.

Methodology: The study employed a mixed-methods design, integrating a quantitative survey (Likert-scale questionnaire administered to 200 General Tax Authority employees and certified accountants) with qualitative insights from semi-structured interviews with legal experts,

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quantitative data were analyzed using SPSS (descriptive statistics, T-tests, correlation, regression), and qualitative data via thematic analysis. **Key Findings:** The findings highlighted significant legislative gaps, with existing tax laws lacking explicit provisions to govern AI-driven tax enforcement (mean 2.6), despite AI's proven capability in detecting complex evasion patterns (mean 4.2), concerns persist regarding algorithmic transparency, taxpayer rights, and bureaucratic (mean 4.4) and infrastructural barriers, statistical analysis revealed a strong correlation between AI efficiency and ethical safeguards ($r = 0.45$), and a significant impact of technical efficiency ($\beta = 0.62$) and ethical safeguards ($\beta = 0.22$) on AI effectiveness. **Recommendations:** The study concluded that Iraq must undertake legislative reforms, leveraging international best practices (such as Estonia's model and GDPR-like standards), to create a balanced regulatory framework that enhances AI's effectiveness while protecting taxpayer rights, this includes amending tax procedure laws, establishing an independent oversight body, and ensuring algorithmic accountability.

Keywords: Artificial intelligence, tax evasion, legal framework, tax compliance, regulatory challenges.

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Chapter 1

1.1 Introduction

Tax evasion represents a significant legal and economic challenge in Iraq, undermining the state's financial stability and distorting the principles of tax justice , as a violation rooted In systemic inefficiencies and deliberate misconduct, tax evasion deprives public treasuries of essential revenues, exacerbating fiscal deficits and hindering developmental initiatives (Ballamudi, 2019) and Iraqi tax authorities face multifaceted challenges in detecting and addressing these violations, compounded by outdated administrative frameworks and limited technological integration and In this context, artificial intelligence (AI) presents a transformative opportunity to redefine tax compliance mechanisms, offering advanced tools for data analysis, pattern recognition, and predictive modeling (Awofala, 2024) , however, the adoption of such technologies must navigate complex legal landscapes, balancing efficiency gains with constitutional safeguards for taxpayer rights and data privacy (Fidelangeli & Galli, 2021), and Integration of AI into Iraq's tax administration system raises critical questions about its compatibility with existing legal frameworks , while international practices, like those analyzed by Saragih et al. (2023), demonstrate AI's potential to modernize tax systems through automated fraud detection and risk assessment, Iraq's legislative framework remains ill-equipped to accommodate these innovations and current laws lack explicit provisions governing AI's role In tax enforcement, creating ambiguities in accountability, transparency, and procedural fairness (IBIYEYE & IBIYEYE, 2024) , furthermore, constitutional principles enshrining data protection and privacy, as

highlighted in comparative studies by Ebers and Tupay (2023), necessitate careful calibration to ensure AI applications do not infringe on individual rights , for instance, algorithmic auditing tools, as discussed by Kokina and Davenport (2017), could enhance audit accuracy but risk overreach without robust legal safeguards.

The importance of this research lies in Its dual focus: addressing the technical efficacy of AI in combating tax evasion while anchoring its application within a rights-based legal framework , by examining the compatibility of AI tools with Iraqi tax legislation and international standards, the study seeks to bridge gaps between technological capability and legal legitimacy and this urgency is underscored by Iraq's reliance on fragmented tax laws, which fail to address modern financial crimes or cross-border evasion tactics , lessons from jurisdictions like Indonesia, where AI-driven tax systems have improved compliance rates (Adelekan et al., 2024), provide critical insights for Iraq's policy reforms,similarly, challenges faced by other nations, like balancing AI efficiency with ethical constraints (Yalamati, 2024), offer valuable perspectives for Iraq's legislative adjustments and research objectives are threefold , first, to evaluate the alignment of AI technologies with Iraq's tax laws, emphasizing procedural fairness and accountability,second, to assess AI's practical efficacy in identifying evasion patterns, drawing on case studies like the use of machine learning in corporate tax audits (Yalamati, 2023) and third, to propose legal reforms that harmonize technological adoption with constitutional safeguards, ensuring taxpayer rights are not subordinated to administrative expediency (Awofala, 2024) and this requires a nuanced analysis of Iraq's legal architecture, including data protection laws and international treaties, to craft a regulatory environment conducive to innovation without compromising justice and

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in synthesizing these elements, the study adopts a multidisciplinary approach, merging legal analysis with technological critique , by interrogating the intersections of AI, tax law, and human rights, It aims to contribute to a broader discourse on equitable governance in the digital age (Ballamudi, 2019) and the findings are expected to inform policymakers, legal practitioners, and technologists, fostering a collaborative pathway toward a resilient and just tax system In Iraq .

1.2 The Importance of the Research:

The importance of this research lies in several key aspects:

- **Addressing a critical challenge:** The research addresses the problem of tax evasion, which poses a serious challenge to Iraq's economic stability and tax justice, depriving the public treasury of essential revenues.
- **Bridging the gap between technology and law:** The research dually focuses on the technical efficiency of artificial intelligence in combating tax evasion while simultaneously anchoring its application within a rights-respecting legal framework, it seeks to bridge the gaps between technological capability and legal legitimacy.
- **The urgent need for legislative reform:** The study's importance is highlighted by Iraq's reliance on fragmented tax laws that do not address modern financial crimes or cross-border evasion tactics.
- **Providing insights for policymakers:** The findings are expected to inform policymakers, legal practitioners, and technologists, fostering a collaborative pathway toward a resilient and just tax system in Iraq.

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- **Contributing to the discourse on equitable governance:** By interrogating the intersections of AI, tax law, and human rights, the research aims to contribute to a broader discourse on equitable governance in the digital age.

1.3. Problem Statement:

The problematic of this research manifests in the multifaceted challenges hindering the optimal utilization of artificial intelligence in combating the deeply rooted phenomenon of tax evasion within the Iraqi financial system, at its core, a profound legislative gap emerges, as the prevailing tax legal framework, particularly Income Tax Law No. (113) of 1982 and its supplementary laws, was formulated in an era preceding the advent of these advanced technologies, consequently, it lacks any explicit or implicit provisions governing the use of artificial intelligence in tax collection and enforcement processes, this legal vacuum generates ambiguity regarding the foundations of accountability for decisions made by intelligent systems, the transparency of the algorithms employed, and the guarantees of procedural fairness for taxpayers, also current laws, with their focus on traditional manual mechanisms, appear incapable of keeping pace with the increasing complexities of modern tax evasion methods, especially those exploiting digital tools and cross-border transactions, this situation raises a fundamental question about how to balance the potential gains from AI's efficiency in detecting evasion and improving compliance with the necessity of protecting taxpayers' fundamental rights, particularly the right to privacy and personal data protection, guaranteed under constitutional provisions such as Article 17 of the Iraqi Constitution, the use of big data analytics algorithms may entail risks of infringing these rights if not framed by stringent legal and

ethical controls, added to this are persistent concerns related to the transparency of these algorithms' operations, the difficulty in understanding how they reach their conclusions, potential resulting biases, as well as obstacles related to the technological and administrative infrastructure necessary to support and operate these systems effectively and securely, this problematic is exacerbated when comparing the Iraqi situation with international experiences, where it becomes clear that the challenges Iraq faces in this domain differ qualitatively and fundamentally, owing to the specificity of its legislative structure, the developmental level of its technological infrastructure, and the nature of the relationship between the tax administration and taxpayers, rendering the importation of ready-made solutions ineffective without profound and comprehensive adaptation.

1.4 Research Hypotheses:

This research proceeds from a set of fundamental hypotheses that it seeks to test and validate within the context of the Iraqi tax system, the first central hypothesis posits a state of incompatibility, if not explicit conflict, between the vast technical capabilities offered by artificial intelligence in data analysis and detecting complex evasion patterns, and the existing tax legal texts and frameworks in Iraq, which were not designed to accommodate such tools, the second hypothesis, of crucial importance, suggests that the success and effectiveness of any artificial intelligence system introduced to combat tax evasion in Iraq will critically and directly depend on the availability and application of robust ethical safeguards and stringent, transparent legal oversight mechanisms, without these guarantees, AI's efficiency could lead to overreach and violations of taxpayer rights, thereby undermining trust in the entire system, the third

hypothesis stems from an optimistic view that the adoption of well-considered legislative reforms, inspired by successful international best practices and adapted to suit Iraq's specificity, can pave the way for creating a balanced regulatory framework, such a framework would enhance AI's ability to achieve its objectives in increasing tax compliance while providing adequate and necessary protection for taxpayers' rights and their constitutional guarantees, also the study posits as a fourth hypothesis that the legislative vacuum, characterized by the absence of clear and specific legal provisions governing the role of artificial intelligence and its operational mechanisms in the context of tax enforcement in Iraq, necessarily leads to a state of vagueness and ambiguity regarding the determination of responsibilities, ensuring procedural transparency, and applying principles of justice in handling tax cases involving these technologies.

1.5 Delimitations and Scope:

The dimensions of this study are defined within a clear thematic, spatial, and temporal framework, thematically, the research primarily focuses on exploring and evaluating the role of artificial intelligence technologies as a tool to combat the phenomenon of tax evasion, with particular emphasis on dimensions related to the technical efficiency of these systems in detecting violations, their compatibility with the Iraqi legal and legislative framework, and the ethical implications of their application, especially concerning taxpayer rights and procedural justice, consequently, the research does not extend to cover all applications of artificial intelligence in public administration or all other aspects of the tax system not directly related to evasion, although the study draws upon leading international experiences and practices in this field, such as those of Estonia and

Indonesia, the aim is to extract lessons and insights that can benefit the Iraqi context, rather than conducting a comprehensive comparative analysis of all global tax systems using artificial intelligence, spatially, the study's scope is geographically confined to the state of Iraq, where the Iraqi tax system, its current legislation, and the specific challenges it faces in combating tax evasion are analyzed, temporally, the study addresses the current Iraqi tax legal framework, including influential historical laws such as the Income Tax Law of 1982 and its amendments, it is based on the latest available studies and research up to its preparation date (with references indicating an extension to 2024), and it also seeks to provide recommendations and forward-looking insights aimed at guiding future legislative reforms and policies in this field within Iraq.

1.6. Reference Studies

Recent studies on the use of artificial intelligence (AI) in combating tax evasion provide a rich framework that highlights the interaction between technology and law , from a legal perspective, Article 47 of the Iraqi Tax Law No. (113) of 1982 defines tax evasion as "the failure to disclose taxable income or the manipulation of declared values," with Article 52 emphasizing criminal and financial penalties for such practices , however, these provisions remain unable to keep pace with modern technological complexities, underscoring the need for legislative reforms based on successful international experiences, like those discussed by Blanco et al. (2022) on technology transfer in the context of climate change, which can be applied to modernize tax systems,in the international context, Belahouaoui & Attak (2024) suggest that adopting the concept of "Tax Administration 3.0"—based on AI—enhances transparency and reduces legal gaps, requiring alignment with constitutional principles , for

example, Article 17 of the Iraqi Constitution guarantees individual privacy, imposing restrictions on the use of AI algorithms in collecting tax data, as discussed by Henman (2020) in his analysis of AI governance challenges in public services , here, the challenge lies in balancing technical efficiency with legal safeguards, as demonstrated by Akhila et al. (2024), who show that machine learning-based systems can analyze tax patterns instantly but may overlook social contexts or misinterpret data without strict legal controls.

On the other hand, international legal texts, like the United Nations Convention against Corruption (2003), provide a general framework for supporting cross-border tax information exchange, which can be enhanced through AI tools, as explained by Nembe et al. (2024) , however, the challenge lies in harmonizing these mechanisms with local legislation, as Iraqi law lacks explicit provisions regulating the use of technology in tax enforcement, as noted by Saeed (2024) in her analysis of digital transfer pricing challenges,in contrast, leading international experiences offer valuable lessons and In Estonia, the legal framework has been adapted to support digital public services, including taxation, through flexible laws that allow innovation while preserving fundamental rights, as discussed by Ebers & Tupay (2023) and this model demonstrates the potential for Iraq to develop legislation integrating AI, like amending tax procedures to include provisions regulating algorithmic accountability (e.g., a proposed article: "The tax authority shall ensure the transparency of algorithms used and prevent discrimination"), studies emphasize the need to develop integrated governance frameworks, as highlighted by Hintz (2024) in his analysis of data justice , legislative amendments must be accompanied by awareness campaigns for taxpayers and regulatory bodies to ensure a balance between combating tax evasion

and respecting constitutional rights, as supported by Article 46 of the Iraqi Constitution, which enshrines the citizen's right to administrative justice.

Previous studies have concluded that the challenges Iraq faces in combating tax evasion using AI differ fundamentally from those encountered by other countries, particularly in legislative and technological infrastructure aspects and In Iraq, research (e.g., Saeed, 2024) indicates that the absence of a clear legal framework regulating the use of AI in tax administration hinders efficiency, as current laws, like Tax Law No. (113) of 1982, focus on traditional manual mechanisms without reference to digital tools and In contrast, countries like Estonia have successfully integrated AI through flexible legislation, like the "E-Services Act" (2019), which mandates government agencies to adopt technology while ensuring transparency and data protection, reducing tax evasion by 30% according to Ebers & Tupay (2023),on the other hand, the Indonesian experience (Saragih et al., 2023) shows that collaboration between governments and the private sector was pivotal in developing intelligent systems to detect abnormal patterns in tax returns, supported by laws requiring companies to share data through unified platforms and In Iraq, bureaucracy and a lack of trust between taxpayers and tax authorities hinder such partnerships, as Aberbach & Christensen (2007) note that "coercive systems" often fail without building trust bridges with societyand regarding data protection, while European Union countries adhere to strict regulations like the General Data Protection Regulation (GDPR), which sets conditions for AI use, Iraq only has general constitutional provisions (e.g., Article 17) without detailed implementation mechanisms, creating a gap between technological innovation and legal safeguards, as discussed by Hintz (2024) and this

disparity is evident in the study by Nembe et al. (2024), which found that countries adopting balanced legislation between efficiency and rights (e.g., South Africa) achieved 40% higher compliance rates compared to those neglecting the rights dimension, in conclusion international comparisons confirm that the success of AI in combating tax evasion depends on three factors as Updating legislation to accommodate technological tools, as seen in Estonia and enhancing transparency and trust between taxpayers and tax authorities through awareness campaigns and open-source systems , also A precise balance between technical efficiency and constitutional safeguards to avoid privacy violations or algorithmic discrimination, these factors provide a roadmap for Iraq to transform challenges into opportunities, leveraging international lessons without overlooking its legislative and social particularities.

Captet2

2.1. Methodology

This study employs a mixed-methods research design, integrating both quantitative and qualitative approaches to comprehensively assess the role of artificial intelligence (AI) in combating tax evasion in Iraq and the quantitative component consists of a Likert-scale questionnaire distributed to employees of the General Tax Authority and certified accountants, aiming to measure their perceptions regarding the effectiveness, legal compatibility, ethical considerations, and practical challenges associated with AI implementation in tax administration and the qualitative component involves semi-structured interviews with legal experts, including judges, tax lawyers, and academics, to explore the legislative and ethical implications of AI adoption in tax enforcement and

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these interviews provide deeper insights into the legal gaps, international experiences and policy recommendations relevant to the Iraqi context and the questionnaire is structured around fifteen key questions, where each categorized under four thematic areas: legal aspects, technical efficiency, ethical safeguards, and practical challenges and It utilizes a five-point Likert scale to capture the respondents' level of agreement with various statements related to AI's application in tax enforcement.

Table 1: Questionnaire Design

Theme	**Question**	**Likert Scale (1-5)**
Legal Aspects	Do you believe that current Iraqi legislation supports the use of AI in combating tax evasion?	1 □ 2 □ 3 □ 4 □ 5 □
Technical Efficiency	To what extent can AI analyze tax data more accurately than traditional methods?	1 □ 2 □ 3 □ 4 □ 5 □
Ethical Safeguards	Do you agree that the use of AI may threaten taxpayer privacy without strict legal safeguards?	1 □ 2 □ 3 □ 4 □ 5 □
Practical Challenges	How significant is the impact of government bureaucracy on adopting AI technologies in Iraq?	1 □ 2 □ 3 □ 4 □ 5 □
Legal Aspects	Are there sufficient legal provisions in Iraq to regulate the accountability of AI algorithms?	1 □ 2 □ 3 □ 4 □ 5 □
Technical Efficiency	Can AI effectively identify complex tax evasion patterns that are difficult for humans to detect?	1 □ 2 □ 3 □ 4 □ 5 □

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Ethical Safeguards	Should AI systems be required to provide transparent explanations for their decisions in tax audits?	1 □ 2 □ 3 □ 4 □ 5 □
Practical Challenges	Is the lack of technological infrastructure a major barrier to implementing AI in Iraq's tax system?	1 □ 2 □ 3 □ 4 □ 5 □
Legal Aspects	Does the Iraqi Constitution provide adequate protection for taxpayer data when using AI?	1 □ 2 □ 3 □ 4 □ 5 □
Technical Efficiency	Can AI reduce the time required for tax audits while maintaining accuracy?	1 □ 2 □ 3 □ 4 □ 5 □
Ethical Safeguards	Should there be an independent body to oversee the ethical use of AI in tax administration?	1 □ 2 □ 3 □ 4 □ 5 □
Practical Challenges	How significant is the financial cost of implementing AI in Iraq's tax system?	1 □ 2 □ 3 □ 4 □ 5 □
Legal Aspects	Are there international legal frameworks that Iraq can adopt to regulate AI in tax enforcement?	1 □ 2 □ 3 □ 4 □ 5 □
Technical Efficiency	Can AI improve the detection of cross-border tax evasion cases?	1 □ 2 □ 3 □ 4 □ 5 □
Ethical Safeguards	Should taxpayers have the right to appeal decisions made by AI systems in tax audits?	1 □ 2 □ 3 □ 4 □ 5 □

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This hybrid methodology also includes interviews with experts on legislation related to the tax system and its link to artificial intelligence and Table 2 shows the interview questions.

Table 2: Interview Questions

Theme	**Question**
Legislative Gaps	What are the most significant gaps in Iraqi legislation that hinder the use of AI in combating tax evasion?
International Experiences	How can Iraq benefit from international legislative models (e.g., Estonia) in modernizing its tax systems?
Constitutional Safeguards	Does Article 17 of the Iraqi Constitution oppose the use of AI algorithms in collecting tax data?
Practical Recommendations	What urgent legislative reforms do you propose to regulate the accountability of AI algorithms in tax enforcement?
Legislative Gaps	Are there specific laws in Iraq that need to be amended to accommodate AI in tax administration?
International Experiences	What lessons can Iraq learn from countries that have successfully integrated AI into their tax systems?
Ethical Considerations	How can Iraq balance the efficiency of AI with the protection of taxpayer rights and privacy?
Practical Recommendations	What role should the judiciary play in overseeing the use of AI in tax enforcement?
Legislative Gaps	Are there any existing laws in Iraq that could be

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	reinterpreted to support the use of AI in tax administration?
Ethical Considerations	Should there be a legal requirement for AI systems to be audited regularly to ensure fairness and transparency?

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Survey participants were selected through stratified random sampling, ensuring a representative sample of 200 individuals from the General Authority of Taxes and certified public accountants and interview participants were selected using a micro-sampling technique based on expertise in tax legislation and AI governance, collected data were analyzed using both statistical and objective methods and quantitative responses were processed using SPSS to calculate descriptive statistics, including means, standard deviations, and t-tests, to assess differences in perceptions between different groups of respondents and qualitative interview responses were examined through thematic analysis to identify key trends, concerns, and policy recommendations emerging from expert insights, Strict ethical considerations were adhered to throughout the study,Participants' identities and responses were kept confidential, and informed consent was obtained prior to participation, furthermore approval from the university's and research Ethics Committee was obtained to ensure compliance with ethical research standards, in short this study uses a hybrid methodological framework that combines statistical analysis and expert insights to comprehensively assess the legislative and ethical implications of AI in tax enforcement by integrating quantitative and qualitative evidence, the study aims to provide robust recommendations for policymakers and stakeholders in Iraq

2.2 Results

The findings of the study will provide a deeper understanding of the relationship between artificial intelligence and the tax administration process through the results of the questionnaire and special interviews with experts, and Table (3) shows the results of the descriptive statistics of the questionnaire responses.

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Table (3): Descriptive Statistics of the Survey Responses

Theme	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**
Legal Aspects	2.6	1.2	1	5
Technical Efficiency	4.2	0.7	3	5
Ethical Safeguards	4.3	0.9	2	5
Practical Challenges	4.4	0.8	3	5

The results reveal significant variation across the four thematic areas and the highest mean score was recorded for **Technical Efficiency (4.2)**, with a low standard deviation (0.7), indicating a strong consensus among respondents regarding AI's effectiveness in tax data analysis and conversely, the **Legal Aspects** received the lowest mean score (2.6), coupled with a high standard deviation (1.2), reflecting a general dissatisfaction with the current legislative framework and a perceived lack of specific legal provisions governing AI use in taxation.

Table (4): Reliability Test (Cronbach's Alpha)

Theme	**Number of Questions**	**Alpha Value**	**Interpretation**
Legal Aspects	4	0.78	Good Reliability
Technical Efficiency	4	0.85	High Reliability
Ethical Safeguards	4	0.81	Good Reliability
Practical	3	0.73	Acceptable

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Challenges			Reliability

The reliability analysis demonstrates that all themes exhibit acceptable internal consistency, with **Cronbach's Alpha values exceeding 0.7** and the **Technical Efficiency** theme achieved the highest reliability score (0.85), indicating a high level of consistency in participants' responses regarding AI's effectiveness , meanwhile, **Practical Challenges** showed the lowest reliability (0.73), suggesting some variation in perspectives regarding bureaucratic and financial obstacles to AI adoption in Iraq.

Table (5): T-Test Comparing Tax Authority Employees and Accountants

Theme	**Group**	**Mean**	**T-Value**	**Significance (p-value)**
Legal Aspects	Tax Authority Employees	2.8	2.45	0.016
	Accountants	2.3		
Technical Efficiency	Tax Authority Employees	4.0	1.92	0.057
	Accountants	4.4		

The T-test analysis highlights a statistically significant difference ($p < 0.05$) in the **Legal Aspects** theme between the two groups , accountants exhibited a greater skepticism regarding the adequacy of tax legislation (mean score: 2.3) compared to tax authority employees (mean score: 2.8) and this suggests that accountants, who deal directly with tax regulations in practice, are more aware of existing legal loopholes and conversely, the **Technical Efficiency** theme did not show a statistically significant

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difference ($p > 0.05$), indicating a broad agreement between both groups on the effectiveness of AI in tax administration.

Table (6): Correlation Analysis Between Themes

Variables	**Legal Aspects**	**Technical Efficiency**	**Ethical Safeguards**
Technical Efficiency	0.32	-	0.45
Ethical Safeguards	0.28	0.45	-
Practical Challenges	0.12	0.19	0.23

The correlation analysis reveals a strong positive correlation between **Technical Efficiency and Ethical Safeguards ($r = 0.45$, $p < 0.01$)**, suggesting that participants believe improvements in AI efficiency should be accompanied by robust ethical protections , additionally, there is a weaker correlation between **Legal Aspects and Technical Efficiency ($r = 0.32$, $p < 0.05$)**, indicating that while stronger legal frameworks may enhance AI's effectiveness, they are not the sole determinant of its success.

Table (7): Regression Analysis of Factors Affecting AI Effectiveness

Independent Variable	**Regression Coefficient (β)**	**Standard Error**	**T-Value**	**Significance (p-value)**
Legal Aspects	0.15	0.08	1.87	0.063
Technical Efficiency	0.62	0.10	6.20	0.000

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Ethical Safeguards	0.22	0.09	2.44	0.016
Practical Challenges	-0.09	0.07	-1.28	0.202

The regression analysis indicates that **Technical Efficiency has the strongest influence on AI effectiveness (β = 0.62, p < 0.001)**, confirming that AI is viewed as a powerful tool for enhancing tax administration,e**thical Safeguards** also have a statistically significant effect (β = 0.22, p < 0.05), underscoring the necessity of transparency and oversight in AI applications and In contrast, **Practical Challenges** did not show a statistically significant impact (p > 0.05), suggesting that bureaucratic and financial obstacles, while present, do not directly hinder AI effectiveness.

Table (8): Thematic Analysis of Expert Interviews

Theme	**Key Insights**	**Frequency**
Legislative Gaps	- Lack of regulations defining AI accountability.	9/10
	- Current laws are outdated and incompatible with AI.	8/10
International Models	- Estonia's AI-driven tax system as a model for Iraq.	7/10
	- Need to adopt GDPR-like data protection standards.	6/10
Constitutional Safeguards	- Article 17 restricts data collection without consent.	10/10
Practical	- Amend tax procedure laws to	9/10

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Recommendations	incorporate AI clauses.	
	- Establish an independent regulatory body.	8/10
Ethical Challenges	- Risk of AI bias against small businesses.	7/10

The qualitative findings reinforce the survey results , a substantial 90% of experts emphasized the **lack of clear legislative provisions governing AI**, while 80% recommended **reforming Iraq's tax laws** to ensure AI accountability , additionally, 70% advocated for **leveraging Estonia's AI-based tax administration model**, and 60% suggested **adopting GDPR-like data protection measures**, notably, all experts (100%) agreed that **Article 17 of the Iraqi Constitution** poses potential obstacles to AI-driven tax data collection,ethical concerns were also raised, with 70% of participants warning against **algorithmic discrimination** against small businesses.

The results indicate that the absence of clear legal frameworks governing AI in taxation is one of the primary obstacles, as evidenced by the low mean score of 2.6 and this highlights a significant legislative gap that creates uncertainty in AI's application and on the other hand, AI's capability to enhance tax compliance detection is widely recognized, with a mean score of 4.2, demonstrating strong confidence in its technical efficiency,ethical concerns remain prominent, with a mean score of 4.3, emphasizing the necessity for robust transparency measures and oversight mechanisms to prevent misuse, practical barriers, particularly bureaucratic inefficiencies and infrastructural shortcomings, were also identified as significant hindrances, with a mean score of 4.4, indicating that these operational challenges delay AI adoption ,To address these

issues, legal reforms and the adoption of international best practices are essential to ensuring that AI-driven tax administration balances efficiency with taxpayer rights,establishing a clear regulatory framework, incorporating ethical guidelines, and improving infrastructure are key steps toward achieving a more effective and accountable AI system in taxation

2.3 Discussion

The findings of this study align closely with the broader literature on the role of artificial intelligence (AI) in combating tax evasion, while also highlighting unique challenges specific to Iraq and the results underscore the technical efficiency of AI in detecting complex tax evasion patterns, consistent with the findings of Saragih et al. (2023), who demonstrated how AI-driven systems in Indonesia significantly improved tax compliance rates,similarly, the study by Ebers and Tupay (2023) on Estonia's AI-powered tax administration model supports the notion that AI can enhance transparency and efficiency in tax enforcement , however, the current research reveals that Iraq's legislative framework lags behind these international examples, with participants expressing low confidence in existing laws (mean score: 2.6) and this echoes the concerns raised by Belahouaoui and Attak (2024), who emphasized the need for legal reforms to accommodate AI in tax systems ,the ethical concerns Identified in this study, particularly regarding algorithmic transparency and taxpayer privacy, resonate with the findings of Henman (2020), who argued that AI applications in public services must balance efficiency with ethical safeguards and the strong correlation between technical efficiency and ethical safeguards ($r = 0.45$) in this study further supports the argument that AI's effectiveness is contingent on maintaining

public trust through robust oversight mechanisms and this is particularly relevant in Iraq, where constitutional protections, like Article 17, impose strict limitations on data collection without consent, as highlighted by Hintz (2024) in his analysis of data justice. The practical challenges of Implementing AI in Iraq, like bureaucratic inefficiencies and infrastructural shortcomings, are consistent with the observations of Aberbach and Christensen (2007), who noted that coercive systems often fail without building trust and collaboration with stakeholders and the high mean score for practical challenges (4.4) in this study suggests that these obstacles are more pronounced in Iraq compared to countries like Estonia, where flexible legislation and technological readiness have facilitated smoother AI integration (Ebers & Tupay, 2023), and the study's regression analysis, whichh identified technical efficiency as the strongest predictor of AI effectiveness ($\beta = 0.62$), aligns with the findings of Nembe et al. (2024), who emphasized the transformative potential of AI in enhancing tax compliance , however, the study also highlights the importance of ethical safeguards, as evidenced by the significant positive impact of this variable ($\beta = 0.22$) and this reinforces the argument made by Fidelangeli and Galli (2021) that AI adoption in tax systems must be accompanied by legal and ethical frameworks to prevent misuse and ensure fairness,in conclusion, while this study confirms the potential of AI to revolutionize tax enforcement, it also highlights the critical need for legislative and ethical reforms in Iraq and the findings suggest that adopting international best practices, like Estonia's AI-driven tax administration model and GDPR-like data protection standards, could provide a roadmap for Iraq to overcome its current challenges , by addressing these issues, Iraq can leverage AI's capabilities to enhance tax

compliance while safeguarding taxpayer rights and maintaining public trust.

2.4. **Conclusion**

In concluding this study, it becomes unequivocally clear that integrating artificial intelligence into the mechanisms for combating tax evasion in Iraq presents a promising opportunity as much as it poses fundamental challenges, the quantitative and qualitative findings have revealed a stark contrast between the vast technical capabilities of artificial intelligence in analyzing data and detecting complex evasion patterns, and the existing legislative and regulatory reality, which suffers from significant gaps hindering the optimal utilization of these technologies, the high confidence in the technical efficiency of AI, expressed by the study participants, collides with legitimate concerns regarding legal and ethical safeguards, particularly concerning the protection of taxpayer privacy, algorithmic transparency, and accountability mechanisms. Furthermore, practical obstacles embodied in bureaucracy and weak infrastructure constitute an additional hurdle that must be overcome.

The path towards achieving an effective and just tax system in Iraq, one that leverages the capabilities of artificial intelligence, requires a comprehensive strategic vision that transcends mere technological adoption, this vision must be founded on profound legislative reforms inspired by successful international experiences while considering Iraqi specificity, building a culture of transparency and trust between the tax administration and taxpayers, and investing in developing the necessary human capacities and infrastructure, achieving the delicate balance between enhancing tax collection efficiency and protecting the fundamental rights of taxpayers is not merely a legal and ethical

necessity, but a fundamental condition for the success of any modernization efforts in this vital field, this research serves as a building block in constructing this understanding, and it underscores that the future of combating tax evasion in Iraq lies in the wise and responsible deployment of artificial intelligence within a robust legal and ethical framework.

Recommendations:

1. **Urgent Legislative Reform:** The Iraqi legislator must give utmost priority to reviewing and updating tax laws, particularly the Income Tax Law and the Tax Criminal Procedure Law, to include clear provisions regulating the use of artificial intelligence in all stages of the tax process, and to define mechanisms for accountability and transparency.
2. **Leveraging Successful International Models:** It is recommended to study and adopt elements from successful international legislative and regulatory models, such as Estonia's experience in the digital transformation of tax services, and data protection standards similar to the European General Data Protection Regulation (GDPR), adapting them to suit the Iraqi context.
3. **Establishing an Independent Oversight Body:** It is crucial to establish an independent body or assign an existing entity with clear powers to oversee the use of artificial intelligence in tax administration, ensure its adherence to ethical standards, and periodically review algorithms to prevent bias and ensure fairness.
4. **Enhancing Data Protection and Privacy:** Detailed implementing regulations for Article 17 of the Iraqi Constitution and other relevant texts must be developed to ensure the protection of

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taxpayer data when using AI systems, and to define the conditions for collecting, processing, and securely storing data.

5. **Investing in Infrastructure and Human Capacities:** Effective implementation of AI requires significant investment in modernizing the technological infrastructure of the General Tax Authority, and in training and qualifying human resources to use these technologies and understand their legal and ethical dimensions.
6. **Promoting Transparency and the Right to Appeal:** The transparency of decisions made by AI systems must be ensured, providing taxpayers with the opportunity to understand the basis of these decisions, and offering clear and effective mechanisms for objection and appeal.
7. **Encouraging Research and Academic Cooperation:** It is recommended to encourage and support ongoing research and studies on AI applications in the tax field and their various impacts, to ensure keeping pace with developments and providing innovative solutions to emerging challenges.
8. **Awareness Campaigns and Trust Building:** Launching awareness campaigns aimed at both taxpayers and employees to explain the benefits of using AI, its working mechanisms, and the guarantees related to their rights, with the goal of building trust and promoting voluntary compliance.

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