

Leveraging AI for the Future of Tax Administration in Algeria: Insights from Singapore and the USA

توظيف الذكاء الاصطناعي لمستقبل الإدارة الضريبية في الجزائر: رؤى من سنغافورة والولايات المتحدة الأمريكية

PHD. Meriem AREZKI ¹, Dr. Abdel Malek HAMEL ²

¹ Ecole supérieure de commerce, Laboratory of Economic Reforms, Development, and Integration Strategies in the Global Economy-KOLEA (Algeria), m_arezki@esc-alger.dz.

² Ecole supérieure de commerce, Laboratory of Economic Reforms, Development, and Integration Strategies in the Global Economy-KOLEA (Algeria), A_hamel@esc-alger.dz.

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Abstract:

This research explores the role that Artificial Intelligence might play in transforming tax administration in Algeria, using as background successful models for cases including Singapore and the United States. Considering the challenges Algeria faces with increasing tax compliance and operational efficiency in modernizing its tax systems, integration of AI presents itself as an appropriate solution. This research evaluates the artificial intelligence-driven innovations implemented in Singapore and in the United States, with emphasis on precise effects of the innovations on tax collection, detection of fraudulent activities, and taxpayer services. From this international perspective The paper, in concise, depicts how AI can help streamline tax processes, minimize tax evasion, and provide transparency with efficiency in the taxation environment of a country, the study concludes with strategies in the area of AI, which could be tailored for effective implementation within the framework of the tax administration in Algeria.

Keywords: Algerian Tax Administration; Artificial Intelligence (AI); Digital Transformation; Singapore Model; United States Model.

JEL Classification Codes: H21, O33, L86.

ملخص:

تستكشف هذه الدراسة الدور الذي قد يلعبه الذكاء الاصطناعي في تحويل إدارة الضرائب في الجزائر، باستخدام نماذج ناجحة من دول مثل سنغافورة والولايات المتحدة كنماذج مرجعية. وبالنظر إلى التحديات التي تواجهها الجزائر في زيادة الامتثال الضريبي وكفاءة العمليات في تحديث نظم الضرائب، فإن دمج الذكاء الاصطناعي يظهر كحل مناسب. تقيم هذه الدراسة الابتكارات المدفوعة بالذكاء الاصطناعي التي تم تنفيذها في سنغافورة والولايات المتحدة، مع التركيز على الآثار الدقيقة لهذه الابتكارات على جمع الضرائب، واكتشاف الأنشطة الاحتيالية، وخدمات دافعي الضرائب. من خلال هذا المنظور الدولي، باختصار، يوضح البحث كيف يمكن للذكاء الاصطناعي أن يساعد في تبسيط العمليات الضريبية، وتقليل التهرب الضريبي، وتوفير الشفافية مع تحسين الكفاءة ضمن المنظومة الضريبية في البلاد، توصلت الدراسة إلى تحديد الاستراتيجيات الأكثر ملاءمة في مجال الذكاء الاصطناعي التي يمكن تكيفها وتنفيذها بفعالية ضمن إطار إدارة الضرائب في الجزائر، بما يساهم في تعزيز كفاءة العمليات الضريبية وتحقيق الأهداف المرجوة.

كلمات مفتاحية: إدارة الضرائب الجزائرية؛ الذكاء الاصطناعي؛ التحول الرقمي؛ نموذج سنغافورة؛ نموذج الولايات المتحدة

تصنيفات JEL: H21, O33, L86.

Corresponding author: Meriem AREZKI, m_arezki@esc-alger.dz

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INTRODUCTION:

The Algerian Tax Administration's transition to digitalization commenced with establishing the 'Jibaya' electronic declaration platform, a significant development introduced in 2017. This technology has been methodically implemented across tax centers nationwide (Miloud, 2021, page 961) improving accessibility, optimizing compliance processes, and laying the foundation for a responsive and contemporary fiscal infrastructure, Algeria's tax administration has advanced its digitization efforts with the launch of the 'Mousahama' platform. This initiative simplifies tax declarations and facilitates electronic payments through banking CIB cards or Edahabia cards, subject to specific limits (Legal Doctrine, 2022).

Artificial intelligence has infiltrated various sectors, enabling tax administrations to gain substantial advantages from this technological progress. Numerous countries, including Malaysia, Singapore, and Australia, have proactively adopted this crucial instrument. (Mohammad Hassan Shakil, 2022, page 12), The adoption of AI in U.S. tax administration has markedly risen, with approximately fifty percent of global tax authorities employing AI for fraud detection and risk evaluation. AI virtual assistants currently handle approximately 40% of service inquiries. From 2018 to 2021, the deployment of AI increased by 22.8 percentage points, enhancing real-time compliance monitoring and operational efficiency, while bolstering fraud protection. (OECD, 2023)

With the advancements in digitalization and the potential benefits of AI in tax administration, a significant question emerges what strategies Algeria can adopt to effectively integrate artificial intelligence into its tax administration system, drawing from successful models in Singapore and the USA to enhance compliance, improve operational efficiency, and tackle challenges in digitalization?

Objectives of the study:

Examining AI models from Singapore and the United States for potential application in Algeria's tax administration aims to highlight the role of advanced technologies in modernizing tax systems and enhancing their efficiency. Singapore, with its innovative application of AI in public administration, has tapped into machine learning and predictive analytics for compliance facilitation, evasion reduction, and provision of personalized services to taxpayers. The U.S. tax administration has implemented advanced AI-driven fraud detection mechanisms, which have contributed to enhancing risk assessment and strengthening the governance of taxpayer services. Therefore, a similar study of international models will help Algeria derive realistic means of refining her tax operations while strengthening efficiency and ensuring fairness. Integrating AI into Algeria's tax administration could address a number of challenges faced by the country, such as a lack of real-time data analysis, and pave the way toward a resilient, transparent, and citizen-centric tax framework.

1- What is artificial intelligence?

Artificial Intelligence is a field of computer science that works with developing systems that can execute tasks involving human Intelligence, such as learning, reasoning, and understanding language. Artificial Intelligence may be defined as a technology that can evaluate information and create patterns using machine learning, deep learning, or natural

language processing. This technology can improve its performance through self-learning algorithms. Such an ability enables AI to complement decision-making processes and improve operational efficiency in various fields, including healthcare, finance, and transportation, by revolutionizing methodologies around problem solving and innovation (Paccola., 2023, page 07)

Artificial Intelligence imitates human cognitive capabilities in knowledge acquisition and rational behavior through Knowledge-Growing Systems (KGS), which emulates human reasoning and decision-making. Using technologies like machine learning and natural language processing, AI analyses data, recognizes patterns, and makes decisions independently, hence transforming sectors like healthcare and banking. All this comprehensive transformation raises concurrently ethical dilemmas about privacy, security of data, and human rights. (Arwin, 2018, page 26)

2- The Role of AI in Modern Tax Administration

Artificial Intelligence may modernize tax administration, enhancing efficiency and accuracy while detecting fraud and improving compliance processes to promote fiscal integrity. However, the challenges of implementation, particularly with regard to data privacy and ethical issues that are country-specific and need resolution for public trust. (Odunayo Adewunmi Adelekan, 2024, page 320)

AI can be the essence in identifying non-compliance and mitigating tax evasion, whereby machine learning scrutinizes large financial databases for fraudulent trends. Predictive analytics enables authorities to forecast taxpayer behavior and spend enforcement resources efficiently. Significant obstacles in AI deployment emerge, particularly around data privacy and ethical issues, which must be addressed to preserve public confidence. (Joseph Kuba Nembe, 2024)

Beyond increasing efficiency and fraud detection , AI is core to modern tax administration because it supports intelligent robotic system that analyze large data sets , thereby expanding capabilities for problem solving .these systems thus support identifying non-compliance , reducing tax evasion , and predicting taxpayer behavior . (Jinlong, 2024, page 06)

Modern tax administration greatly benefits from artificial intelligence in fighting tax fraud through advanced software that allows fast data exchange and touch with the taxpayers. Tax authorities worldwide, especially in France and Morocco, are increasingly adopting this technology to enforce compliance and streamline tax collection process. (Machmoume Siham, 2023, page 335)

Furthermore, AI enhances tax administration by automating processes to increase efficiency, accuracy, and fraud detection, hence streamlining tax audits, identifying fiscal issues, and classifying taxes for compliance-oriented strategies. The elimination of tax evasion is crucial for transparency and fairness in tax systems. The ethical execution and protection of taxpayers' rights must consider the potential advantages, thereby preserving

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public trust and promoting voluntary compliance with tax obligations (Serrano Antón, 2021, page 116)

AI has improved modern tax administration with regard to efficiency, precision, and fraud detection, while simplifying filing, assessment, and inspection operations. It would facilitate the management processes and create more awareness of tax services, finally leading to effectiveness and efficiency in the tax collection systems of a country like China. By reducing duplication of work, AI provides increased transparency and compliance using advanced analytics. However, its implementation must consider ethical issues and protect the rights of taxpayers, ensuring that public confidence is not lost. Further, AI has a lot of potential for application in tax administration in a number of other areas, such as personalized support for taxpayers, policy analysis, and predictive compliance approaches. (Huiqin, 2022, page 5845)

3- The Current State of Algerian Digital Tax Administration

The Algerian tax administration has adopted, over time, digitalization in order to enhance efficiency, transparency, and access by taxpayers the most important include the official website of the general directorate of taxes, the identification number platform, and offered online services under ‘Jibaya’tic’, ‘Mousahama’ tic’ and ‘Tabioucom’.

These tools permit declarations, payments and stamp duty processing electronically with extra services in both tax calculators and references of property price. Taken together, all these efforts represents a great shift toward modernized and user-centric fiscal management.

3-1 The official website of the General Directorate of Taxes

The official website of the General Directorate of Taxes (www.mfdgi.gov.dz) is one of the most important tools of the electronic administration for taxes in Algeria. On this site, taxpayers can find many services that allow them to respect their tax obligations without attending in-person meetings. It also serves as a primary channel for the timely dissemination of essential information from the tax administration to taxpayers, ensuring they remain consistently and promptly informed. The website is central in enhancing accessibility, transparency, and efficiency in the structure of tax administration. (abdellatif, 2019)

3-2 The Tax Identification Number (NIF) Platform

The Tax Identification Number, also known as NIF, is an essential part of tax administration and the foundation of the National Taxpayer Registry. The main goals of the system are the detection of tax fraud and evasion and identifying taxpayers correctly.

The General Directorate of Taxes has simplified the procedures for obtaining a tax identification number within the framework of modernizing tax administration and encouraging e-governance. Thus, individuals and entities successfully applied through the website <https://nifenligne.mfdgi.gov.dz> for the obtainment of a tax identification number. This

is, therefore, a great stride toward efficiency and accessibility within the administrative framework of fiscal management in Algeria (MFDGI, 2019)

3-3 Online Declaration and Payment Platforms

Algeria provides two online platforms for declaration and payment. Jibaya'tic and Moussahama'tic

3-3-1 the 'JIBAYA'TIC' Platform

The JIBAYA'TIC platform is a pilot test of electronic approaches to ease and simplify tax compliance. It enables digital filing and payment of taxes and duties. 'Jibaya'tic' is the Arabic pronunciation of "fiscalité" (taxation), and "TIC" is an abbreviation for Information and Communication Technologies (ICT). The Jibaya'tic platform offers services to taxpayers relating to the new organizational structures (DGE, CDI, and CPI). The utilization of this tax declaration procedure involves pre-enrollment on a voluntary basis. A functional upgrade of this portal is planned. (MFDGI, 2017)

3-3-2 The 'MOUSAHAMA' TIC' Platform

The 'MOUSAHAMA' TIC' platform is the new website for e-services of the Algerian tax office. It offers taxpayers online services to declare and pay taxes and duties in a simple, easy-to-use, and user-friendly manner. This portal is of assistance to taxpayers associated with Wilaya Tax Directorates without operational Tax Centers (CDI) or Proximity Tax Centers (CPI). The portal is fundamental to constant amelioration, improved functions, and service expansion. It depends on the contribution of taxpayers, who can provide feedback via this email address: moussahamatic@mf.gov.dz. (MFDGI, 2021)

3-3-3 The TABIOUCOM Platform

Tabioucom is an online service from the Directorate General of Taxes in Algeria. It facilitates the process of paying stamp duties easily online. Customers can complete the entire process of payment without having to move to tax offices. It allows taxpayers to use the service, fill in necessary forms, choose the right category and document type for stamp duty, make the payment safely, and get an electronic receipt. (MFDGI, 2024)

3-4 other digital services

The Algerian tax authority has also provided other e-services in order to simplify life for its taxpayers. Among these services, there is the Real Estate Price Reference, which broadcasts actual information about property prices, the IRG Scale Calculator, and the IRG and Property Income Tax Simulator, with which taxpayers are able to calculate their income tax (IRG) and property tax. These tools simplify the process of calculating taxes and ensure accuracy and transparency, the tax administration of Algeria has not yet incorporated artificial intelligence into its services. (MFDGI, 2022)

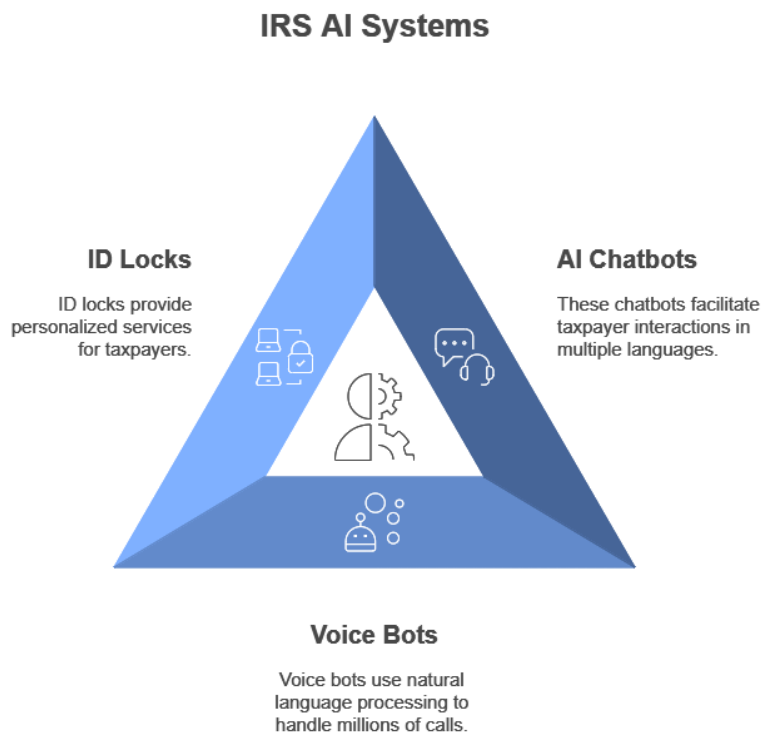
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4- AI Models in the USA's Tax Administration

The United States has adopted advanced AI systems to modernize its tax administration for better efficiency, compliance, and taxpayer services. The IRS uses various tools in the areas of chatbots, voice bots, predictive analytics, and machine-learning models in order to modernize processes, detect fraud, and assess compliance risks. Such innovations have brought about operational effectiveness while raising concerns about privacy and fairness, reflecting the challenges of balancing technological advancement with taxpayer trust.

4-1 The Internal Revenue Service IRS chatbot and voice bots

The IRS internal Revenue Service is using some of the most powerful AI systems yet, such as chatbots and voice bots, to improve tax administration in the United States and to serve taxpayers better. These AI-powered services - in English and Spanish - allow taxpayers to handle collection letters, make payments, and request explanations for notices without ever having to interact with a human. Using natural language processing, the voice bots have processed more than 8.2 million calls in the past year, which has improved the automated



collections response time of the IRS by 30 per cent. ID locks allow taxpayers to access personalized services, such as setting up payment plans and checking transaction (OECD, 2023)

Fig (1): Key AI Systems in IRS Tax Administration

Source: Illustrated based on (OECD, Tax Administration 2023: Comparative information on OECD and other advanced and emerging economies, 2023)

4-2 The IRS Return Review Program

The IRS's Return Review Program (RRP) shows the application of AI in U.S. tax administration to improve enforcement and compliance. The RRP, established in 2016 following an extensive research, integrates conventional rules-based approaches with sophisticated machine learning to identify theft and tax non-compliance. By employing supervised and unsupervised learning, it detects dubious refund claims, enabling the IRS to suspend them for more scrutiny. The RRP has exhibited a substantial return on investment, yielding approximately \$11 billion in its initial years, while IRS management consistently modifies the system to combat emerging evasion tactics. However, some indicators such as the 'no-change rate' which implies audits with no changes give a stark warning that there still remain tangible issues in balancing efficiency and the easing of costs for tax compliant citizens. This model shows both the benefits and challenges posed by artificial intelligent systems in tax administration. Stress existing issues in harmonizing efficiency with the minimizing of cost for tax compliant persons. This model shows both the benefits and challenges posed by the concept of tax administration by artificial intelligence. (Janet Holtzblatt, 2022,page 8)

4-3 Predictive Modeling to Identify High-Risk Tax Filers

For quite some time, the IRS has employed data analytics powered by artificial intelligence for tax enforcement. The IRS uses artificial intelligence and machine learning techniques to develop forward-looking information models that integrate and analyze enormous amounts of data sets from users' profiles in various social networks and payment systems to develop a profile for each taxpayer. The profiles allow for more efficient identification of non-compliance trends than traditional audit selection methods, which use random sampling and document comparison. These AI models allow the IRS to focus audits on high-risk profiles, create "heat maps" to identify clusters of non-filers and test different notification strategies to improve compliance. This raises significant concerns about privacy and procedural fairness. Taxpayers may see the IRS's data collection as intrusive and lose confidence in the tax system. The IRS has used AI-driven data analytics for years to improve tax compliance. (Neuman & Sheu, 2022,p97)

4-4 AI Tools for Taxpayer Identification and Risk Assessment by the IRS

Artificial intelligence systems. have been used by the IRS to improve taxpayer identification and risk assessment. Logistic regression techniques predict compliance risk, enabling targeted audits. Decision trees establish common behaviors of tax evasion while neural networks identify complex patterns associated with fraud. Clustering approaches group similar taxpayers together with a focus on non-compliance clusters while visualization techniques e.g. link analysis exposes associations between entities aiding in fraud detection The IRS is now equipped with these tools for managing compliance risks in a more effective and cost-efficient manner (Antonio Faúndez-Ugalde, 2020, page 04)

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5- AI Models in the Singapore Tax Administration

Singapore has integrated advanced artificial intelligence into its tax administration to enhance effectiveness, accuracy, and experience for taxpayers. IRAS uses AI-driven tools such as chatbots, digital identity frameworks—SingPass and CorpPass—and the Inland Revenue Integrated System, which helps in tax submission, eases administrative challenges, and improves service delivery. These have slashed processing times, reduced errors, and improved secure, personalized interactions with taxpayers—demonstrating in action Singapore's commitment to modernizing its tax administration through artificial intelligence

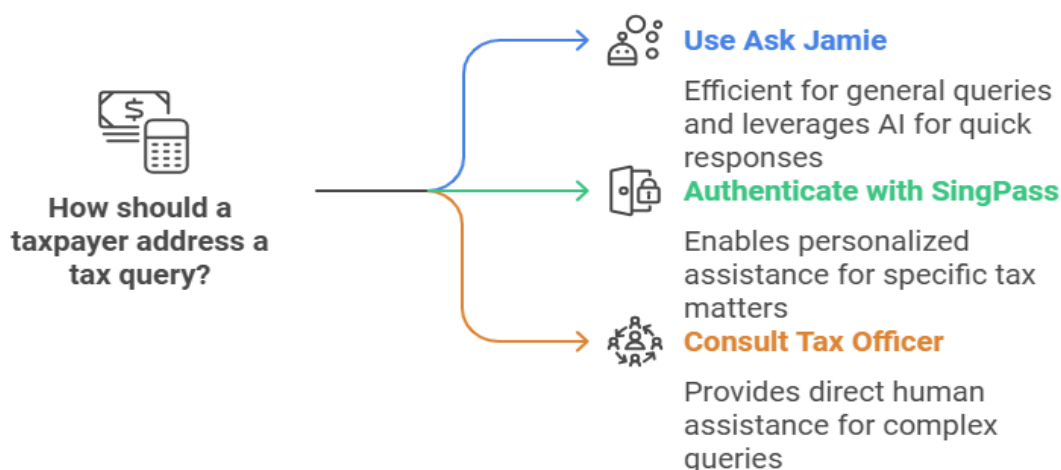
5-1 Automated Tax Filing Assistance Using Conversational AI

Working with GovTech, Singapore's Inland Revenue Authority (IRAS) created a chatbot using artificial intelligence and natural language processing to make the process of tax filing easier. This chatbot offers a discussion based platform, making it easier for taxpayers to file taxes by narrating their requests. As notable impacts, filing time decreased by 60% and less tax-savvy users were made more mobile friendly. Its Target audience expanded in 2021 for the assessment year to include hawkers; thus, assisting about 10 thousand taxpayers, which is a move towards effective digital tax. This is in line with Singapore's focus in embedding AI in order to improve tax administration. (OECD, 2021)

5-2 Digital Identity: Modernizing Access for Taxpayers

AI-enabled tax administration in Singapore is thus based on the twin digital identity systems in the country: SingPass for individuals and CorpPass for businesses. These systems ensure safety and efficiency in access to both government and private sector services through end-to-end integration with IRAS systems. At the same time, AI ensures that the data of taxpayers is updated in real time through SingPass and CorpPass, while the IRAS sends various tax filing and pre-filling forms to them for confirmation. These systems ease the lives of users through biometric authentication and dissemination of data, hence highly reducing administrative burdens while maintaining security and transparency in tax processes (Sonia B. Dhaliwal, 2023, page 06)

Fig .02: Tax Query Assistance "Ask Jamie" Workflow in Singapore



Source: Illustrated based on (OECD, 2019)

The tool offers a three-tiered strategy for resolving tax enquiries: taxpayers may initially utilize the AI-driven virtual assistant "Ask Jamie" for common questions, authenticate via Sing Pass for tailored tax support, or seek assistance from a tax official for intricate instances necessitating human intervention. The IRAS Virtual Intelligent VICA Chat Assistant robot started in stages to finally replace the Ask Jamie Virtual Assistant. This will provide a smooth, more personalized, and better digital experience for taxpayers. In FY2022, the IRAS VICA bot answered over 150,000 questions and related tasks on Personal Income Tax, Property Tax, and more. (The inland Revenue AUthority of Singopre, 2023)

5-3 The Inland Revenue Integrated System (IRIS):

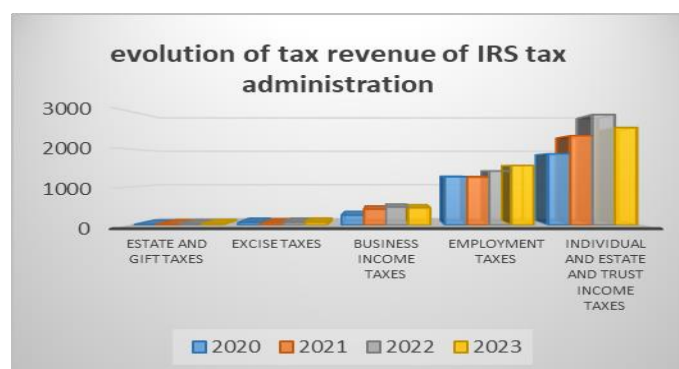
The Inland Revenue Integrated System (IRIS) demonstrates significant advancement in Singapore's commitment to using AI to enhance tax administration. Developed by the Inland Revenue Authority of Singapore (IRAS), IRIS adeptly processes around 80% of straightforward tax documents via seamless data connections with various systems, including SingPass and CorpPass. The AI models integrated into IRIS analyze taxpayer information, identify errors, and autonomously complete tax forms. This job cuts down on errors and helps with admin limits, so it boosts overall speed. (Sonia B. Dhaliwal, 2023, page 06)

6- Comparative Analysis: Singapore and the USA

From about 2020, AI brought a throughout change in tax administration services worldwide and dramatically reduced revenue collection through digital services, making it simple and efficient. This paper will look into the role AI plays concerning tax revenues and the online behaviors of the taxpayers of Singapore and the USA, as can be illustrated by the graphs contained in this study. It will also study both systems and look into how AI can improve the practice of tax administration and create digital inclusion.

All graphics in this study were produced from the yearly reports of Singapore's tax authority-the Inland Revenue Authority of Singapore (IRAS)-and the tax authority of the United States-the Internal Revenue Service (IRS)-for the years 2020, 2021, 2022, and 2023. Subsequent to that, the data contained in these reports were processed and visualized with the help of Microsoft Excel to allow one to carry out comparative analyses of some core metrics

Fig. 03: Evolution of IRS Tax Administration

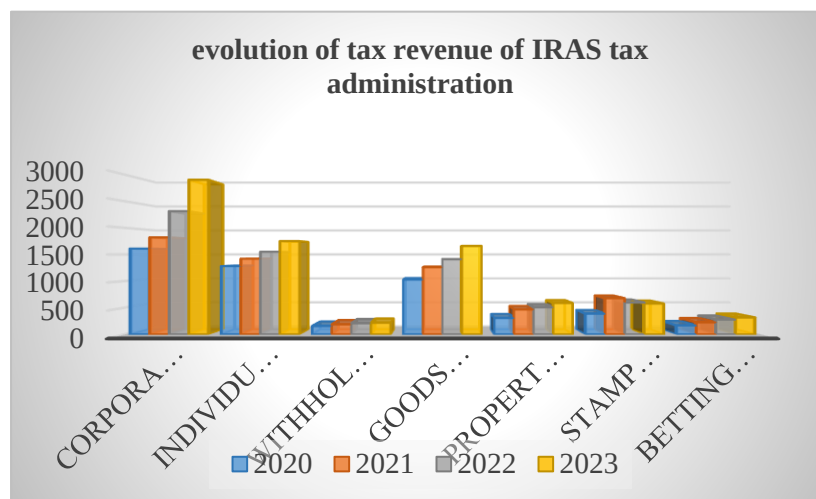


Source: Illustrated based on IRS annual reports (2020, 2021, 2022, 2023)

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The Internal Revenue Service tax revenue statistics from 2020 to 2023 indicate that the 3rd figures has formantly increased during that period owing to the possible direct implication of AI systems in tax regimes, especially with regard to business income taxes and individual taxes concerning compliance improvements and efficiencies brought about by the application of AI tools. It encompasses a period of severe economic turmoil brought about by the COVID19 pandemic, affecting tax revenue and bringing some taxpayers to adopt digital tax solutions. Growth and increase in tax revenue during this period pose evidence as to how AI technologies have kept and advanced their tax collection efforts whilst maintaining the economy on a knife-edge

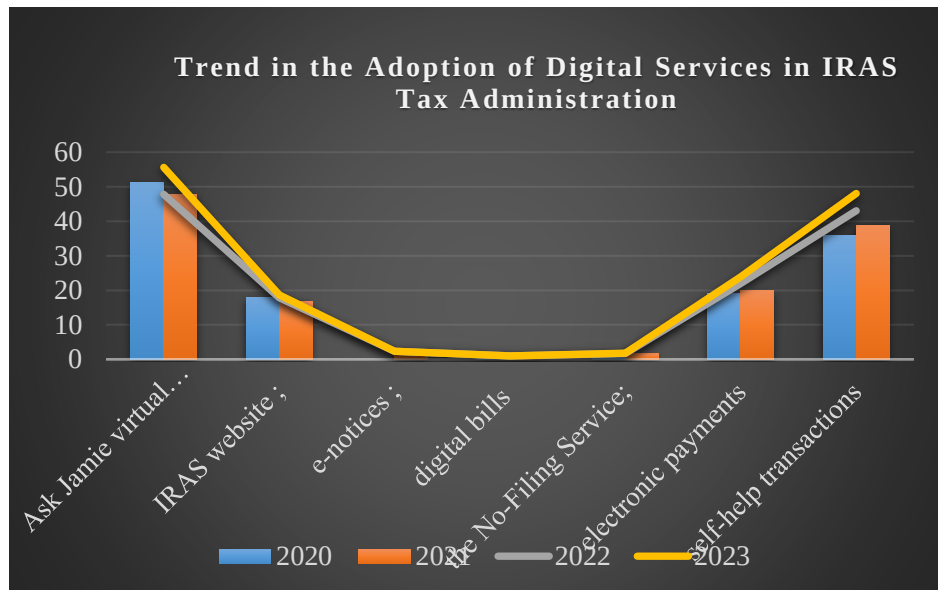
Fig.04: Evolution of IRAS Tax Administration



Source: Illustrated based on IRAS annual reports (2020, 2021, 2022, 2023)

Figure 04 illustrates the growth of tax revenues managed by Singapore's Inland Revenue Authority (IRAS) across primary categories—corporate income tax, individual income tax, and goods and services tax—from 2020 to 2023. The continuous expansion across all categories demonstrates IRAS's adept utilization of AI to enhance tax processes, improve compliance, and identify concerns. Artificial intelligence has significantly enhanced tax collection by automating audits, increasing report accuracy, and reducing fraud.

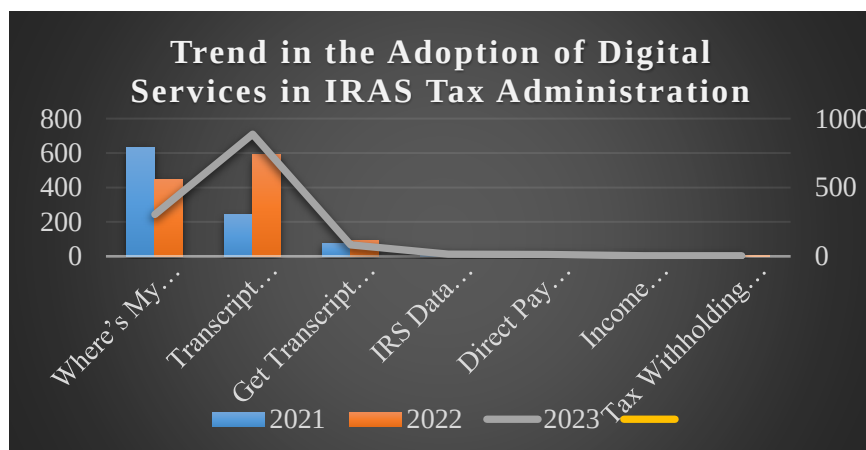
Fig.05: Trend in the Adoption of Digital Services in IRAS Tax Administration



Source Illustrated based on IRAS annual reports (2020, 2021, 2022, and 2023)

A steady growth in the use of IRAS digital service from 2020 to December 2023 is seen in Figure 5, on a year-to-year basis being mostly driven by the disruptive power of artificial intelligence. Ask Jamie virtual assistant with the A 55.6 million user base in 2023, following IRAS BOT launch in 2022 .The rise of self-service transactions indicates that algorithmic solution (and less personal interaction from humans) are becoming more socially accepted among consumers. Even with the limited implementation of e-notices and digital invoices, the trends at the global level point towards how extremely imperative the critical transformation of IRAS requiring more user-centric Artificial Intelligence and Digital Innovation

Fig.06: Trend in the Adoption of Digital Services in IRS Tax Administration



Source: Illustrated based on IRS annual reports (2020, 2021, 2022, 2023)

Where's My Refund?" and "Get Transcript Online" are among the developments in digital services that have aided IRS tax administration from 2020 to 2023. Some services demonstrate lower utilization, possibly due to improved efficiency and accuracy, while others remain prevalent, indicating their long-term usefulness. Additionally, the importance of user-

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friendly, flexible online platforms is highlighted. By utilizing AI, like in the USA and Singapore, we can improve service accessibility through better efficiency or taxpayer satisfaction.

The evolution of Singapore tax administration (IRAS) and the USA tax administration (IRS), as evidenced in Figures 3, 4, 5, and 6, provides important information about Algeria's upcoming reforms. The tax system and compliance systems driven by AI in Singapore are responsible for the consistent growth in income across various industries. In contrast, the tax base of the USA exhibits a more diverse income development pattern because it relies on old-fashioned processes and newer technologies. Figures 3 and 4 demonstrate the dissimilarity of this. The utilization of digital services differs between IRAS and the IRS, reflecting variations in usage due to user-centric advancements like virtual assistants and increased efficiency. This alignment highlights the importance of developing a transparent yet cohesive digital approach similar to Singapore's with clearly defined levels and accessible at all levels, and capable of utilizing resources available in America to meet specific tax obligations

7- The Potential of AI in Algeria's Tax Administration

The introduction of artificial intelligence in the administration of taxation in Algeria offers a huge opportunity for transformative efficiency, transparency, and compliance. Considering the rapidly changing global environment and a growing push toward digitization, application of AI would position Algeria to catch up with modernization to the best international standards. Thus, next section looks into the benefits and challenges of integrating Artificial Intelligence into the Algerian tax system

7-1 The benefits of AI integration in Algerian Tax Administration

The advantages of AI integration in the Algerian tax administration are twofold: it boosts services and accessibility for taxpayers, while improving the effectiveness of tax revenue collection, strengthening fraud control, and ensuring compliance for the tax administration.

7-1-1 Improving Taxpayer Services

AI-driven chatbots and virtual assistants have the potential to provide a fundamental paradigm shift in how taxpayers interact with tax administrations. It can provide direct support to the user, give simple answers to questions, or even guide them through the process in order to make the experience pleasant for the taxpayers. The system will answer, using natural language processing, in several languages such as Arabic, French, and Berber, since those are the populations that coexist in Algeria.

7-1-2 Tax Revenue Collection Effectiveness

Artificial intelligence can substantially enhance the tax collection process. Machine learning algorithms can be used to analyze large financial and transactional databases for

patterns indicative of tax evasion or underreporting. The use of AI technology in automating routine tasks, especially in data entry and verification, would significantly reduce administrative burdens and decrease the incidence of errors. It allows better predictive analysis on tax collections, thus leading to better fiscal planning and more judicious use of resources

7-1-3 Managing Fraud and Ensuring Compliance

Hence, the most promising area of application of artificial intelligence in tax administration is in fraud detection. The systems driven by AI perform analysis of transactions to detect patterns that suggest tax evasion while, at the same time, cross-checking data from other external bodies such as financial institutions, businesses, and offshore databases for compliance by uncovering inconsistencies. This proactive approach reduces dependence on conventional methods of auditing and increases levels of compliance in general

7-2 Barriers to Implementation

While it brings its own benefits, the implementation of artificial intelligence in the Algerian Tax Administration also entails numerous challenges.

- **Data Quality and Availability:** Most AI applications need a huge amount of good quality data. As far as the infrastructure currently needed to support the deployment of AI applications is concerned, there is still much for the Algerian authorities to achieve.
- **Technical Competencies:** The design and maintenance of artificial intelligence systems require specific skills that are, therefore, not easily available in the country; it is thus sensible that these competencies be developed through training programs in collaboration with international entities.
- **Ethical and Regulatory Considerations:** The ethical use of artificial intelligence systems, along with the protection of taxpayer confidentiality, is of considerable relevance in this regard. Consequently, Algeria should build a strong regulatory framework that would act as an overarching guide to govern the use of AI in tax administration.
- **Implementation Cost:** The initial investment in the infrastructure of AI is a huge amount. The stakeholders must be promised sufficient resources and potential long-term gains to persuade them to approve this project.

Recommendations:

The main ways in which Algeria would likely be able to apply artificial intelligence effectively include:

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- Formulating a detailed master plan: Explain in detail how the tax administration framework will be integrated with artificial intelligence, including clear goals, timelines, and performance appraisal criteria.
- Investments in infrastructure: Build relevant digital infrastructure, including high-capacity data processing, storage, and related security arrangements that will put AI into practice.
- Enhance cooperation between the Public and the Private Sectors: Encourage the collaboration of private sectors with international organizations with a view to acquiring technically advanced solutions and know-how.
- Capacity Building: Avail and enhance training programs so that tax officials become more confident while using and managing the Artificial Intelligence systems.
- Ensure Transparency and Accountability: Establish such measures that ensure the AI system is always watched over to ensure fairness and transparency.

Therefore, such challenges being addressed and with a more conscious way of adoption, artificial intelligence will reflect the progress of Algeria because of its powerful transformative influence with respect to tax administration. In this regard, the country is moving forward towards an efficient, transparent, and fair tax administration system.

Conclusion:

The use of artificial intelligence in the taxation system of Algeria is a great opportunity to make things better, clearer, and easier to follow. By looking at the advanced uses of AI in Singapore and the United States, Algeria can use these technologies to update its tax rules and fix problems linked to digitalization. This would enable the development of a robust and adaptive tax system in finding fraud, predictive analytics in forecasting how taxpayers will behave, and AI-powered virtual assistants for better taxpayer services.

However, making these work well needs to deal with important problems, such as issues with data quality, technical skills, ethical concerns, and money limits. Good planning, building necessary structures, working together with public and private groups, and improving skills are very helpful in overcoming these challenges for lasting use.

With AI, Algeria will be following the best practices globally in order to create a fairer tax system that puts citizens first. This change will bring not just better efficiency in operations but also increased public trust and compliance, supporting all the bigger goals for digital transformation in Algeria.

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