

# **Tax Evasion and the Role of Digitalization in Detection and Prevention: A Critical Literature Review**

**Mohd Fauzi Jahaya**

**Nadiah Abd Hamid**

Faculty of Accountancy, Universiti Teknologi MARA, Menara Sultan Abdul Aziz Shah (SAAS), Shah Alam, Selangor, Malaysia

**Saifulrizan Norizan Nor**

Faculty of Accountancy, Universiti Teknologi MARA, Cawangan Sarawak, Kampus Samarahan, Sarawak

**Roszilah Shamsuddin**

Faculty of Accountancy, Universiti Teknologi MARA, Menara Sultan Abdul Aziz Shah (SAAS), Shah Alam, Selangor, Malaysia

**Aristanti Widyaningsih**

Program Studi Akuntansi, Fakultas Ekonomi dan Bisnis,  
Universitas Pendidikan Indonesia, Bandung, Indonesia.

---

## **Abstract**

This concept paper examines how digitalization strengthens the detection and prevention of tax evasion in Malaysia by focusing on three key dimensions: tax automation, artificial intelligence (AI) and big data analytics, and the expansion of the digital economy. Grounded in Economic Deterrence Theory, the paper explores how digital tools enhance tax compliance by increasing the probability of detection and altering taxpayer behaviour. Through a qualitative review of current literature, institutional developments, and policy initiatives, the study highlights the positive contributions of systems such as MyTax, e-Invoicing, and AI-driven data analytics in improving transparency, reducing information asymmetry, and enhancing enforcement capacity. The paper also identifies emerging challenges, including cross-border digital transactions, profit-shifting risks, and gaps within existing regulatory frameworks. It concludes by proposing policy recommendations to improve digital infrastructure, strengthen international cooperation, and align Malaysia's tax administration with global standards to support a more resilient, equitable, and future-ready tax system.

**Keywords:** *artificial intelligence; big data analytics; digitalization; tax evasion; tax automation*

---

## INTRODUCTION

Taxation is a primary source of revenue for the Malaysian government and underpins the financing of essential public services, social protection and long-term development programmes (Biah et al., 2023; Chung & Arunasalam, 2022). As Malaysia advances as an upper middle-income economy, sustaining a fair, effective and transparent tax system is critical for public trust and fiscal stability, since tax revenue funds education, healthcare, public safety, infrastructure and targeted support for vulnerable groups (Chung & Arunasalam, 2022; New Straits Times, 2024).

Tax compliance therefore becomes a central pillar of the tax system, encompassing accurate income reporting, timely filing and full payment of tax liabilities (New Straits Times, 2024; Alwi et al., 2022). Persistent non-compliance and tax evasion not only reduce the government's capacity to deliver these services but also undermine the perceived legitimacy of the tax system and erode the social contract between taxpayers and the state (The Star, 2021; Osaloni et al., 2022).

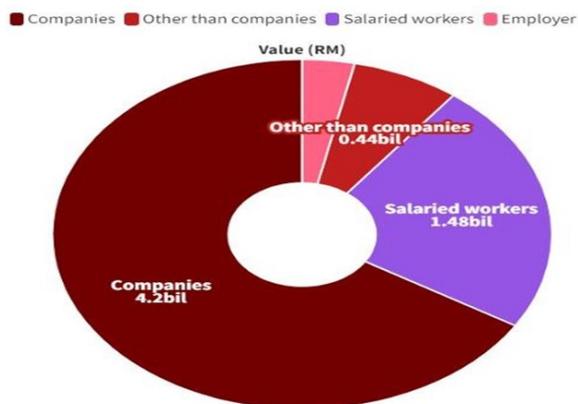
In Malaysia, significant revenue losses from tax evasion and the growth of the shadow economy have intensified concerns about fiscal leakage and the adequacy of existing enforcement mechanisms (The Star, 2023; Loanstreet, 2024). Against this backdrop, digitalization—through tax automation, AI and big data analytics, and the rise of the digital economy—has emerged as a key policy lever to strengthen detection and prevention of evasion (Alm, 2021; Raikov, 2021; Kitsios et al., 2023). Accordingly, this concept paper aims to critically review current literature and institutional developments to assess how digitalization can enhance Malaysia's capacity to detect and prevent tax evasion, and to derive policy recommendations grounded in Economic Deterrence Theory (Allingham & Sandmo, 1972; Ya'u et al., 2023).

## BACKGROUND OF STUDY

In Malaysia, tax evasion is defined under Section 114 of the Income Tax Act 1967. It refers to any unlawful act of deception committed in the submission of tax returns (Biah et al., 2023). Section 114 outlines various actions that constitute wilful evasion, including the omission of income from tax returns, the submission of false statements, the falsification of accounting records and the use of fraudulent schemes to reduce tax liability. The Act also prescribes penalties that include fines, imprisonment and a special penalty equal to three times the amount of tax undercharged. Tax evasion occurs when taxpayers, whether individuals or business entities, deliberately attempt to avoid tax by concealing or misrepresenting their financial activities. Common methods include the failure to report income, conducting transactions using cash or unrecorded channels, concealing assets domestically or abroad, claiming personal expenses as business deductions and using company resources for personal purposes without legitimate justification (The Star, 2021). These actions distort the accuracy of tax assessments and obstruct the ability of tax authorities to collect revenue fairly and efficiently.

Recent data indicates that tax evasion remains a significant challenge in Malaysia. The Star (2024) reported that the Inland Revenue Board of Malaysia uncovered losses amounting to RM 6.34 billion due to tax evasion in 2023. This figure emerged from 137,453 cases of non-compliance detected in that year. When compared with the

development expenditure allocated in Budget 2024, the amount lost to tax evasion exceeded the development budgets of key ministries such as Health, Education and Home Affairs. This comparison underscores the scale of fiscal leakage and its impact on national development planning. Figure 1 illustrates the distribution of tax evasion by category in 2023. Companies represented the largest share, accounting for RM 4.2 billion or 66.3 percent of total tax evasion, followed by salaried workers who accounted for RM 1.48 billion or 23.4 percent. Other business groups contributed RM 0.44 billion or 6.9 percent, while employers made up the smallest category, with RM 0.22 billion or 3.4 percent. These figures demonstrate that tax evasion is not only widespread but also concentrated within specific taxpayer groups, highlighting the need for improved monitoring and enforcement mechanisms.



**Figure 1: Total Tax Evasion by Category in 2023 (The Star, 2024)**

Given these challenges, digitalization has emerged as a critical instrument for strengthening tax administration. Digital tools such as data analytics, artificial Intelligence, automated reporting systems and real time data monitoring have the potential to enhance the detection of irregularities and reduce opportunities for evasion. This study therefore reviews the existing literature to critically examine the role of digitalization in addressing tax evasion and improving compliance in Malaysia.

Malaysia's tax evasion challenges are further intensified by the broader shadow economy, which is estimated to cause an additional loss of approximately RM 70 billion in potential tax revenue. The shadow economy consists of unreported or unregulated economic activities that operate outside the formal financial and regulatory system. These activities include unregistered businesses, cash-based transactions, smuggling, illegal gambling and other illicit trade activities (Loanstreet, 2024). It also encompasses legally permitted but unregistered economic activities, such as operations conducted by unlicensed small businesses, freelance work, part time employment and informal cash-based transactions. Because these activities are not recorded within the official financial system, they fall outside the scope of tax assessment and enforcement. According to a report by the Association of Chartered Certified Accountants in 2017, the shadow economy in Malaysia accounts for approximately 21 percent of the national Gross Domestic Product, representing a value of about RM 330 billion in 2023 (The Star, 2023). This substantial fiscal leakage weakens revenue

mobilisation and limits the government's ability to undertake development programmes.

In response to these challenges, the Inland Revenue Board Malaysia has accelerated the adoption of digital solutions in tax administration. The digital transformation agenda aims to modernise the tax system, improve access to tax related information and streamline compliance procedures for individuals and businesses. One of the most important components of this transformation is the MyTax Portal, an integrated online platform introduced in December 2020 that centralizes various tax services for taxpayers. The platform enables users to submit tax returns through the electronic filing system, update personal or business information through the electronic update system, review tax ledgers that display tax payment histories, make payments through the online payment facility and manage employee monthly tax deductions through the electronic PCB Plus system. The portal also incorporates secure authentication mechanisms using digital certificates and electronic Know Your Customer procedures, thereby strengthening the protection of taxpayer information.

More recently, the Inland Revenue Board Malaysia has implemented two major initiatives, namely the Tax Identification Number and electronic invoicing, with the objective of improving transparency and strengthening tax administration (The Star, 2023). Beginning on 1 January 2022, all Malaysian residents aged eighteen and above were automatically issued a Tax Identification Number to facilitate more comprehensive tracking of taxpayer profiles. This measure enhances the capability of the authority to detect discrepancies, identify undeclared income and reduce opportunities for tax evasion. In parallel, the introduction of electronic invoicing requires that business transactions be recorded digitally, thereby reducing reliance on manual documentation and limiting opportunities for manipulation of financial records. Electronic invoicing promotes accurate reporting of sales, increases traceability across business transactions and supports real time monitoring by tax authorities. These measures are particularly important for detecting individuals and businesses whose income levels have increased substantially but are not reflected in their tax declarations, in contrast to lower income earners who generally remain compliant with tax requirements (Loanstreet, 2024).

## **PROBLEM STATEMENT**

Tax evasion remains a persistent and complex challenge in Malaysia, undermining the integrity of the national taxation system and constraining the government's ability to provide essential services and sustain economic development. Although Section 114 of the Income Tax Act 1967 outlines strong legal provisions that classify intentional evasion as a criminal offence, recent evidence shows that revenue losses from tax evasion continue to rise. The amount lost surpasses the development allocations for key ministries such as Health, Education and Home Affairs, illustrating the substantial fiscal strain imposed on national planning and public sector capacity. These losses are further aggravated by the expanding shadow economy, which includes unregistered businesses, informal cash-based transactions and other unregulated economic activities that escape formal taxation.

Multiple economic, behavioural and institutional factors contribute to persistent tax evasion, but an increasingly important question concerns the extent to which

digitalization can enhance the detection and prevention of such activities. In response to growing leakages, the Inland Revenue Board Malaysia has introduced several digital initiatives, including the MyTax Portal, the Tax Identification Number system and electronic invoicing. These tools aim to improve compliance, strengthen real time monitoring and enhance data transparency. They are designed to streamline reporting, support comprehensive taxpayer profiling and reduce opportunities for manipulation or fraud. However, despite these advances, uncertainties remain regarding the effectiveness, adoption and coverage of these technological mechanisms in addressing the full spectrum of tax evasion practices.

Given these concerns, this concept paper aims to critically review existing literature to assess the role and effectiveness of digitalization in combating tax evasion in Malaysia. It seeks to identify gaps, limitations and structural challenges within the current digital tax enforcement framework, and to explore evidence-based strategies that can enhance the impact of digital interventions on future tax compliance efforts.

## **RESEARCH OBJECTIVES**

1. To examine the role of tax automation in the detection and prevention of tax evasion.
2. To evaluate how Artificial Intelligence and Big Data contribute to the detection and prevention of tax evasion.
3. To analyse the role of the digital economy in enhancing the detection and prevention of tax evasion.

## **LITERATURE REVIEW**

### **Economic Deterrence Theory**

The Economic Deterrence Theory, based on the foundational study by Allingham and Sandmo (1972), suggests that taxpayers make decisions by weighing the potential benefits and costs of evasion, which are influenced by factors like tax rates, the likelihood of being caught, and the severity of penalties. According to Allingham and Sandmo (1972), taxpayers may choose to report either their full or partial income, with the outcome depending on whether an investigation occurs. If no investigation takes place, the taxpayer benefits from underreporting; however, if audited, they face negative consequences. The theory proposes that increasing the probability of detecting undeclared income encourages more truthful income reporting, as taxpayers become more likely to fully disclose their earnings to avoid retrospective scrutiny.

Economic Deterrence Theory explains tax evasion as a rational choice, where taxpayers weigh the financial gains from evasion against the risk and cost of being detected and punished (Allingham & Sandmo, 1972; Ya'u et al., 2023). Higher probabilities of audit and stronger penalties increase the expected cost of evasion, encouraging more honest reporting, particularly in systems where enforcement has historically been weak (Alm, 2021; Shuid et al., 2021). The theory also recognises the influence of institutional factors such as audit intensity, the role of tax agents and the complexity of tax rules, as well as individual risk preferences (Hasseldine & Bebbington, 1991; Ya'u et al., 2023). In this paper, the theory provides the lens for

assessing how digitalization—by increasing detection probability and information transparency—can shift taxpayers' cost–benefit calculations in favour of compliance (Alm, 2021; Raikov, 2021).

According to this theory, taxpayers evaluate the anticipated benefits of complying with tax laws against those of evading them, considering elements like the likelihood of being detected, the strictness of penalties, and the applicable tax rate. (Ya'u et al., 2023). The general deterrence approach, a key element of this theory, suggests that the fear of legal sanctions and financial penalties can discourage non-compliant behavior (Alm, 2021). Moreover, Ya'u et al (2023) highlights that deterrence is also influenced by institutional mechanisms, including tax audits, the presence of tax agents, and the complexity or clarity of tax systems. From this perspective, the economic deterrence model views taxpayers as predominantly rational agents who will choose to comply only if the expected cost of evasion outweighs its financial benefit. This theory has gained prominence in jurisdictions with weak enforcement mechanisms, where lower deterrence levels are linked to higher rates of tax non-compliance.

Meanwhile, Hasseldine and Bebbington (1991) noted that taxpayers' risk preferences also play a crucial role; individuals with higher risk aversion are less likely to engage in evasion, even if the expected payoff is substantial. The economic deterrence theory considers both legal and institutional factors such as the complexity of tax legislation, applicable tax rates, and penalties for non-compliance as well as economic conditions, all of which may contribute to influencing tax evasion behavior (Shuid, Zazili, & Basri, 2021). According to Chung and Arunasalam (2022), under the economic deterrence theory individuals may take the risk of evading taxes if they believe the financial benefit outweighs the chance of being caught. To counter this, increasing the likelihood of detection and imposing heavier penalties can effectively discourage tax evasion, although some studies suggest that higher tax rates may still lead to more evasion despite stricter enforcement.

## **Tax Evasion**

Tax evasion behavior involves deliberate and unlawful actions by individuals or organizations intended to reduce their tax liabilities or completely avoid paying their taxes obligations (Ya'u et al., 2020). Kemsley et al. (2022) explain that two essential criteria must be fulfilled to classify an act as tax evasion. First there must be a deliberate intention to pay less tax and secondly there must be an intentional false representation of the taxable income. If either of these elements is absent, the act does not constitute tax evasion. According to Chung and Arunasalam (2022), tax evasion involves intentional breach of tax regulations, considered a legal offense, where individuals fraudulently reduce their tax liabilities or submit false information on tax returns, potentially facing significant penalties from tax authorities.

According to Alwi et al. (2022) tax evasion is a significant offense that can undermine the stability of a nation's economic, political, and social structures. Economically, it disrupts the fair distribution of income among the citizens. According to Osaloni et al. (2022), the consequences of tax evasion extend far beyond its impact on tax authorities, causing greater harm to the economy and the nation overall. In many countries, the perception of tax evasion is closely linked to concerns over the weight of the tax burden. Political and psychological effects often emerge when taxpayers feel that

taxes are disproportionately high in relation to their income, prompting them to engage in evasion or fraud. Nonetheless, the perception of tax burden should not be universally assessed using the same criteria across all nations (Osaloni et al. 2022).

One of the main challenges for governments is monitoring taxpayers' financial activities and verifying the accuracy of their income declarations. This difficulty comes from the limited access to complete and timely information, particularly in cash-based transactions that leave no traceable records (Alm, 2021). To address this, digitalization emerges as a vital tool for enabling accurate data collection, transaction tracking, and fraud prevention (Alm, 2021). Uyar et al. (2021) also emphasize that innovations in public administration, such as e-government services, enhance government efficiency and ultimately reduce tax evasion. It also mentioned that digitization of public services enhances the transparency and accountability of government institutions.

## **Digitalization**

Digitalization has significantly reshaped the landscape of tax administration and compliance. Raikov (2021) emphasizes the role of digital platforms and ecosystems in creating a transparent taxpayer network that fosters trust among individuals, businesses, and government agencies. In such digital environments, participants are encouraged to share data securely and conveniently, contributing to a hybrid reality where traditional and digital interactions merge. This interconnected system enhances visibility and traceability of transactions, providing tax authorities with real-time insights into economic activities (Raikov, 2021). As a result, digital technologies not only increase the efficiency of tax systems but also reshape the relational dynamics between stakeholders by reinforcing accountability and transparency.

Furthermore, digitalization plays a pivotal role in enhancing governments' ability to detect and deter tax evasion. Uyar et al. (2021) underscore that the digitization of government services leads to more effective strategies in combating tax non-compliance. Alm (2020) elaborates that digitalization enables the collection of much richer information, timelier of information, and precise data, alongside the application of advanced analytics and predictive tools. This allows tax administrations to better design policies and enforcement strategies. However, Alm also cautions that these same technologies could be exploited by private entities to find novel ways of evading tax obligations. Thus, while digitalization introduces unprecedented tools for enhancing tax enforcement, it also necessitates a concurrent strengthening of safeguards to prevent misuse and ensure data integrity.

Moreover, the integration of digital technologies into public administration has revolutionized tax operations and service delivery. Kitsios et al. (2023) highlight that digital transformation has enabled governments to automate and streamline various functions, including electronic filing, automated audits, and real-time revenue monitoring. Such capabilities improve both compliance and enforcement, reduce administrative burdens, and allow authorities to detect discrepancies and risks with greater accuracy. Meanwhile, Osaloni et al. (2022) mention that tax data processing using rule-based algorithms supports the identification of tax evaders, retrieval of records, and efficient management of payment progressions. These advancements reduce dependency on paper-based systems and significantly increase the accuracy and speed of tax-related procedures. Collectively, digitalization emerges as a critical

enabler of modern tax administration, improving both operational effectiveness and the taxpayer experience.

### **Role of Tax Automation**

Ganyam et al. (2019) described tax automation as a computerized system designed to assist taxpayers in fulfilling their tax responsibilities more efficiently, utilizing digital networks and infrastructure established by tax authorities. Historically, the concept of e-taxation emerged in the 1980s as part of broader tax automation efforts, aimed at streamlining tax refund processes and addressing issues of tax evasion by revenue agencies.

Digitalization enables tax authorities to provide services such as electronic tax filing, pre-filled tax returns, and e-payment systems, which enhance compliance and enforcement through real-time monitoring, audits, and data-driven risk assessments. Additionally, it streamlines administrative processes, significantly reducing the time and effort required for both taxpayers and tax officials (Kitsios et al., 2023).

According to Osaloni et al. (2022) tax automation serves to close the gap between tax authorities and taxpayers by minimizing chances for manual interactions during the processes of tax registration, filing, and payment. Traditionally, tax procedures involve tax officers calculating the amount due, issuing payment notices, and requiring taxpayers to submit proof of payment to the authorities. With automation, these complex steps are consolidated into a user-friendly online platform, accessible through computer applications and internet connectivity.

As a result, tax automation facilitates quicker and more convenient tax payments and filings, eliminates the need for in-person bank visits with cash or cheques, and reduces the administrative burden on tax officials by minimizing tasks such as issuing notices, conducting follow-ups, and handling negotiation requests (Osaloni et al. 2022). Moreover, it significantly cuts operational costs by lowering reliance on manual labor and logistics. Beyond combating tax evasion, tax automation also addresses issues like poor record-keeping, incidences of double taxation, and bribery between taxpayers and tax officers.

Alm (2021) examined how digitalization impacts tax evasion and suggested that advancements in technology can enhance the flow of information to governments, thereby strengthening their capacity to reduce tax evasion. However, he also noted that technological progress may enable some individuals or businesses to develop new methods for evading or avoiding taxes.

### **Role of Artificial Intelligence (AI) and Big Data**

The integration of Artificial Intelligence (AI) and Big Data into tax administration has significantly enhanced the detection and prevention of tax evasion. Raikov (2021) emphasizes that AI systems can process extensive datasets to identify patterns indicative of fraudulent behavior, enabling tax authorities to detect inconsistencies in taxpayer information and predict potential non-compliance. This predictive capability allows for more targeted audits and efficient allocation of resources, thereby improving overall tax enforcement.

According to Raikov (2021) shown that the adoption of AI and Big Data analytics facilitates real-time monitoring of transactions, which aids in promptly identifying and addressing tax discrepancies. This real-time analysis not only enhances compliance but also reduces the administrative burden on tax authorities by automating routine tasks and minimizing manual interventions.

Artificial Intelligence (AI) is playing an increasingly vital role in the fight against corruption, particularly in the detection and analysis of extensive datasets. With advanced algorithms, AI can rapidly process large volumes of data, enabling the identification of anomalies or irregularities in financial records and government operations that may indicate corrupt practices. These systems can detect patterns that may go unnoticed by human analysts, offering a valuable resource for law enforcement and anti-corruption agencies in addressing fraud and embezzlement (Dewi et al., 2025).

### **Role of Digital Economy**

The emergence of the digital economy has transformed traditional business models, enabling enterprises to operate globally without a physical presence, thus complicating tax enforcement efforts. A digital economy is an economic system powered by digital technologies, particularly those operating electronically and over the internet. It encompasses platforms such as e-commerce websites, app stores, ride-hailing services, online advertising channels, digital payment systems, cloud computing, and interactive online platforms (Anyanechi & Victor., 2021). Examples of digital service providers include global giants like Netflix, Alibaba, AliExpress, PayPal, Amazon, LinkedIn, Facebook, and Twitter. According to Organisation for Economic Co-operation and Development (OECD) (2015), the digital economy is marked by a strong reliance on intangible assets, widespread utilization of data particularly personal data and the dominance of multi-sided business models that generate value from externalities associated with free services. It also presents significant challenges in identifying the appropriate jurisdiction where economic value is generated.

Further mention by Anyanechi & Victor, (2021) in contrast to traditional businesses, digital enterprises can earn substantial income across borders without establishing a physical office or hiring local staff. Under current tax regulations, the absence of a physical presence often translates into little or no tax obligations in the host country. This loophole has prompted tax authorities worldwide to closely scrutinize digital economic activities and consider new policy measures to ensure fair taxation.

According to Osaloni et al. (2022), the expansion of information technology has not only facilitated legitimate digital transactions but also enabled tax evasion through practices like underreporting income, digital smurfing, and bypassing local tax regulations. Their findings in the Nigerian context reflect a broader global concern: that digitalization, while boosting innovation and growth, can also undermine national tax systems if regulatory frameworks are not updated to reflect technological realities.

The digital economy section focuses on how borderless, data-driven business models challenge traditional tax rules based on physical presence (OECD, 2015; Anyanechi & Victor, 2021). While digital platforms expand economic opportunities, they also enable profit shifting, anonymity and under-reporting of income, which complicate

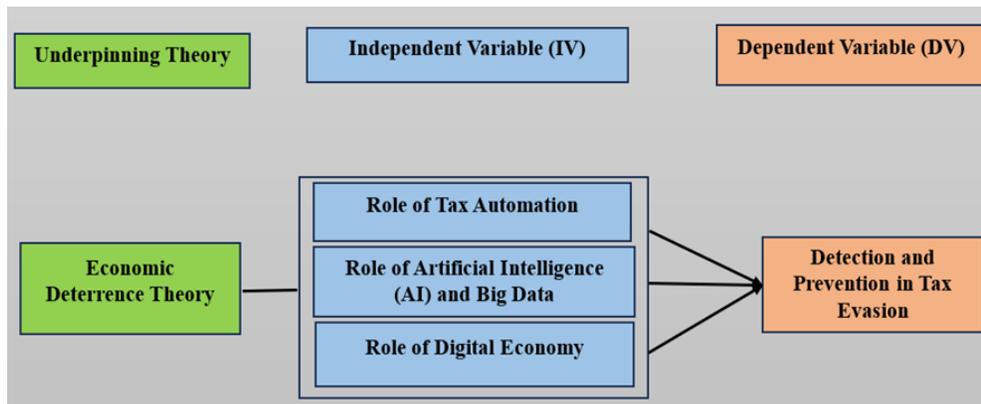
efforts to identify where value is created and where taxes should be paid (OECD, 2015; Osaloni et al., 2022). This dual nature of the digital economy underscores the need for updated rules and international coordination, including measures like digital services taxes and participation in OECD BEPS initiatives (OECD, 2015; Anyanechi & Victor, 2021).

### Challenges of Digitalization in Tax Administration

Although digitalization offers substantial opportunities to enhance tax enforcement, it also introduces several practical and regulatory challenges that can limit its effectiveness (Alm, 2021; Raikov, 2021). In Malaysia, one key difficulty concerns cross-border digital transactions, where platform-based businesses generate significant income from local users without establishing a physical presence, complicating the application of existing nexus and source rules under the Income Tax Act 1967 and creating enforcement blind spots for the Inland Revenue Board of Malaysia (OECD, 2015; Anyanechi & Victor, 2021).

Enforcement is further constrained by fragmented data systems, inconsistent reporting standards and limited analytical capacity, which hinder the integration of third-party data from banks, e-commerce platforms and other agencies into a comprehensive risk-profiling framework (Alqudah et al., 2025; Kitsios et al., 2023). Moreover, the rapid adoption of AI and big data analytics raises ethical and governance concerns related to data privacy, algorithmic bias and transparency, requiring clear legal safeguards and oversight mechanisms to prevent misuse while maintaining taxpayer trust (Alm, 2021; Dewi et al., 2025; Wang, 2024).

### CONCEPTUAL FRAMEWORK



**Figure 2: The Proposed Conceptual Framework**

Figure 2 above depicts a conceptual framework that had been discussed on the literature review. This study proposes a conceptual framework that illustrates the relationships between all the key variables for the role of digitalization in detection and prevention tax evasion. Thus, this conceptual paper emphasizes the need of strategies to be planned and implemented under the roles of digitalization specifically

for the role of tax automation, AI and Big Data and also Digital Economy to detect and prevent tax evasion in Malaysia.

## **DATA COLLECTION**

This study employs a qualitative desk research approach to look at the link between the role of digitalization such as the role of tax automation, AI and Big Data and Digital Economy to detect and prevent tax evasion. The methodology in this research is to analyze the existing literature review and identify the gaps, challenges and impacts on the mentioned strategies in preventing tax evasion.

Data for this study was collected from the following sources such as academic research from a journal or articles published in various searching platforms such as Scopus, Science Direct, Emerald Insight, Google Scholar. Besides that, the issues on the background of study and problem statement were found in an online newspaper to relate with latest scenario and condition of tax evasion in Malaysia and worldwide. Other than that, information was also cited to publication by organizations such as Inland Revenue Board of Malaysia (LHDN). All sources in this research are properly cited to ensure intellectual integrity. Objective was maintained by avoiding over-reliance on sources with potential conflict of interest.

## **ANALYSIS OF FINDINGS**

The digitalization of tax automation such as usage of electronic tax filing and e-payment systems has shown positive results that demonstrate the crucial impact of e-government services in reducing tax evasion. Based on the findings by Khalil Nimer et al. (2022), tax automation through e-government initiatives significantly contributes to the prevention and detection of tax evasion by enhancing transparency and reducing opportunities for manipulation in tax reporting processes. A study on the adoption of electronic tax filing in Indonesia by Sijabat (2020), has shown that it improved the efficiency and accuracy of tax administration, making it easier to detect discrepancies and reduce tax evasion. The research also highlights that user-friendly digital platforms and consistent government support are key factors in encouraging taxpayer compliance through automation. The similar findings on role of tax automation had positive relationship to prevent tax evasion was found in study by Uyar et.al. 2021 and Osaloni et al. 2022.

A study by Alqudah et al., 2025 into Jordanian auditing firms highlights that the use of AI and machine learning (ML) in detecting tax evasion aligns with Raikov (2021) research, demonstrating their effectiveness in identifying financial irregularities more quickly and accurately than traditional methods. While AI and ML are gaining traction among Jordanian auditors for modernizing the audit process, the limited adoption of Big Data Analytics reflects broader challenges seen in developing economies such as insufficient infrastructure and expertise suggesting that more investment in skills and resources is needed to fully leverage these advanced technologies.

Wang (2024) in her analysis stated that AI has significantly enhanced the efficiency and accuracy of tax administration by streamlining audits, accelerating processing, and improving risk detection, thereby reshaping the functional role of tax authorities and demanding new technical competencies. However, these advancements also necessitate substantial reforms in administrative frameworks, as AI-driven

systems—such as those incorporating blockchain—alter compliance monitoring and enforcement, requiring adaptation to maintain legal integrity and operational effectiveness.

Meanwhile, the study by Raikov (2021) highlighted that the digital economy facilitates tax avoidance and evasion by enabling firms, especially in e-commerce, to avoid or evade taxes by taking advantage of legal gaps, anonymity, and mobility, which weakens the tax enforcement. It also complicates international taxation, as global companies operate across borders, making it harder to trace income sources and assign the correct tax jurisdiction due to different national tax rules.

Overall, empirical studies indicate that digitalization is associated with measurable reductions in tax evasion and improvements in compliance outcomes across different jurisdictions (Khalil Nimer et al., 2022; Uyar et al., 2021; Osaloni et al., 2022). For example, e-government and e-filing initiatives have been linked to higher voluntary compliance, greater transparency in reporting and lower manipulation opportunities, particularly when combined with adequate internet access and education quality (Khalil Nimer et al., 2022). At the same time, evidence from developing economies highlights capacity gaps, as limited infrastructure, skills and data integration constrain the full benefits of AI, big data and automation, suggesting that institutional readiness mediates the impact of digital tools on tax evasion (Alqudah et al., 2025; Uyar et al., 2021). Table 1 below shown the key empirical findings on digitalization and tax evasion which have been included in this study.

**Table 1: Key empirical findings on digitalization and tax evasion**

Study / context	Digital tool(s) examined	Main effect on evasion / compliance
Nimer et al. (2022), multi-country	E-government, e-filing, school internet access	Lower tax evasion where e-government and education quality are stronger
Sijabat (2020), Indonesia	Electronic tax filing	Higher efficiency and accuracy, improved detection of discrepancies .
Uyar et al. (2021), cross-country	E-government, ICT	E-government reduces evasion; ICT strengthens this effect .
Osaloni et al. (2022), Nigeria	Information technology, rule-based processing	Better identification of evaders and improved record management .
Alqudah et al. (2025), Jordan	AI and machine learning in audit	Faster and more accurate detection of irregularities; big data under-used .
Kitsios et al. (2023), cross-border fraud	Digitalization of cross-border transactions	Digitalization can both reduce and facilitate cross-border fraud depending on regulation .

## **POLICY IMPLICATIONS AND RECOMMENDATIONS**

findings of this concept paper reveal that digitalization offers significant tools to detect and prevent tax evasion. However, to maximize the effectiveness of these tools, policy interventions must be tailored around three core digital enablers: tax automation, AI and Big Data, and the digital economy.

### **Strengthening Tax Automation Infrastructure and Governance**

Tax automation has demonstrated significant potential in improving tax compliance and reducing the opportunities for manipulation within the taxation process. To strengthen this function, Malaysian tax authorities should prioritize the expansion and modernization of automated platforms like the MyTax Portal and e-Invoicing systems. Enhancing user accessibility, ensuring system security, and regularly updating the platforms, tax reporting and payment processes can be made more efficient and transparent.

Moreover, extending tax automation to cover broader segments of the economy including Small and Medium Enterprises (SMEs) and gig economy workers would reduce manual reporting errors and increase compliance across diverse taxpayer groups. The use of automation should also be complemented by targeted taxpayer education and awareness to improve digital literacy and system usage.

In practical terms, IRBM could prioritise: (i) full integration of MyTax, e-Filing, TIN and e-Invoicing into a single taxpayer account interface, (ii) mandatory e-Invoicing rollout schedules by firm size and sector, and (iii) API-based links between accounting software used by SMEs and IRBM systems to reduce manual data entry (The Star, 2023; Loanstreet, 2024). Parallel investments in taxpayer education, especially for SMEs and gig workers, would help reduce resistance and ensure that automation eventually translates into more accurate reporting rather than superficial compliance (Ar et al., 2021; Osaloni et al., 2022).

### **Advancing the Use of AI and Big Data in Compliance and Enforcement**

The adoption of AI and Big Data must be accelerated to enhance the analytical capabilities of tax authorities. AI-driven tools enable the detection of suspicious patterns, the identification of non-compliant taxpayers, and the prediction of tax evasion risks with a higher degree of accuracy than traditional audit methods. Integrating these technologies into LHDN's operational framework would allow for more focused and efficient enforcement.

Moreover, to fully utilize the benefits of AI, the tax administration must also invest in upskilling workforce, developing technical expertise in data analytics, and ensuring high technical standards in the use of predictive algorithms. Establishing a centralised data infrastructure that consolidates information from multiple financial and governmental sources would further strengthen the capacity to uncover hidden income and tax evasion.

To operationalise AI and big data, IRBM should consider establishing a dedicated analytics unit responsible for developing risk-scoring models based on multi-source data, including banking, customs, company registries and major platform providers

(Raikov, 2021; Alqudah et al., 2025). Clear governance frameworks on data protection, algorithmic transparency and bias mitigation are needed to maintain public trust while enabling targeted audits and real-time anomaly detection (Alm, 2021; Wang, 2024). Collaboration with universities and technology firms could support capacity building and accelerate model development tailored to Malaysia's tax environment (Kitsios et al., 2023; Dewi et al., 2025).

### **Regulating the Digital Economy to Reduce Tax Base Erosion**

The regulatory framework surrounding the digital economy must be revised to address the tax challenges posed by borderless online transactions. Companies operating in e-commerce platforms, digital advertising, and content creation often generate substantial income without physical presence in the taxing jurisdiction, making it difficult to enforce tax obligations. Therefore, policies such as the implementation of digital services tax and the mandatory use of Tax Identification Numbers (TIN) for all economic participants are necessary to close the compliance gap.

Additionally, Malaysia should collaborate more actively in international initiatives, such as the OECD Base Erosion and Profit Shifting (BEPS) framework, to ensure fair allocation of taxing rights and to tackle profit shifting by multinational enterprises (OECD, 2015). By aligning domestic laws with international tax standards and strengthening cooperation with foreign tax authorities, Malaysia can more effectively address the erosion of its tax base caused by the digital economy.

For the digital economy, Malaysia could refine its digital services tax regime by aligning taxable thresholds, nexus rules and reporting requirements with emerging OECD guidance, while strengthening information-sharing agreements with major digital platforms (OECD, 2015; Anyanechi & Victor, 2021). Introducing simplified registration and payment systems for non-resident digital service providers would reduce administrative barriers and increase compliance, especially among smaller cross-border operators (OECD, 2015). At the same time, enhanced exchange of information and joint audits with other jurisdictions would help address profit shifting by large multinational enterprises engaged in digital activities (OECD, 2015; Raikov, 2021).

## **CONCLUSION**

This concept paper has critically explored the role of digitalization in detecting and preventing tax evasion, with particular emphasis on three key areas: tax automation, artificial intelligence (AI) and big data analytics, and the governance of the digital economy. The findings indicate that while tax evasion remains a serious and growing challenge in Malaysia as evidenced by billions in revenue losses and the expansion of the shadow economy, technological advancements offer promising tools for strengthening tax compliance and enforcement.

Tax automation, through initiatives such as the MyTax Portal, Tax Identification Number (TIN), e-Filing, and e-Invoicing, has demonstrated significant potential in enhancing administrative efficiency, reducing human error, and increasing voluntary compliance. Meanwhile, the integration of AI and big data analytics has improved the detection of fraudulent activities by enabling real-time monitoring, predictive risk

assessment, and targeted audits. These digital measures align with the Economic Deterrence Theory, which suggests that increasing the likelihood of detection and the severity of penalties can effectively discourage tax evasion. These technologies not only increase the detection probability but also reduce administrative burdens and improve audit precision.

In the context of the digital economy, however, new challenges have emerged. The rise of borderless digital business models, the reliance on intangible assets, and the difficulty of assigning value creation to specific jurisdictions have all complicated traditional tax enforcement mechanisms. As such, digital platforms and cross-border transactions require new regulatory frameworks that are adaptive, transparent, and internationally coordinated. Aligning Malaysia's tax policies with global initiatives such as the OECD's Base Erosion and Profit Shifting framework is essential to closing existing gaps in international taxation.

Overall, the review suggests that digitalization enhances the probability of detection, improves audit precision and reduces administrative burdens, thereby reinforcing the deterrent effect central to Economic Deterrence Theory (Allingham & Sandmo, 1972; Alm, 2021). However, the same technologies also create new forms of risk, particularly in borderless digital business models that challenge traditional notions of tax nexus and source of income (OECD, 2015; Raikov, 2021).

Future research should empirically evaluate the effectiveness of specific Malaysian initiatives such as MyTax, TIN and e-Invoicing on compliance rates, audit outcomes and shadow-economy participation, using micro- or macro-data from IRBM and other agencies (The Star, 2023; Loanstreet, 2024). Additional work is also needed on taxpayer perceptions of digital tools, the ethical implications of AI-driven risk profiling, and the design of international tax rules for digital platforms operating without physical presence (Alqudah et al., 2025; Wang, 2024; OECD, 2015). Addressing these issues would provide a stronger evidence base for refining Malaysia's digital tax administration strategy in line with global standards such as the OECD's BEPS framework (OECD, 2015).

Furthermore, future empirical research in Malaysia could, for instance, examine changes in audit yields, detected non-compliance cases or voluntary filing rates before and after the introduction of MyTax, TIN and e-Invoicing, using time-series or panel data from Inland Revenue Board of Malaysia reports (The Star, 2023; Loanstreet, 2024). Such quantitative evidence would provide stronger causal insights into how specific digital initiatives influence tax evasion patterns across sectors and taxpayer groups (Biah et al., 2023; Chung & Arunasalam, 2022).

## **DIRECTIONS FOR FUTURE RESEARCH**

This concept paper highlights several avenues for future empirical and conceptual research on digitalization and tax evasion in Malaysia (Alm, 2021; Raikov, 2021). First, quantitative studies could examine the impact of specific initiatives—such as MyTax, TIN and e-Invoicing—on audit yields, detected non-compliance cases, voluntary filing rates and sector-level tax gaps using IRBM and Ministry of Finance data over time (The Star, 2023; Loanstreet, 2024).

Second, survey- and interview-based research could explore taxpayers' perceptions of digital tools, including trust in online systems, perceived fairness of AI-driven risk profiling and behavioural responses to increased monitoring, particularly among SMEs, gig-economy workers and digital-platform users (Biah et al., 2023; Alwi et al., 2022; Ya'u et al., 2023). Third, comparative and legal analyses could investigate how Malaysia's regulatory treatment of the digital economy and cross-border services aligns with OECD BEPS recommendations and the practices of other upper middle-income countries, with a focus on nexus rules, profit allocation and information-sharing arrangements (OECD, 2015; Anyanechi & Victor, 2021; Kitsios et al., 2023).

Finally, interdisciplinary work on governance frameworks for AI, big data and privacy in tax administration could help design safeguards that balance effective enforcement with ethical and legal protections, informing future reforms to Malaysia's tax and data-protection laws (Alqudah et al., 2025; Dewi et al., 2025; Wang, 2024).

## REFERENCES

- Allingham, M.G., & Sandmo, A. (1972). *Income tax evasion: A theoretical analysis*. *Journal of Public Economics*, 1, 323-338. [https://doi.org/10.1016/0047-2727\(72\)90010-2](https://doi.org/10.1016/0047-2727(72)90010-2)
- Alm, J. (2021). *Tax evasion, technology, and inequality*. *Economics of Governance*, 22(4), 321–343. <https://doi.org/10.1007/s10101-021-00247-w>
- Alwi, N. H., Osman, Z., & Khan, B. N. A. (2022). *Tax Evasion Behavior among Salaried Worker in Malaysia: A Socio- Psychological Framework*. *International Journal of Academic Research in Accounting Finance and Management Sciences*, 12(4), 56–68.
- Alqudah, A. M., Salem, W. A., & Al-haddad, L. (2025). *Data-Driven Detection of Tax Evasion: Integrating AI, Machine Learning, and Analytics for Improved Compliance*. March. <https://doi.org/10.70082/esiculture.vi.1854>
- Anyanechi, S. F., & Victor, O. (2021). *Taxing the Nigerian Digital Economy*. <https://www.lexology.com/library/detail.aspx?g=05a34a67-f49b-4674-9b73-3f7e9fc0004b>
- Biah, O., Galus, B., & Mohamad, M. (2023). *Tax Evasion Tendencies in Malaysia: Do Demographic Profiles Matter?* *Asia-Pacific Management Accounting Journal*, 18(3), 319–338. <https://doi.org/10.24191/apmaj.v18i3-12>
- Chung, N. C. X. T., & Arunasalam, K. (2022). *Tax evasion in Malaysia: A study from taxpayer's perspective*. *Science, Education and Innovation in the Context of Modern Problems*, 5(4). Asia Pacific University, Malaysia.
- Dewi, S., Gary, G., Che Hashim, H. I., & Tanujaya, K. (2025). *The moderating effect of artificial intelligence and ICT adoption on tax evasion*. *Jurnal Akuntansi*, 29(1), 88–106. <http://dx.doi.org/10.24912/ja.v29i1.2556>
- Ganyam. A. I., Ivungu, J. A., & Anongo, E. T. (2019). *Effect of tax administration on revenue generation in Nigeria: Evidence from Benue state*

- tax administration. *International Journal of Economics, Commerce and Mngement*.
- Hasseldine, J., & Bebbington, K.J. (1991). Blending economic deterrence and fiscal psychology models in the design of responses to tax evasion: The New Zealand experience. *Journal of Economy Psychology*, 12, 299-324. [https://doi.org/10.1016/0167-4870\(91\)90018-O](https://doi.org/10.1016/0167-4870(91)90018-O)
- Kemsley, D., Kemsley, S. A., & Morgan, F. T. (2022). Tax evasion and money laundering: A complete framework. *Journal of Financial Crime*, 29(2), 589–602. <https://doi.org/10.1108/JFC-09-2020-0175>
- Kitsios, E., Jalles, J. T., & Verdier, G. (2023). Tax evasion from cross-border fraud: does digitalization make a difference? *Applied Economics Letters*, 30(10), 1400–1406. <https://doi.org/10.1080/13504851.2022.2056566>
- Nimer, K., Uyar, A., Kuzey, C., & Schneider, F. (2022). E-government, education quality, internet access in schools, and tax evasion. *Cogent Economics & Finance*, 10(1), 2044587. <https://doi.org/10.1080/23322039.2022.2044587>
- Loanstreet. (2024, March 20). Shadow economy in Malaysia: What is it & how LHDN tracks it? Loanstreet. <https://loanstreet.com.my/learning-centre/shadow-economy-malaysia-lhdn>
- New Straits Times. (2024, November 18). Contributing more prosperous future. *New Straits Times*. Retrieved [date], from <https://www.nst.com.my/news/nation/2024/11/1135918/contributing-more-prosperous-future>
- OECD (2015). *Addressing the Tax Challenges of the Digital Economy, Action 1 – Final Report*. OECD Publishing. <https://doi.org/10.1787/9789264241046-en>
- Osaloni, B. O., Igbekoyi, O. E., Ogungbade, O. I., & Akpan, J. U. (2022). Information technology and tax evasion practice in Nigeria. *International Journal of Advanced Academic Research*, 8(11). Retrieved from <https://www.ijaar.org>
- Raikov, A. (2021). Decreasing tax evasion by artificial intelligence. *IFAC PapersOnLine*, 54(13), 172–177. <https://doi.org/10.1016/j.ifacol.2021.10.145>
- Sijabat, R. (2020). Analysis of e-government services: A study of the adoption of electronic tax filing in Indonesia. *Jurnal Ilmu Sosial dan Ilmu Politik*, 23(3), 179–197. <https://doi.org/10.22146/jsp.52770>
- Shuid, S. H., Zazili, A. S. A., & Basri, S. A. (2021). Determinant factors of tax evasion. *Global Business and Management Research: An International Journal*, 13(4)
- The Star. (2021, June 27). Aggressive tax planning in M’sia. *The Star*. <https://www.thestar.com.my/starpics/2021/06/27/aggressive-tax-planning-in-msia>

- The Star. (2023, October 18). The shadow economy is shrinking due to TIN and e-invoice. The Star. <https://www.thestar.com.my/news/nation/2023/10/18/the-shadow-economy-is-shrinking-due-to-tin-and-e-invoice>
- The Star. (2024, February 22). Interactive: RM6.34bil lost to tax evasion – IRB. The Star. <https://www.thestar.com.my/news/nation/2024/02/22/interactive-rm634bil-lost-to-tax-evasion---irb>
- Uyar, A., Nimer, K., Kuzey, C., Shahbaz, M., & Schneider, F. (2021). Can e-government initiatives alleviate tax evasion? The moderation effect of ICT. *Technological Forecasting and Social Change*, 166, 120597. <https://doi.org/10.1016/j.techfore.2021.120597>
- Wang, M. (2024). AI technologies in modern taxation: Applications, challenges, and strategic directions. *International Journal of Finance and Investment*, 1(1), 42–46.
- Ya’u, A., Kurawa, N. S., & Badamasi, N. (2020). Mediating role of tax knowledge on the relationship between tax complexity, tax agent, tax audit and petroleum profit tax evasion: A conceptual framework. *Gusau Journal of Accounting and Finance*, 1(2).
- Ya’u, A., Miraz, M. H., Saad, N., Bala, H., Rangasamy, D., Olaniyi, O. N. I., & Mustapha, U. A. (2023). Effects of Economic Deterrence Theory and Environmental Regulation on Tax Evasion: Evidence from Energy Sector. *International Journal of Energy Economics and Policy*, 13(5), 289–302. <https://doi.org/10.32479/ijeep.14736>