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# Tax Digitalization and Taxpayer Compliance: A Systematic Literature Review of Impacts, Determinants, and Barriers

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**Abstract:**

As tax administrations globally accelerate digital transformation, the relationship between tax digitalization and taxpayer compliance remains complex and context-dependent. This study employs a Systematic Literature Review (SLR) to synthesize empirical evidence regarding the impact, adoption determinants, and barriers of digital tax systems. Following PRISMA 2020 guidelines, 45 Scopus-indexed articles published between 2015 and 2025 were selected and analyzed. The synthesis reveals a predominantly positive impact of digitalization on compliance, driven by two primary mechanisms: the facilitation effect (reducing compliance costs through simplified reporting) and the deterrence effect (enhancing fraud detection via data integration). However, the study finds that technological implementation alone does not guarantee success; adoption is heavily contingent upon "psychological contracts," specifically trust in authority, tax fairness, and perceived ease of use. Furthermore, the review identifies significant structural barriers—notably the digital divide, human capital deficits, and data privacy concerns—that can undermine efficiency gains or trigger resistance. The study concludes that while digitalization is a potent tool for revenue mobilization, sustainable compliance requires a "human-centric" policy approach that addresses infrastructural gaps and fosters taxpayer trust.

**Keywords:** Tax Digitalization, Tax Compliance, E-government, Technology Adoption

## Introduction

The rapid expansion of the digital economy has fundamentally challenged traditional tax frameworks, necessitating a significant shift in how tax authorities operate globally. The decoupling of value creation from physical presence has driven international tax reforms, most notably the OECD's Pillar One proposal, which aims to reallocate taxing rights to market jurisdictions to address these complexities (Listokin, 2025).

Concurrently, owing to the difficulties in reaching a global consensus, many jurisdictions have unilaterally adopted Digital Services Taxes (DSTs) and asserted regional initiatives to ensure multinational digital firms contribute their fair share of taxes (Hines, 2023; Lips, 2020; Noonan & Plekhanova, 2020). Beyond policy reforms, tax administrations are increasingly leveraging technology to enhance enforcement. For instance, China's implementation of the "Golden Tax Project III" and CTAIS-3 demonstrates how digital enforcement can drive corporate digitalization and improve internal controls (Chen & He, 2024; He & Yi, 2023). Despite the widespread adoption of these digital systems, the empirical impact of tax digitalization on tax compliance remains a subject of intense debate with conflicting findings in recent literature. Proponents argue that digital technologies, particularly Artificial Intelligence (AI) and blockchain, significantly enhance compliance by streamlining processes, improving transparency, and reducing opportunities for evasion (Belahouaoui & Attak, 2024; He, 2024). Furthermore, digital adoption has been credited with broadening the tax base and increasing government revenue, particularly in regions with established regulatory frameworks (Anggraeni, 2024; Singh & Garg, 2023).

However, the transition to digital taxation is not without its perils. Recent studies highlight significant barriers, including technological integration issues and the potential marginalization of the informal sector and Small and Medium Enterprises (SMEs) due to resource constraints (Anggraeni, 2024; Mohammed et al., 2022). In some contexts, aggressive digitalization has yielded counterproductive results. For example, the introduction of the E-levy in Ghana reportedly led to reduced voluntary compliance due to the perceived increased financial burden (Rakibu & Amoh, 2025). Additionally, the digitization of tax collection raises critical concerns regarding data privacy and security, which, if not addressed, can erode taxpayer trust (Singh & Garg, 2023).

While the existing body of literature is growing, substantial research gaps persist. First, there is a notable geographical bias in current studies, with a heavy concentration on specific countries such as Indonesia, China, and the United States, limiting the generalizability of findings to other developing economies (El-Feel et al., 2025). Second, prior research often overlooks the social equity implications of digital systems, failing to adequately address how digitalization might exacerbate existing inequalities (Agostino et al., 2021). Third, institutional and regulatory challenges, such as the lack of alignment between enforcement jurisdictions and the capacity of state administrations, remain under-explored in the context of global tax governance (Swain, 2010; Қодирова & Djavaheri-Mergny, 2022).

Consequently, a comprehensive systematic literature review is urgently needed to consolidate these fragmented insights and provide a holistic understanding of the interplay between digitalization and compliance. This study aims to bridge these gaps by addressing the following research questions:

- **RQ1:** Does tax digitalization empirically improve tax compliance, and what are the mediating factors affecting this relationship?
- **RQ2:** What are the key determinants impacting the successful adoption of digital tax systems by taxpayers as identified in the current literature?
- **RQ3:** What are the primary barriers and challenges identified in the literature that hinder the effectiveness of tax digitalization in enhancing compliance?

## Research Method

### 2.1. Research Design

This study employs a Systematic Literature Review (SLR) approach to identify, evaluate, and synthesize relevant literature regarding the impact of tax digitalization on tax compliance. This review protocol adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure transparency, objectivity, and reproducibility of the selection process.

### 2.2. Data Source and Search Strategy

The literature search was conducted using the Scopus database, selected for its comprehensive coverage of high-quality journals in social sciences, economics, and taxation. The search was performed in February 2026.

The search strategy utilized a combination of keywords covering the spectrum of tax technology and compliance behavior, connected by Boolean operators (AND, OR). The specific search string applied to the title, abstract, and keywords (*TITLE-ABS-KEY*) was as follows:

*TITLE-ABS-KEY* ( ( "tax digital" OR "digital tax\*" OR "electronic tax\*" OR "e-tax\*" OR "e-filing" OR "e-invoic\*" OR "online tax\*" OR "smart tax\*" OR "tax technolog\*" OR "automated tax\*" OR "pre-filled return\*" OR "ICT in tax\*" ) AND ( "tax compliance" OR "taxpayer compliance" OR "taxpayer behavio\*" OR "tax evasion" OR "tax avoidance" OR "tax morale" OR "voluntary compliance" ) )

### 2.3. Inclusion and Exclusion Criteria

To ensure the quality and relevance of the synthesized literature, a set of specific inclusion and exclusion criteria was applied. First, regarding the document type, the review exclusively included empirical research articles to ensure the validity of the findings, while excluding review articles, conference proceedings, book chapters, and editorials. Second, in terms of language, only articles written in English were selected to maintain global comparability and understanding. Third, regarding accessibility, the study prioritized Open Access articles where the full text was freely available to guarantee the reproducibility of the review process; documents with restricted access or broken links were excluded. Finally, concerning topical relevance, only studies explicitly investigating the impact of digital tax systems on tax compliance behaviors were included, whereas articles focusing purely on technical system architecture without a compliance angle were discarded.

## Result and Discussion

### 3.1. Search Results and Selection Process

The study selection process is illustrated in the PRISMA Flow Diagram (Figure 1). The initial search in the Scopus database yielded a total of 202 documents.

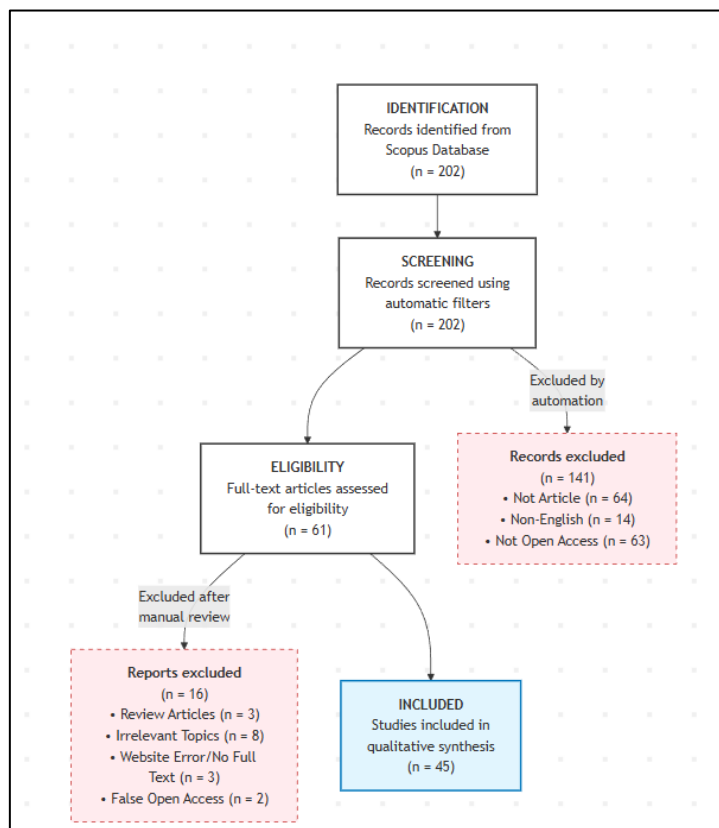


Figure 1. PRISMA Flow Diagram

The first screening phase involved automated filtering based on the inclusion criteria. Limiting the document type strictly to *Articles* reduced the number of documents to 138. Subsequently, the language filter (*English only*) further reduced the count to 124 documents. Given the necessity for data accessibility and reproducibility, an *Open Access* filter was applied, resulting in 61 documents eligible for further review.

The final phase involved a manual screening of titles, abstracts, and full-text availability of the 61 remaining documents. During this stage, 16 documents were excluded for the following reasons: (1) three documents were identified as review articles rather than original empirical studies; (2) eight studies were deemed irrelevant as they discussed digitalization outside the context of tax compliance; (3) three documents had inaccessible full text due to website errors; and (4) two documents were falsely flagged as open access but required subscriptions.

Ultimately, a total of 45 articles met all criteria and were included in the final qualitative synthesis to answer the research questions.

### 3.2. Data Synthesis and Characteristics of Included Studies

A total of 45 studies were selected for the final synthesis. To provide a comprehensive overview of the current state of literature, the selected articles were analyzed based on their publication year, geographical context, and key findings related to the three research questions: the impact on compliance (RQ1), determinants of adoption (RQ2), and barriers to implementation (RQ3).

The majority of the studies (n=25) were published in the last two years (2024–2025), reflecting the growing urgency and relevance of tax digitalization in the post-pandemic era. Geographically, the studies cover a diverse range of jurisdictions, including developing economies (e.g., Indonesia, Nigeria, Ghana, Vietnam) and developed regions (e.g., EU Member States, Italy), providing a balanced perspective on global tax administration trends.

Table 2 presents the synthesis matrix of the included studies, summarizing the key empirical evidence regarding the relationship between tax digitalization and taxpayer compliance.

Table 2. Synthesis Matrix of Selected Studies (Author, Impact, Determinants, and Barriers)

Study ID	Impact on Compliance (RQ1)	Key Determinants of Adoption (RQ2)	Barriers & Challenges (RQ3)
Gupta et al. (2015)	Not addressed (Focus on Adoption).	Perceived Ease of Use, Perceived Usefulness, User Satisfaction. Convenience of service is also critical.	Perceived Risk (security/privacy), lack of digital skills, and confusing instructions.
Waluyo (2017)	Insignificant. Tax amnesty had no significant long-term effect; driven by penalty avoidance.	Not addressed.	Lack of transparency in tax information.
Night & Bananuka (2020)	Positive. E-tax adoption mediates the relationship between attitude and compliance in SMEs.	Attitude towards e-tax and Adoption itself.	Negative attitude, lack of government accountability, and non-transparent systems.
Otekunrin et al. (2021)	Positive. E-tax systems significantly reduce tax evasion (R-Square = 94.6%).	Taxpayer Attitude and perceived effectiveness in fraud detection.	Not addressed.
Klein et al. (2022)	Not addressed (Focus on Investor Reaction).	Not addressed.	Not addressed.
AbdelNabi et al. (2022)	Not addressed (Experimental study on Voice/Empathy).	Not addressed.	Not addressed.
Bellon et al. (2022)	Positive. E-invoicing increased reported sales and VAT liabilities by >5% in the first year.	Not addressed.	Not addressed.

Study ID	Impact on Compliance (RQ1)	Key Determinants of Adoption (RQ2)	Barriers & Challenges (RQ3)
Alkausar et al. (2022)	Not addressed (Focus on Readiness).	Perceived Usefulness (PU) and Ease of Use (for Millennials).	Lack of socialization and uneven technological infrastructure.
Harkushenko (2022)	Positive (Potential). Blockchain and e-invoicing can significantly close the VAT Gap.	Digital infrastructure readiness.	High implementation costs, technical complexity, and data privacy issues.
Do et al. (2022)	Positive. Positive attitude towards e-tax correlates with improved compliance.	Attitude towards e-tax, tax law education.	Data congestion (server errors), cost of digital signatures, complex regulations.
Hermanto et al. (2022)	Not addressed (Focus on Adoption).	Performance Expectancy, Effort Expectancy, Social Influence.	Resistance to change from manual methods.
Utama et al. (2022)	Insignificant. E-Filing did not significantly moderate risk perception and compliance intention.	Religiosity, Perceived Risk, Attitude.	Operational risks (errors), legal risks, and lack of user-friendly features.
Khan & Nuryanah (2023)	Positive. Tax amnesty reduced corporate tax aggressiveness.	Tax incentives and law enforcement.	Legal uncertainty regarding future policies.
Salazar et al. (2023)	Not addressed directly.	Perceived benefits for micro-business efficiency.	Digital divide in micro and small enterprises.
Saptono et al. (2023)	Positive. E-tax quality boosts compliance via User Satisfaction.	System Quality and User Satisfaction.	Poor system quality (bugs/lag) reduces satisfaction.
Fajriana et al. (2023)	Positive. Tax fairness and trust enhance voluntary compliance.	Tax Fairness and Trust in Authority.	Perception of unfairness in digital tax collection.
Monrroy et al. (2023)	Not addressed.	Regulatory simplification for digital influencers.	Regulatory complexity for new digital sectors.
Rokhman et al. (2023)	Positive. E-gov, e-billing, and e-filing significantly improve compliance.	E-Gov Implementation, Perceived Complexity.	Inadequate infrastructure, lack of HR capacity, poor socialization.

Study ID	Impact on Compliance (RQ1)	Key Determinants of Adoption (RQ2)	Barriers & Challenges (RQ3)
Devano et al. (2023)	Positive. E-taxation increases satisfaction, leading to higher compliance.	Taxpayer Satisfaction.	Technical issues with tax portals.
Aren (2024)	Positive. Indirect digital taxation is effective for revenue mobilization.	Clear policy frameworks.	Lack of physical infrastructure, low literacy, immature regulations.
Ariyanto et al. (2024)	Positive. E-filing/e-billing positively affects MSME compliance.	Service Quality, Tax Penalties.	Lack of technological understanding among MSMEs.
Ofosu-Ampong (2024)	Negative/Mixed. E-levy introduction reduced Mobile Money usage due to costs.	Perceived Cost, Trust, Social Norms.	High transaction costs and lack of trust in fund usage.
Dang et al. (2024)	Positive. Open Banking reduces evasion via transparency.	Data transparency and integration.	Data privacy concerns and banking sector resistance.
Tarmidi et al. (2024)	Positive. Modernization aids compliance of digital content creators.	Strict penalties and policy reforms.	Lack of specific socialization for new digital professions.
Hung et al. (2024)	Positive. E-tax apps positively influence SME compliance.	Perceived Usefulness, Ease of Use, IT Skills.	Limited IT skills among SME users.
Milosavljevic et al. (2024)	Positive. Efficient administration correlates with lower tax evasion.	Administrative efficiency, fraud detection.	Bureaucratic inefficiencies.
Abu-Silake et al. (2024)	Positive. Social/tech factors influence digital platform usage.	Trust, Subjective Norms, Ease of Use.	Trust issues regarding the government.
Masuku et al. (2025)	Positive. Electronic payments show highest compliance rates.	Firm Size and payment method (e-payment).	Cash and mobile money lag in compliance.
Kotsogiannis et al. (2025)	Positive. E-invoicing increased net VAT payments and audit efficiency.	Audit Efficiency.	Technology needs effective audits as complements.

Study ID	Impact on Compliance (RQ1)	Key Determinants of Adoption (RQ2)	Barriers & Challenges (RQ3)
Michael et al. (2025)	Positive. E-Tax adoption moderates awareness and compliance.	Tax Awareness, Attitude.	Low tax awareness among MSMEs.
Rossikhina et al. (2025)	Positive. Digital transformation improves financial system efficiency.	Standardization of digital rules.	Regulatory fragmentation across jurisdictions.
Künnapas et al. (2025)	Positive. AI improved fraud detection and compliance efficiency in Estonia.	AI Capabilities, Automation.	Complexity of AI implementation and ethics.
Le (2025)	Positive. TAM and TTF explain 62.5% of e-invoice adoption intention.	Task-Technology Fit (TTF), Usefulness.	Task-Technology Mismatch.
Heinemann & Stiller (2025)	Positive. Mandatory e-invoicing reduced cross-border VAT fraud in Italy.	Domestic Enforcement Capabilities.	Sophisticated Carousel Fraud schemes.
Salawu et al. (2025)	Positive. E-filing has positive effect on SME compliance.	Performance/Effort Expectancy, Awareness.	Lack of awareness regarding system features.
Mogollón García (2025)	Positive. E-invoicing is effective in informal economy contexts.	Monitoring strategies for informal sectors.	High levels of hard-to-track informal economy.
Asmah et al. (2025)	Positive. Performance/Effort Expectancy predict compliance intention.	Performance Expectancy, Effort Expectancy.	Perceived system complexity.
Dote-Pardo et al. (2025)	Mixed. High usage in urban/educated, low in rural/elderly.	Education, Location, Age.	Digital Divide (Age & Geography).
Inegbedion (2025)	Positive. E-tax acceptance contributes to SME tax revenue.	Acceptance of e-tax system.	Low technology acceptance in traditional SMEs.
Menede et al. (2025)	Not addressed specifically.	Tech integration in GST compliance.	Technical glitches and procedural complexity.

Study ID	Impact on Compliance (RQ1)	Key Determinants of Adoption (RQ2)	Barriers & Challenges (RQ3)
Supriyati et al. (2025)	Positive. Digitalization and fairness impact compliance.	Tax Fairness, Tax Awareness.	Perception of tax unfairness.
Petraj & Petraj (2025)	Positive. Tech integration + education = efficient administration.	Fiscal Literacy, Transparency.	Low fiscal literacy among citizens.
Tumoro (2025)	Positive. IT quality significantly reduces tax evasion.	IT Quality (System & User), Innovation.	Persistent culture of tax evasion.
Abad-Segura et al. (2025)	Positive. Tech adoption improves fraud detection in EU.	Technological Solutions Adoption.	Administrative capacity constraints.
Skandalis & Skandali (2025)	Positive. FinTech adoption improves VAT compliance.	Tax Morale, Perceived Audit Probability.	Reliance on cash economy and self-reporting bias.

### 3.3. The Impact of Tax Digitalization on Tax Compliance

The synthesis of the 45 selected studies reveals a predominantly positive correlation between tax digitalization and tax compliance, although this relationship is neither automatic nor uniform across all jurisdictions. The literature indicates that the impact of digital transformation is multifaceted, operating through two primary mechanisms: the "facilitation effect" (reducing compliance costs and simplifying procedures) and the "deterrence effect" (increasing the probability of detection through data integration). However, a subset of studies highlights that without adequate prerequisites—such as trust and infrastructure—digitalization can yield insignificant or even counterproductive results. This section details the empirical evidence regarding these impacts and the mediating factors that govern this relationship.

#### 3.3.1. The Facilitation Effect: Enhancing Voluntary Compliance through Efficiency

A significant portion of the reviewed literature suggests that digitalization positively impacts tax compliance by removing procedural barriers. The transition from manual to electronic systems—specifically e-filing, e-billing, and e-payment—simplifies the taxpayer's journey, thereby reducing unintentional non-compliance caused by complexity or administrative burden.

Empirical evidence from emerging economies strongly supports this view. For instance, Otekunrin et al. (2021) found that the implementation of an effective e-tax system in Nigeria explained approximately 94.6% of the variation in tax compliance levels, arguing that automation significantly curbs tax evasion by streamlining the reporting process. Corroborating this, Salawu et al. (2025) and Rokhman et al. (2023) demonstrated that in Nigeria and Indonesia, respectively, the adoption of e-filing systems had a statistically significant positive effect on the compliance of Small and Medium Enterprises (SMEs). The

underlying mechanism identified in these studies is the reduction of "effort expectancy"; when taxpayers perceive that complying with tax obligations requires less physical effort and time, their intrinsic motivation to comply increases.

Furthermore, Ariyanto et al. (2024) and Hung et al. (2024) extended this argument by highlighting the role of system quality. Their findings indicate that when digital platforms are user-friendly, reliable, and responsive, they reduce the psychological cost of compliance. In this context, digitalization acts as a tool for "enforced voluntary compliance," where the system's design subtly nudges taxpayers toward correct reporting without the need for aggressive coercion.

### 3.3.2. The Deterrence Effect: Reducing Fraud through Data Transparency and AI

Beyond simplification, a growing body of recent literature (2024–2025) emphasizes the role of digitalization in detecting fraud and enforcing compliance through enhanced data visibility. This "deterrence effect" is particularly evident in the implementation of electronic invoicing (e-invoicing) and Artificial Intelligence (AI).

Heinemann and Stiller (2025) provided compelling evidence from Italy, the first EU country to mandate B2B e-invoicing. Their study revealed that the mandatory adoption of e-invoicing significantly reduced cross-border VAT fraud by creating real-time digital trails that make "missing trader" fraud schemes more difficult to execute. Similarly, Kotsogiannis et al. (2025) analyzed administrative data from Rwanda and found that e-invoicing adoption increased firms' net VAT payments and reported sales by over 5% in the first year. They argued that the digital audit trail generated by e-invoicing creates a "self-enforcing" mechanism, as firms are aware that the tax authority possesses granular data on their transactions.

The role of advanced technology is further highlighted by Künnapas et al. (2025) and Abad-Segura et al. (2025), who examined the use of AI and technological integration in Estonia and the broader EU, respectively. Their findings suggest that AI-driven risk assessment tools allow tax authorities to identify high-risk taxpayers with greater precision, thereby optimizing audit resources and increasing the perceived probability of detection. This aligns with the standard economic deterrence model, where compliance rises as the likelihood of being caught increases. Dang et al. (2024) added a new dimension to this discourse by showing that Open Banking initiatives, which integrate banking data with tax systems, significantly reduce tax evasion by eliminating information asymmetry between taxpayers and authorities.

### 3.3.3. The Crucial Role of Mediating Factors

Addressing the second part of RQ1, the literature clarifies that digitalization does not impact compliance in a vacuum. Several mediating and moderating factors play a decisive role in determining whether a digital system succeeds or fails.

1. **User Satisfaction and System Quality:** Saptono et al. (2023) provided empirical evidence that "User Satisfaction" fully mediates the relationship between e-tax system quality and compliance intention. Their study suggests that providing a digital tool is insufficient; if the system is prone to errors (bugs) or difficult to navigate, it negatively impacts user satisfaction, which in turn reduces compliance.

2. Tax Awareness and Attitude: Michael et al. (2025) and Night and Bananuka (2020) identified that "Tax Awareness" and "Attitude towards the system" are critical mediators. Even with a sophisticated digital system, compliance will not improve if taxpayers are unaware of how to use it or hold negative attitudes toward the tax authority. Do et al. (2022) supported this by finding that a positive attitude towards the e-tax system contributed to a 37.3% change in compliance levels among Vietnamese enterprises.
3. Tax Fairness and Trust: Fajriana et al. (2023) and Supriyati et al. (2025) emphasized that digitalization must be accompanied by a perception of "Tax Fairness." Taxpayers are more likely to use digital channels voluntarily if they trust that the government will utilize the collected revenue responsibly.

#### 3.3.4. Insignificant and Mixed Findings: The Limits of Digitalization

Despite the optimistic trend, several studies offer a critical counter-narrative, highlighting that digitalization is not a panacea.

Waluyo (2017) found that the tax amnesty program in Indonesia, despite being supported by digital reporting tools, had an insignificant impact on long-term compliance. The study argued that taxpayers participated primarily to avoid penalties, not because their intrinsic compliance behavior had changed. Similarly, Utama et al. (2022) found that e-filing did not significantly moderate the relationship between perceived risk and compliance intention, suggesting that for taxpayers with low integrity or high risk-taking behavior, the mere existence of a digital channel does not deter evasion.

More critically, Ofosu-Ampong (2024) presented evidence of a "backlash effect" in Ghana. The introduction of a digital levy (e-levy) on mobile money transactions led to a reduction in the use of digital payment platforms. In this case, tax digitalization incentivized taxpayers to revert to the cash economy to avoid the perceived high cost of the digital tax. This finding is supported by Dote-Pardo et al. (2025), who highlighted the "Digital Divide" in Chile, observing that while digital uptake was high among urban, educated populations, it remained low among rural and elderly taxpayers. These studies suggest that without addressing structural barriers such as internet access, digital literacy, and trust, digitalization schemes may inadvertently exclude vulnerable groups or push economic activity into the shadow economy.

In conclusion, while the empirical evidence overwhelmingly supports the positive impact of tax digitalization on compliance through efficiency and deterrence, this relationship is heavily mediated by the quality of the system, taxpayer attitudes, and the broader institutional context. The success of digital tax systems depends not only on the technology itself but also on how well it is integrated into the social and psychological fabric of the taxpayer base.

#### 3.4. Key Determinants Impacting the Successful Adoption of Digital Tax Systems

The successful adoption of digital tax systems is not solely a matter of technological availability; it is a complex behavioral phenomenon driven by an interplay of technological, psychological, social, and economic factors. Addressing the second research question ("*What are the key determinants impacting the successful adoption of digital tax systems by taxpayers?*"), the synthesized literature reveals that while technical

functionality is a prerequisite, the decision to adopt is heavily influenced by trust in the tax authority, digital literacy, and the perceived fit between the technology and business tasks. This section categorizes these determinants into four primary dimensions: Technological Acceptance Drivers, The Psychological Contract (Trust and Fairness), Social and Demographic Contexts, and Economic-Regulatory Incentives.

#### 3.4.1. Technological Acceptance Drivers: Usefulness and Ease of Use

Dominated by the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), the majority of the reviewed studies identify Perceived Usefulness (PU) and Perceived Ease of Use (PEoU)—or their UTAUT equivalents, Performance Expectancy and Effort Expectancy—as the most critical predictors of adoption.

Gupta et al. (2015) and Hung et al. (2024) consistently demonstrate that taxpayers are rational actors who value efficiency. When a digital system is perceived as useful (i.e., it reduces the time spent on filing returns or minimizes calculation errors), the intention to adopt increases significantly. Alkausar et al. (2022) found that for Indonesian millennials, PU was the strongest determinant, suggesting that the "digital native" generation prioritizes the outcome utility of the system over the effort required to learn it.

However, for less digitally savvy populations, Effort Expectancy becomes the primary hurdle. Salawu et al. (2025) and Asmah et al. (2025) highlighted that in contexts like Nigeria and Ghana, if the e-filing interface is cumbersome or prone to technical glitches, taxpayers are likely to revert to manual methods or seek intermediaries. This suggests that "system quality" is not just a technical metric but a behavioral determinant.

Adding a nuanced layer to this, Le (2025) introduced the Task-Technology Fit (TTF) framework in the context of Vietnamese SMEs. The study argued that adoption is not merely about a system being "easy" or "modern," but about the alignment between the technology's capabilities and the specific accounting tasks of the firm. If the digital tax system does not integrate well with the firm's internal ERP or accounting software, the "mismatch" deters adoption, regardless of how advanced the government portal might be.

#### 3.4.2. The Psychological Contract: Trust, Fairness, and Satisfaction

A striking finding from the synthesis is that technology cannot be divorced from the broader relationship between the taxpayer and the state. Several studies argue that Trust in Authority and Tax Fairness are foundational determinants that precede technological interaction.

Fajriana et al. (2023) and Abu-Silake et al. (2024) emphasize that voluntary adoption of digital platforms is essentially a manifestation of trust. In their studies on MSMEs in Indonesia and Jordan, respectively, they found that when taxpayers perceive the tax system as fair—and trust that the government will utilize revenues responsibly—they are more willing to engage with digital channels. Conversely, deep-seated mistrust leads to resistance, where taxpayers view digital systems not as tools for convenience, but as surveillance mechanisms designed to extract more revenue.

Furthermore, Saptono et al. (2023) highlighted the mediating role of User Satisfaction. Their findings suggest a cyclical relationship: high-quality systems generate user

satisfaction, which builds trust, which in turn reinforces the intention to continue using the system. This implies that "User Experience (UX)" in government portals is not merely an aesthetic choice but a strategic compliance tool. If the initial interaction with the e-tax system is frustrating (e.g., server crashes or confusing navigation), it damages the psychological contract, leading to future avoidance.

#### 3.4.3. Social and Demographic Contexts: The Digital Divide

Adoption behavior is also deeply embedded in the social and demographic context of the taxpayer. Hermanto et al. (2022) and Abu-Silake et al. (2024) identified Social Influence (or Subjective Norms) as a key driver. In close-knit business communities or collectivist cultures, the decision to adopt e-invoicing or e-filing is often driven by peer pressure or the desire to conform to industry standards. If key suppliers or competitors adopt digital tools, a firm is likely to follow suit to maintain legitimacy.

However, this social driver is constrained by the Digital Divide. Dote-Pardo et al. (2025) provided a critical analysis of adoption patterns in Chile, revealing a sharp dichotomy based on age, education, and geography. Their study found that while adoption rates were high among young, urban, and educated taxpayers, they plummeted among the elderly and rural populations. This indicates that Digital Literacy is a fundamental determinant; without the requisite skills and infrastructure (internet connectivity), the "intention" to adopt is rendered irrelevant by the inability to do so. Ariyanto et al. (2024) reinforced this by identifying "technological understanding" as a significant barrier for MSMEs, suggesting that mandatory digitalization policies that do not account for these demographic disparities risk marginalizing vulnerable taxpayers.

#### 3.4.4. Economic and Regulatory Incentives: The Carrot and the Stick

Finally, adoption is driven by economic rationales and regulatory frameworks. The literature presents a dichotomy between "incentivized adoption" and "coerced adoption."

On the positive side, Skandalis and Skandali (2025) and Bellon et al. (2022) showed that firms adopt digital tools like FinTech and e-invoicing because they perceive tangible economic benefits, such as reduced compliance costs, faster VAT refunds, and better internal financial management. In this view, the "determinant" is the economic value proposition of the technology itself.

Conversely, Ofosu-Ampong (2024) provided a cautionary tale regarding Perceived Cost. In the case of Ghana's e-levy, the cost associated with digital transactions became a deterrent, pushing users away from mobile money and back to cash. This highlights that "cost" is a powerful determinant; if the digital route is perceived as more expensive (due to transaction fees or the need for expensive software) than the manual route, adoption will stagnate.

Additionally, Kotsogiannis et al. (2025) and Heinemann and Stiller (2025) noted that Perceived Audit Probability acts as a regulatory determinant. The knowledge that digital systems (like e-invoicing) create an immutable audit trail incentivizes adoption among risk-averse firms who wish to avoid penalties. In this context, the determinant is not the "love" of technology, but the fear of sanctions, effectively forcing adoption through a deterrence mechanism.

## Conclusion on Determinants

In summary, the key determinants of digital tax adoption are multifaceted. While Technological Readiness (Ease of Use, Usefulness) serves as the entry point, sustainable adoption is secured through Psychological Factors (Trust, Fairness) and Economic Incentives (Cost-Benefit). Crucially, these factors are moderated by Demographic Contexts (Digital Literacy, Location), implying that a "one-size-fits-all" approach to digital tax implementation is likely to fail. Successful adoption strategies must therefore pair robust, user-friendly technology with educational initiatives and trust-building measures to bridge the gap between system capabilities and user readiness.

### 3.5. Barriers and Challenges Hindering the Effectiveness of Tax Digitalization

While the preceding sections have established the positive potential of tax digitalization, the synthesis of the selected literature reveals that its implementation is fraught with significant structural and behavioral impediments. Addressing the third research question (*"What are the primary barriers and challenges identified in the literature that hinder the effectiveness of tax digitalization?"*), this study identifies a complex landscape of obstacles that often dilutes the theoretical benefits of digital tax systems. These barriers are not merely technical glitches but represent deep-seated systemic issues ranging from the digital divide and human capital deficits to institutional rigidity and trust deficits. The following subsections critically analyze these barriers across four thematic dimensions.

#### 3.5.1. The Infrastructural Deficit and the Digital Divide

The most fundamental barrier identified across the literature, particularly in studies focused on developing economies, is the inadequacy of technological infrastructure. Digitalization presumes a baseline of connectivity and hardware availability that simply does not exist for a large segment of the global taxpayer base.

Aren (2024) and Rokhman et al. (2023) provide sobering evidence from Africa and Indonesia, respectively, highlighting that the "Digital Divide" is not a cliché but a binding constraint. In many rural and peri-urban areas, unreliable electricity supply and poor internet connectivity render sophisticated e-tax portals useless. When taxpayers cannot access the system due to physical infrastructure gaps, non-compliance becomes involuntary rather than intentional.

Furthermore, Dote-Pardo et al. (2025) offered a granular analysis of this divide in Chile, revealing a sharp stratification based on geography and age. Their findings indicate that while digital adoption is high in metropolitan centers, it drops precipitously in rural regions and among the elderly population. This creates a "two-tier" tax system where the benefits of simplified digital filing are accrued only by the urban elite, while the marginalized are left grappling with inaccessible technologies.

Even when internet access is available, the stability of the tax administration's own infrastructure remains a critical bottleneck. Do et al. (2022) reported that in Vietnam, taxpayers frequently face "data transmission congestion," particularly during peak reporting periods when thousands of users attempt to file simultaneously. These system crashes and server timeouts do not merely cause frustration; they erode the perceived reliability of the tax authority, leading taxpayers to distrust the digital channel and revert to manual filing to ensure their submission is recorded.

### 3.5.2. Human Capital Constraints and Capability Traps

Beyond the physical hardware, the literature identifies a severe "Human Capital Deficit" as a barrier to effective digitalization. Adopting a digital tax system requires a specific set of skills—digital literacy, data management, and basic cybersecurity awareness—that many taxpayers, particularly in the Micro, Small, and Medium Enterprise (SME) sector, lack.

Hung et al. (2024) and Ariyanto et al. (2024) emphasize that for many MSMEs in Vietnam and Indonesia, the complexity of digital tax interfaces exceeds their technical capabilities. This phenomenon, often described as a "capability trap," forces small business owners to hire external consultants or intermediaries to navigate the digital system, thereby increasing their compliance costs rather than reducing them. This contradicts the core promise of digitalization as a cost-saving mechanism.

Moreover, Hermanto et al. (2022) and Inegbedion (2025) highlight the psychological dimension of this barrier: "Resistance to Change." Taxpayers who have spent decades utilizing manual bookkeeping and physical filing methods exhibit a strong status quo bias. The transition to a digital system is often perceived as a disruption to established routines rather than an improvement. This resistance is compounded when the digital system is not intuitive; Salawu et al. (2025) noted that a lack of awareness regarding system features and inadequate socialization by the tax authority leaves taxpayers feeling unsupported, fueling resistance.

### 3.5.3. Trust, Privacy, and the Security Paradox

As tax administrations move towards data-driven enforcement (e.g., integrating bank data or using AI), a new category of barrier has emerged: the "Trust and Security Deficit." While increased data visibility improves fraud detection (as noted in RQ1), it simultaneously triggers taxpayer anxiety regarding privacy and data misuse.

Dang et al. (2024) discussed this in the context of Open Banking and tax evasion. While integrating banking data with tax authorities significantly reduces evasion, it raises profound privacy concerns. Taxpayers and financial institutions alike are wary of the potential for data breaches or the unauthorized surveillance of financial behavior. If taxpayers perceive the digital tax system as a "Big Brother" surveillance tool rather than a service platform, they may engage in defensive behaviors, such as moving assets to cash or cryptocurrencies to avoid the digital footprint.

Gupta et al. (2015) and Utama et al. (2022) identified "Perceived Risk" as a significant impediment. This includes not only the fear of data theft (cybersecurity risk) but also operational risk—the fear that a system error might result in an incorrect tax assessment or penalty. In the absence of robust legal guarantees regarding data protection, this perceived risk significantly dampens the willingness to adopt voluntary digital compliance tools.

### 3.5.4. Institutional Rigidity and Policy Misalignment

Finally, the literature suggests that the effectiveness of digitalization is often hindered by the tax administration itself—specifically, through ill-conceived policies or institutional

rigidity. Technology is often implemented faster than the regulatory framework can adapt, leading to legal uncertainty.

Ofosu-Ampong (2024) provided a critical case study of policy misalignment in Ghana. The introduction of the "e-levy" (a tax on electronic transactions) was intended to broaden the tax base but resulted in a "backlash effect." Because the cost of using the digital system (transaction fees plus tax) was perceived as too high, users reverted to cash transactions. This demonstrates a critical barrier: High Transaction Costs. If the cost of being "digital" is higher than being "analog," taxpayers will rationally choose the latter, undermining the government's digitalization agenda.

Additionally, Harkushenko (2022) and Monrroy et al. (2023) pointed out the barrier of Regulatory Complexity. In the case of new digital business models (e.g., influencers, gig economy workers), traditional tax laws are often ambiguous. When digital systems attempt to enforce these outdated rules on new business models without simplification, it creates confusion. Furthermore, Harkushenko (2022) noted the prohibitive Implementation Costs of advanced technologies like Blockchain. For many developing nations, the initial capital expenditure required to build secure, interoperable digital tax ecosystems is a significant fiscal barrier, often leading to half-measures or poorly maintained systems.

In conclusion, the barriers to tax digitalization are multidimensional. While infrastructure gaps and skill deficits represent immediate hurdles in developing economies, trust deficits and policy misalignments pose significant challenges globally. The literature suggests that digitalization is not a "plug-and-play" solution; without addressing the digital divide, ensuring data privacy, and aligning tax policies with user incentives, the deployment of technology may fail to enhance compliance and, in worst-case scenarios, may drive taxpayers back into the shadow economy.

## Conclusion

This section presents the research conclusion, implications, limitations, and advice for future research. The implications are practical advice from result research. Research limitations include all aspects that can be considered by researchers to refine future research, while the research advice is a future direction for the next research based on the limitations highlighted.

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