

Research Article

Rethinking Value Added Tax in the Digital Economy: Systematic Literature Review of Design, Evaluation, and Administrative Process for Digital Supply Transaction

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Abstract

In the digital economy, this systematic literature review examines the design, evaluation, and administration of VAT policies. Following PRISMA and the SPIDER model, we searched Scopus using targeted keywords, identifying 114 records. After applying predefined inclusion criteria and open-access filters, 106 records were excluded, leaving eight high-quality articles. The articles were independently assessed for risk of bias using the JBI Critical Appraisal Tool, then subjected to standardized data extraction and thematic synthesis. The Literature has evolved from primarily legal discussions toward a broader, integrated perspective. Five policy approaches emerge: extending tax jurisdiction; facilitating collection through OSS/IOSS; appointing digital platforms as tax collectors; digitizing tax administration; and strengthening international cooperation. VAT outcomes depend not only on policy design, but also on administrative capacity, digital infrastructure, and consumer behavior. These measures can increase revenue and transparency, yet challenges remain, including legal uncertainty, fraud risks, limited data, and weak international coordination. Research also remains concentrated in developed countries. This study proposes conceptualizing VAT as a digital ecosystem involving multiple actors, offering policymakers a framework for developing more effective, adaptive, and inclusive tax regimes across increasingly borderless, rapidly evolving, and diverse digital markets worldwide today.

Keywords: destination-based VAT, cross-border digital services, systematic review

JEL Classification: H25, H26, H21

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1. Introduction

The internet, which was first established as a communication tool for academics, has rapidly evolved into an important medium for international trade (Lamensch, 2015; Yu et al., 2024). This has enabled the commercialization of traditional goods and services without physical contact between trading parties.

Hence, presently many new products are offered online through e-marketplaces, without geographical and time limits. The internet also enables instant delivery, eliminating waiting time in transportation and supply chain operations, and allows firms to operate 24/7 (Sina Mohri et al., 2024; Tran et al., 2026).

In recent years, the digital economy has grown rapidly, driven largely by advances in big data and artificial intelligence (AI) (Căpuşneanu et al., 2025; Ma et al., 2025). This development has significantly influenced the transformation of several sectors, including trade and e-commerce. Increasing globalization, integration into the global market, and growth in cross-border transactions have created complex international tax challenges that require urgent attention (Alkharafi & Alsabah, 2025; Phoomsavarth, 2023).

The definition of “digital supplies” in the context of value-added tax (VAT) demands a comprehensive assessment of its specific features (Okolo et al., 2025; Senyk, 2026). Digital goods are not physical goods; they are intangible and easily copied and transferred across borders. These products cover a broad spectrum of services and goods, such as software downloads, streaming services, online advertising, and e-books. Original VAT principles (e.g., defining the place of supply and the right to input tax credit) were based on the physical presence of goods and services (Bhalla et al., 2022; Hassan, 2025). The geographic borders were unambiguous. However, applying these ideas to a digital context poses major obstacles (Rendahl, 2009).

Cross-border trade in services and intangible items (for example, digital downloads) poses issues to VAT systems, particularly when these products are acquired by individual consumers from foreign merchants (Xu, 2022). The digital economy further exacerbates this situation, as it enables customers to shop online and businesses to sell across countries without a physical presence. As a result, VAT is sometimes not paid or is paid in very small amounts. This severely affects the government VAT revenue and fosters unfair competition between domestic and foreign sellers. A major VAT issue in the digital economy is the rapid expansion of services and intangible items supplied to customers, where VAT is often not fully collected due to enforcement obstacles (Andreana & Inayati, 2022; Mpofu, 2022).

At the global level, one of the main tax concerns in the digital economy is determining which country has the authority to tax online transactions (Nalewajk, 2016). This raises the question of whether digital transactions should be taxed where the products or services are consumed or where the supplier is based.

Several nations have introduced particular rules to tax digital supply, such as the models put in place in the European Union (EU) and the United States (US), while others are currently grappling with the adaptation of their current VAT systems to the digital sphere (Aulia & Hambali, 2022; Georgieva & Krasteva-Hristova, 2026). Differences in digital economic activity, tax infrastructure and political will to reform shape the countries’ approach. For example, some nations focus on simplifying VAT registration and compliance methods, while others focus on increasing data gathering and information exchange to promote tax compliance (Panchenko et al., 2020). These diverse approaches underscore the urgent need for greater international collaboration and harmonization of VAT regulations to reduce discrepancies and encourage fair competition in the global digital economy.

Policy evaluations, normative analysis and comparative regulatory studies have been the main focus of study in this field. However, empirical research on the influence of digital VAT rules on compliance, revenue and compliance costs is scarce, notably across nations and diverse digital service industries. We need a systematic synthesis to discover effective patterns of policy and support a framework that focuses on outcomes and the factors that affect the incentives and information accessible to market players and regulators.

The major aim of this study is to assess the design and evaluation of VAT policies and administrative processes for digital supply transactions in terms of their efficacy, compliance, revenue performance and implementation issues. With this objective, the primary novelty lies in its shift away from standard qualitative tax literature toward a systematic, empirical evaluation of digital VAT policies. While existing research in cross-border digital taxation has largely relied on policy evaluations, normative frameworks, and comparative legal analyses, this study addresses a critical empirical gap: how digital VAT rules directly affect compliance rates, administrative costs, and real revenue performance across diverse nations and service sectors. By framing the problem through market incentives and regulator information access, the introduction establishes a novel, outcome-oriented empirical framework designed to harmonize global tax enforcement while mitigating revenue loss and market distortion caused by the boundaryless digital economy.

2. Literature Review

The ongoing digitalization of the global economy has fundamentally challenged traditional indirect tax frameworks, exposing structural vulnerabilities in consumption tax regimes worldwide (Elavarasi & Thayyib, 2026a; Lankoski & Smith, 2025). Under conventional tax principles, nexus was primarily determined by physical presence, creating significant compliance loopholes for cross-border digital services and intangible goods. In response, international tax guidance spearheaded by the OECD's International VAT/GST Guidelines has established the destination principle as the benchmark for cross-border indirect taxation (Schoeman et al., 2022). By asserting that VAT should be levied where consumption actually occurs rather than where the supplier is resident, the destination principle aims to preserve tax neutrality and prevent double taxation or unintended non-taxation (Badenhorst et al., 2026). However, enforcing destination-based taxation across borderless digital supply chains presents major administrative hurdles, particularly when tracking decentralized, micro-level Business-to-Consumer (B2C) transactions (Volz et al., 2025; Wang et al., 2021).

To operationalize the destination principle within high-volume e-commerce and digital service environments, fiscal authorities have increasingly adopted platform liability frameworks. Grounded in deeming provisions such as the full liability models enacted across the European Union and adopted in various emerging market regulations these legal regimes shift the burden of VAT registration, collection, and remittance from individual underlying sellers to multi-sided digital platforms (Georgieva & Krasteva-Hristova, 2026; Tofan & Bostan, 2022). By designating marketplace operators as "deemed suppliers" or authorized VAT collection agents, tax administrations concentrate enforcement on a smaller number of highly visible, technologically capable intermediaries (Mascagni et al., 2021; Milosavljevic et al., 2024). This administrative shift drastically reduces transaction costs for tax authorities. It mitigates the tax risks posed by fragmented, small-scale digital vendors who might otherwise operate outside formal tax monitoring mechanisms.

Despite structural shifts toward platform-centric collection, the "VAT gap" the aggregate disparity between expected theoretical revenue and actual VAT collected remains a persistent fiscal concern exacerbated by the digital economy. The digital VAT gap stems from informal e-commerce activities, aggressive tax planning, cross-border jurisdiction arbitrage, and administrative friction in tracking digital service delivery (Elavarasi & Thayyib, 2026b; Mpofu & Moloi, 2022; Przekota et al., 2025). Evaluating the magnitude and structural drivers of this gap requires robust macroeconomic and top-down estimation frameworks. High-level tax gap analyses highlight that while digitalizing tax bases expands the potential revenue pool, the systemic complexity of tracking intangible digital flows creates new forms of non-compliance and shadow economy leakage that traditional audit mechanisms struggle to capture (Hesami et al., 2024).

Bridging the digital VAT gap hinges on the evolution of digital tax administration, often framed within the Tax Administration 3.0 paradigm (Georgieva & Krasteva-Hristova, 2026; Kanama, 2025). Moving beyond basic electronic filing, modern tax authorities are embedding tax compliance processes directly into taxpayers' operational systems through real-time data

integration, automated reporting interfaces, machine-learning-driven risk profiling, and centralized electronic invoicing networks. In the platform economy, digital tax administration enables continuous, data-driven oversight of platform transactions. By leveraging automated algorithmic cross-matching between platform transaction logs and remitted indirect taxes, revenue bodies can rapidly detect anomalies, reduce compliance friction for compliant businesses, and dramatically lower the administrative cost of enforcement.

Ultimately, the structural success of destination-based VAT systems and platform liability models relies on understanding tax compliance behavior within digital ecosystems (Elavarasi & Thayyib, 2026b). Classic economic deterrence theory posits that compliance depends primarily on audit probability and penalty severity. However, modern fiscal sociology and behavioral tax research suggest that compliance among digital actors is equally dictated by administrative burden, perceived procedural fairness, and institutional trust. For foreign digital service providers and platform operators, overly complex registration requirements or ambiguous nexus rules degrade voluntary compliance, incentivizing systemic non-compliance. Consequently, recent literature emphasizes that maximizing digital tax yield requires a dual approach: pairing robust algorithmic enforcement and third-party platform liability with streamlined, user-centric digital compliance procedures that lower behavioral barriers to voluntary tax adherence.

3. Data and Method

This Systematic Review was reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Guidelines (Page et al., 2021). The search query was formulated using the SPIDER Model, because it is more flexible for studies in policy, economics, and regulation. It suits qualitative, mixed-methods, and tax policy studies and is often used in systematic literature reviews (SLR) in public policy and taxation. (Table 1.)

While the reliance on Scopus and open-access filtering may initially appear restrictive, these parameters were established alongside a rigorous multi-stage execution protocol to ensure a transparent, reproducible, and high-quality evidence base. Scopus provided comprehensive coverage of top-tier multidisciplinary literature, while open-access criteria guaranteed full-text verifiability for synthesis. To address potential selection and analysis bias, the exclusion of 106 articles followed strict, pre-defined SPIDER eligibility criteria, dual independent reviewer screening ensured high inter-rater agreement, and data extraction relied on pre-tested standardized codebooks. Finally, JBI appraisal scores directly informed each study's weight, feeding into a structured thematic synthesis that systematically integrated study quality with empirical findings.

Table 1. Search Query using the SPIDER Model

Component	Definition	Topic Context
S - Sample	Subjects being studied	Taxpayers, digital platforms, tax authorities, digital supply actors
PI – Phenomenon of Interest	Main phenomenon	Imposition and administration of VAT on digital supply
D - Design	Study design	Empirical, policy, comparative studies, economic models
E - Evaluation	Outcomes assessed	Effectiveness, compliance, tax revenue, implementation challenges
R – Research type	Type of research	Qualitative, quantitative, mixed-method

Source: has been reprocessed

Between February and March 2026, a comprehensive and systematic bibliographic search without time limits was conducted in the Scopus database using the following search query:

TITLE-ABS-KEY (("value added tax" OR VAT OR "goods and services tax" OR GST OR "consumption tax") AND ("digital supply" OR "digital service*" OR "electronic service*" OR "digital econom*" OR "e-commerce" OR ecommerce OR "online transaction*" OR "digital transaction*" OR "cross-border digital") AND (polic* OR regulat* OR framework* OR administr* OR "compliance system*" OR "collection mechanis*" OR enforcement OR implement*) AND (effectiv* OR efficac* OR complianc* OR revenue OR performance OR impact OR challenge* OR barrier* OR issue* OR gap* OR problem)) resulting in a total of 114 studies.

The inclusion criteria were consumption tax topics, a digital context, a focus on policy/administration with an evaluation element, an academic document type, and English language. Exclusion criteria included studies not related to consumption tax, not in a digital context, purely technology-focused, not about policy/administration, lacking evaluation or analytical substance, and not scientific articles.

The risk of bias and methodological quality of the included articles were first assessed by two reviewers (GG and TM). To evaluate the quality and relevance of the selected studies, we used the JBI Critical Appraisal Tool (Stone et al., 2022), which assesses different research designs. Based on a previous study, we considered studies with a JBI score above 70% high quality, those with scores between 50% and 70% medium quality, and those with scores below 50% low quality.

Data from the selected articles were extracted and summarized in tables that included the paper number, last author's surname (year), research objective, study design, research location, population/subjects, intervention, outcomes/dependent variables, main findings, and study limitations. We grouped outcomes by domain and classified effects as positive (+), negative (-), or neutral (=) based on the direction of most results.

4. Results

Study Selection

A database search identified 114 articles in Scopus. After applying filters for subject areas (economics, econometrics, finance, business, management, and accounting), document type (article), language (English), keywords (taxation, digital economy, e-commerce), and open access, we included 8 articles and excluded 106. The abstracts were then reviewed, and no articles were excluded at this stage, leaving 8 articles for full analysis. All 8 articles were successfully retrieved; therefore, none were excluded. Finally, 8 articles were eligible for inclusion in the review (Figure 1).

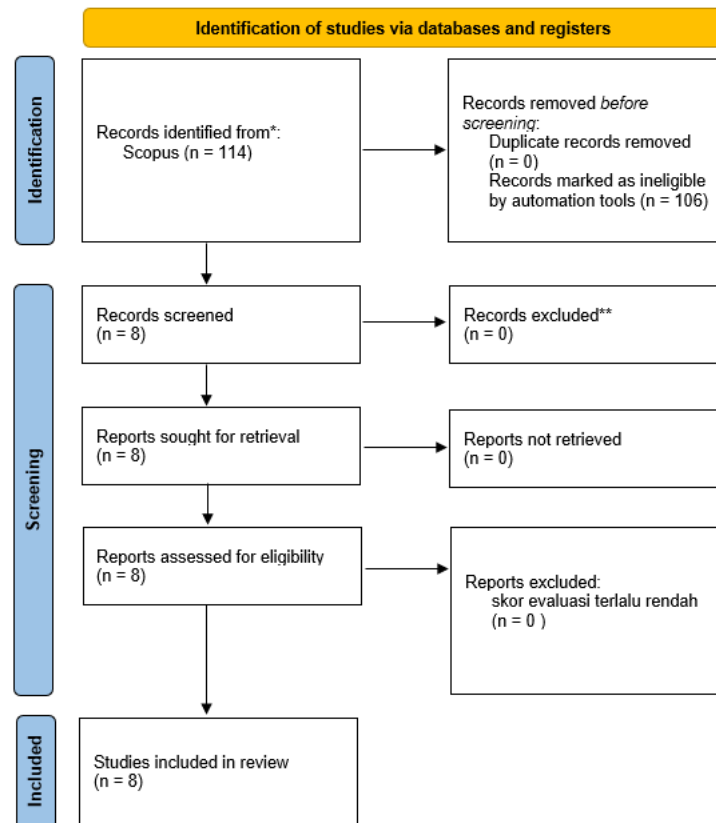


Figure 1. PRISMA Flow-Chart of study selection

General Characteristics of the Studies Included

The literature review included a total of eight primary studies between 2020 and 2023 (see Tabel 2), including Canada (Macnaughton & Sandler, 2020) and (Shatalow, 2020), Bulgaria (EU) (Antov, 2023), Hungary (EU) (Bakai et al., 2022), EAEU (Krasnov et al., 2020), International (Russia) (Gurinovich & Shakhmametiev, 2023), United States (Dean et al., 2023), and Eastern Europe (Bulgaria, Poland, Romania, Slovakia, Hungary, Czech Republic) (Abramova et al., 2021).

Table 2. Summary of Study Characteristics

Policy Type	Jurisdiction	Primary Methods	Key Outcomes & Findings	Strength of Evidence (Bias / Evidence Level)
Digital VAT & Non-Resident Obligations	Canada	Policy Analysis, Legal Analysis	Highlights legal uncertainty and emphasizes the necessity for legislative reform regarding digital tax obligations for non-resident digital companies (Macnaughton & Sandler, 2020; Shatalow, 2020).	Medium to High Bias (Evidence Level: Neutral / =)
EU VAT Reforms & Digital Systems (IOSS/eVAM)	Bulgaria, Hungary (EU)	Case Study, Policy Evaluation	Increased administrative efficiency and tax revenue, but highlighted potential short-term study constraints and elevated risks of fraud	Medium Bias (Evidence Level: Negative / -)

			(Antov, 2023; Bakai et al., 2022).	
Regional Integration & Harmonization	EAEU (Eurasian Economic Union)	Mixed-Methods	Evaluated tax harmonization; revealed system fragmentation and integration challenges; findings were broader and not exclusively focused on digital tax (Krasnov et al., 2020).	Medium Bias (Evidence Level: Negative / -)
OECD International Standards	International (Russia context)	Legal / Policy Analysis	Shows a lack of global consensus on implementing standardized OECD principles for digital tax system effectiveness (Gurinovich & Shakhmametiev, 2023).	Medium Bias (Evidence Level: Neutral / =)
E-Commerce Tax Base Expansion	United States	Empirical Quantitative	Confirmed that expanded e-commerce consumption during the pandemic directly drove increased tax revenue (Dean et al., 2023).	Medium Bias (Evidence Level: Positive / +)
Digital Administration Ecosystems & VAT Base Forecasting	Eastern Europe (Bulgaria, Poland, Romania, Slovakia, Hungary, Czech Republic)	Quantitative (Econometric Time Series Modeling) + Policy Analysis	Demonstrates a strong link between e-commerce growth and higher VAT revenue; removing thresholds and integrating digital systems (OSS/IOSS, platforms, banks) boosts transparency and reduces fraud (Abramova et al., 2021).	High Bias (Evidence Level: Neutral / =)

5. Discussion

Research Focus Trends

The literature on VAT for digital supply has revealed an increasingly complex and multi-dimensional research focus. The study of the eight articles evaluated shows an evident trend from a normative legal approach to a more systemic and digital ecosystem approach.

In the early phases, the research was dominated by legal and conceptual assessments, primarily involving tax liabilities of non-resident digital enterprises. Studies such as (Abramova et al., 2021; Macnaughton & Sandler, 2020; Shatalow, 2020) focused on legal uncertainty, especially whether digital organizations without a physical presence can be regarded as having a tax nexus (carrying on business). The work at this stage was directed at the interpretation of current tax rules, the need for legislative reform and the necessity to provide a level-playing field between domestic and foreign enterprises.

With the development of the digital economy, the research focus has shifted to evaluating policy and its administrative implementation, particularly regarding VAT reform in the European Union. For instance, studies by Antov (2023) and Bakai et al. (2022) examined the usefulness of mechanisms such as the Import One-Stop Shop (IOSS) and the abolition of import thresholds. At this point, the literature focused on efficiency in tax collection, higher government revenue and operational difficulties, including fraud and administrative complexity.

The literature then shifted toward cross-country analysis and policy harmonization, as shown by Krasnov et al. (2020) and Gurinovich and Shakhmametiev (2023). The studies stress the need for international coordination and the use of OECD principles such as the destination principle and BEPS, as well as fragmentation in the world tax system.

Most recently, attention has broadened beyond policy and administration to economic behavior and the composition of the tax base. For example, Dean et al. (2023) found that changes in consumer behavior and the rise of e-commerce had a major impact on VAT effectiveness. This indicates that the tax base is a key determinant of revenue stability and that VAT strategies should account for demand dynamics.

Finally, recent literature has shifted toward a holistic approach, with Abramova et al. (2021) proposing a digital VAT administration ecosystem. This approach underlines that VAT success depends not only on regulation, but also on the interaction of tax authorities, digital platforms, payment systems, customers and data infrastructure.

Overall, the literature has shifted from a piecemeal focus (on legal and policy elements) to a more integrative ecosystem-based approach.

Methodological Landscape

The eight studies evaluated and analyzed together reveal that the literature on VAT in digital supply is predominantly non-experimental, uses a variety of methods, and points to the complexity of taxes in the digital economy. (i) Legal/policy analysis, (ii) Empirical descriptive research, (iii) Quantitative modeling, and (iv) Mixed-method approaches are the four primary methodological families.

The first group is the most dominant in early literature: legal and policy analysis. Works by Macnaughton and Sandler (2020), Shatalow (2020) and Gurinovich and Shakhmametiev (2023) are based on normative analysis of regulations, court decisions and international tax principles. This technique helps identify regulatory gaps, evaluate legal concepts such as the digital nexus, and develop policy recommendations. However, it is not empirically validated, and thus findings are still conceptual and context-specific.

The second type is composed of empirical descriptive and case studies, which are widely utilized in the evaluation of the implementation of digital VAT policy, particularly in the European Union. Using administrative data and policy observations, studies like Antov (2023) and Bakai et al. (2022) assessed system effectiveness (e.g., IOSS), variations in tax income, and operational issues. This approach provides practice-based information, but it is generally limited to specific places and short time periods.

The third group involves quantitative empirical studies. This group is less numerous but provides substantial contributions through more objective measurement of policy consequences. Econometric approaches have been utilized in certain studies to assess the relationship between changes in the tax base and consumer behavior and tax revenue (Dean et al., 2023). This strategy contributes to the literature by providing causal and quantitative evidence but is typically constrained by data availability and contextualized to specific country settings.

The fourth category is a mixed-method and quantitative modeling approach, as demonstrated in Krasnov et al. (2020) and Abramova et al. (2021). Research in this area has merged policy document analysis, statistical data and econometric models (e.g., time series forecasts). This facilitates a more holistic examination and improved integration of theory and practice. However, it still suffers from restrictions regarding model assumptions and data quality and details.

In general, the digital VAT literature is characterized by conceptual work and case studies, with little quantitative empirical evidence that can be generalized.

Geographic Distribution

The analysis of the eight studies reveals that the literature on VAT in digital supply is geographically uneven and strongly dominated by industrialized countries, particularly Europe. Overall, the studies evaluated can be classified into three primary geographical contexts: (i) the

European Union, (ii) North America and (iii) the Eurasian region, each with different policy characteristics.

The first group, and the main focus of the literature, is the European Union. Antov (2023), Bakai et al. (2022) and Abramova et al. (2021) studied the implementation of relatively comprehensive e-commerce VAT reforms such as the implementation of One-Stop Shop (OSS) and Import One-Stop Shop (IOSS), the removal of the €22 import threshold and the use of the destination-based taxation principle. In the EU environment, there is a high degree of policy integration, cross-country cooperation and reasonably modern administrative structures. However, these studies also reveal that even with an integrated legislative framework, there are still major difficulties in execution, such as fraud across borders, restricted data exchange and administrative constraints.

The second group is North America, with research by Macnaughton and Sandler (2020), Shatalow (2020) and Dean et al. (2023). The region is not regionally connected like the EU, and the strategy is based on national jurisdictions. The fundamental objective in this context is to assess the tax nexus in the digital economy and the impact of policies on the tax base and revenue. For example, legal changes such as the Wayfair judgment in the US demonstrate how extending taxing power over digital companies can considerably boost tax collection from e-commerce.

The third group includes the Eurasian region (EAEU and Russia), drawing on Krasnov et al. (2020) and Gurinovich and Shakhmametiev (2023). In this sense, studies emphasize the search for harmonized tax policies and the application of international norms (such as OECD standards). However, unlike the EU, the region suffers from fragmented tax systems, varying tax rates and policies between countries and insufficient institutional coordination.

The existing literature is strongly oriented towards rich nations, especially the European Union, and lacks an adequate representation of the issues and dynamics of digital VAT implementation in developing countries.

Actors in VAT Digital Ecosystem

The integration of these eight studies reveals that the implementation of VAT in digital supply involves several interrelated entities, creating a complex and interdependent system. The literature no longer views VAT collection as a straightforward interaction between tax officials and taxpayers, but as part of a digital ecosystem with diverse actors playing varied roles. The actors can be grouped into five broad categories: (i) tax authorities, (ii) digital enterprises, (iii) digital platforms, (iv) consumers and (v) intermediary systems (such as banking and payment systems).

The first group is tax authorities, which all studies identify as the key actors in establishing and executing VAT policies. They are involved in making regulations, running tax administration systems, and monitoring and enforcement. Nevertheless, as the research suggests, their role is shifting from enforcer to coordinator in a complex digital system, particularly in cross-border data interchange and system integration (e.g., in the EU).

The second group consists of digital enterprises (non-resident vendors and e-commerce sellers) that are the main focus of digital tax challenges. Early investigations highlight the difficulties of measuring tax liabilities without a physical presence and recognizing the tax link. Further studies show that they are major targets of digital VAT policy and that their compliance burden is increasing.

The third group, which has gained increased prominence in recent literature, is digital platforms (such as marketplaces and e-commerce intermediaries). Research such as Abramova et al. (2021) has pointed out that digital platforms now operate as tax collectors or withholding agents, sources of transaction data, and links between vendors, consumers and tax authorities. This indicates a major policy design shift: from a taxpayer-based approach to a platform-based taxing model.

The fourth group was the customers (end-users). Although not always the main subject, they play a significant role in establishing the place of consumption (destination principle) and shaping the tax base by influencing their consumption behavior. Research, including Dean et al. (2023), shows that changes in consumer behavior (such as the growth of e-commerce during the pandemic) significantly affect tax collection and the efficiency of the VAT system.

The fifth group consists of intermediary systems such as banks, payment gateways and digital systems (e.g., data platforms, e-tax systems). Studies like Abramova et al. (2021) indicated that these actors play a crucial role in enabling transactions, supplying data for tax compliance and promoting the integration of administrative systems.

Overall, the literature indicates a fundamental transition from a taxpayer-centric to an ecosystem-centric strategy in the administration of VAT, where digital platforms and data systems are at the core.

Policy Intervention Typology

The synthesis of the eight studies shows that VAT policy in the digital supply chain is not a single policy but comprises several intervention types. These kinds indicate how governments are responding to digitization by employing a combination of regulatory and administrative instruments. The research identifies five broad groups of policy interventions: (i) broadening the tax base; (ii) simplifying collection procedures; (iii) moving the responsibility to platforms; (iv) digitalizing tax administration; and (v) international coordination.

The first is to extend tax jurisdictions to cover non-resident digital firms. Studies by Macnaughton and Sandler (2020) and Shatalow (2020) reveal that the old method focused on physical presence is no longer appropriate in the digital economy. Accordingly, laws have been created to recognize significant economic presence, the destination principle and registration for non-resident vendors. The aim is to level the playing field and prevent erosion of the tax base.

The second category concerns the creation of simplified collection methods, such as the One-Stop Shop (OSS) and Import One-Stop Shop (IOSS), as discussed by Antov (2023) and Bakai et al. (2022). These technologies ensure centralized tax reporting, reduce the administrative load for taxpayers and increase the efficiency of collection. The literature, however, also points to concerns such as system misuse and fraud (e.g., undervaluation).

The third category is one of the most important policy innovations: transferring tax collection responsibility from sellers to digital platforms, as noted by Abramova et al. (2021) and Bakai et al. (2022). In this paradigm, platforms act as tax collectors; they have transaction data and become major control points. The benefits are greater compliance and a smaller shadow economy. Such concerns include increased compliance obligations for platforms and reliance on platform data.

The fourth category is the transformation of tax administration systems through digitalization, including e-tax systems (e.g., eVÁM), cross-agency data integration, and electronic reporting systems, as discussed in Bakai et al. (2022), Abramova et al. (2021), and Krasnov et al. (2020). Through digitalization, we can monitor in real time, boost transparency and save administrative costs. Some problems, such as infrastructure readiness, data quality and system compatibility, are faced in deployment.

The fifth category is international policy harmonization, as reflected in the EU VAT framework and OECD principles (such as BEPS and the destination principle) (Gurinovich & Shakhmametiev, 2023; Krasnov et al., 2020). The major aims are to limit tax arbitrage, to improve the coherence of global policy and to facilitate cross-border transactions. However, the literature emphasizes that no broad worldwide consensus still exists. This leads to fragmented tax systems and the danger of double taxation.

The literature generally suggests that VAT policy in the digital economy is not built on a single intervention, but on a set of complementary policy tools such as extended tax jurisdiction, simplified collection systems, platform-based taxation, digital administration and international coordination.

Evaluation Dimensions

Based on a synthesis of multiple studies in the literature, eliminating the VAT gap in the digital economy requires a comprehensive and flexible policy approach suited to the features of digital transactions, which are cross-border, intangible and platform-based. The findings indicate that traditional regulatory frameworks are no longer adequate to address the complexities of the digital economy. Policy reform is therefore needed to incorporate the concept of significant economic presence and broaden tax jurisdiction to non-resident digital enterprises.

Moreover, the literature repeatedly emphasizes the need to optimize digital platforms' role as intermediaries in tax collection. The platform liability rule, which requires platforms to collect or withhold taxes, has proven effective in improving administrative efficiency and expanding tax coverage, particularly in marketplace and app ecosystems. This would also help curb informal economic activities in the digital sector that tax authorities find hard to monitor.

Moreover, digitalization of tax administration is important to improve tax monitoring and compliance. The introduction of tools such as e-invoicing, real-time reporting, big data and artificial intelligence helps tax authorities to move away from an ex post audit approach towards a more proactive and risk-based monitoring strategy. Consequently, the VAT system can more rapidly and precisely identify potential problems such as under-reporting and fraud.

International cooperation is crucial to reducing the VAT gap in the global digital economy. As cross-border transactions are growing, there is a need for policy harmonization and information exchange across countries. Better coordination between tax authorities and international standards can help prevent tax avoidance schemes that exploit disparities between national laws.

However, the complexity of tax systems is acknowledged as a factor that affects compliance, particularly for small internet enterprises and non-resident sellers. Thus, to minimize compliance costs and promote voluntary compliance, administrative procedures should be simplified via systems such as one-stop registration and simplified VAT regimes.

Finally, taxpayer behavior also strongly influences compliance levels. The failure to grasp tax obligations in the digital economy indicates the need for increased education and awareness through more inclusive and collaborative ways. "This can be done with educational campaigns, clear and simple guidelines and working with digital platforms to reach more businesses.

In conclusion, the results suggest that a single policy instrument is not sufficient to fill the VAT deficit in the digital economy. It requires an integrated approach of regulatory reform, enhanced administrative capacity, use of technology, international cooperation and behavioral approaches to taxpayers.

Cross-Study Empirical Findings

The literature on VAT in the digital economy has developed substantially in recent years, but the synthesis highlights that there are still numerous critical research gaps requiring future exploration. These gaps are not just related to factual and methodological concerns, but also to behavioral, institutional and technological challenges that have not been adequately addressed in earlier studies.

First, empirical evidence on the implementation and effectiveness of VAT policies in developing-country settings remains limited. Most of the known studies are performed in developed countries, mainly in Europe and OECD countries, and so the findings cannot be easily generalized. In truth,

tax systems, administrative capabilities and the level of digital economic development in underdeveloped nations are very diverse. Thus, empirical research in developing nations like Indonesia is vital to provide more relevant and contextual understandings.

Second, the methods utilized to measure the VAT gap still rely heavily on traditional macro-level (top-down) approaches. These approaches struggle to reflect the complexity of digital transactions, such as cross-border and platform-based activities. This highlights the need for more adaptable approaches, such as using micro-level data from digital platforms and big data to provide more accurate estimates.

Third, behavioral features of taxpayers in the digital economy have received less consideration. Most research focuses on regulation and administrative systems, but issues such as tax morale, trust in tax authorities and perceptions of fairness have not been fully investigated. These considerations are crucial because they affect compliance, especially in a digital world that gives economic actors a great degree of flexibility.

Fourth, although the critical significance of digital platforms in collecting VAT is acknowledged, studies on optimal mechanisms and long-run effects of platform-based techniques are still scarce. However, there are issues like the compliance cost for platforms, potential market distortion and effects on innovation and competition that demand a more full investigation.

Fifth, long-term assessments of digital VAT policies remain limited. Most studies are cross-sectional and/or focus mainly on the early stage of policy implementation; thus, they cannot adequately capture long-term impacts on the VAT gap. Longitudinal research with panel data is needed to assess policy impacts over time.

Finally, the application of new technologies like artificial intelligence, blockchain and data analytics in VAT administration is currently debated primarily in concept, with scarce empirical evidence. This means research is needed that explicitly examines the effectiveness, efficiency and cost implications of these technologies in tax administration.

Overall, these gaps suggest that studies on VAT in the digital economy still offer broad opportunities for development in regional context, methodological approaches and the integration of diverse perspectives. Therefore, future study should focus on more contextual empirical investigations, innovation in measurement methodologies and exploration of the relationship of policy, technology and taxpayer behavior in determining the VAT gap.

Research Gap and Future Directions

The literature review shows that the VAT gap in the digital economy is a multi-dimensional phenomenon. The complex interaction of policy factors, tax administration capacity, characteristics of the digital economy and taxpayer behavior shapes it. Thus, it is vital to construct an integrative conceptual framework that systematically explains the link between variables and provides a robust basis for empirical testing.

In this context, the policy variable is the design and implementation of digital VAT legislation, including expanding the scope of tax jurisdiction, allocating tax-collection tasks to digital platforms, and streamlining administrative procedures. The research points out that regulations adapted to the nature of the digital economy are crucial to reducing the VAT gap, particularly for cross-border transactions and the intangible nature of digital products.

Moreover, tax administration capacity is a major determinant of program effectiveness in practice. The digitalization of tax processes, for example, e-invoicing, real-time reporting and data integration using analytical tools, helps to improve monitoring and enforcement more efficiently. Here, administrative ability is not just an independent variable, but also a mediator of policy and tax compliance.

On the other hand, the characteristics of the digital economy, such as the expansion of e-commerce, the prevalence of digital platforms, and the amount of cross-border transactions, may expand the VAT gap if they are not supported by adequate legislation and administrative systems. This underscores the two-fold influence of the digital economy – fuelling economic expansion but also posing issues for tax systems.

Taxpayer behavior is another major determinant of compliance, alongside structural factors. Factors such as tax morale, tax awareness and tax fairness judgments influence taxpayers' tax reporting and payment decisions. Hence, a behavioral approach is a vital supplement to the understanding of the VAT gap in the digital era.

The conceptual explanation of the interactions between variables is as follows: digital VAT policy and tax administration capability directly reduce the VAT gap. In contrast, digital economic features tend to widen it unless balanced with appropriate policies. Behavioral factors are determinants that can increase or decrease the effectiveness of policies and administration in enhancing tax compliance.

Thus, the VAT gap is the dependent variable in the conceptual framework suggested in this study, which is affected by the interaction of regulatory, administrative, economic and behavioral factors. This model not only synthesizes different views in the literature but also connects macro and micro techniques to analyze the VAT gap in the digital economy.

This methodology enables more in-depth empirical testing, using both quantitative and mixed-methods techniques, to identify the key factors affecting the VAT gap and evaluate the effectiveness of existing policies. Therefore, this model can serve as a strong analytical basis for developing adaptable, effective and sustainable tax policies in the digital economy.

6. Conclusion

Recent literature reveals that VAT policy for the digital economy has evolved from a narrow legal view to an ecosystem-oriented framework. Successfully managing cross-border digital transactions depends on expanding tax jurisdiction, deploying simplified collection mechanisms like OSS and IOSS, and leveraging platform-based collection. When paired with digitalized tax administration and international policy coordination, these integrated tools significantly boost tax compliance, revenue performance, and administrative transparency.

Theoretically, this study advances the literature by unifying fragmented insights into a holistic conceptual model for digital VAT management. It shifts the traditional paradigm which focuses solely on two-way interactions between tax authorities and taxpayers toward a broader ecosystem where digital platforms, payment processors, consumers, and data infrastructures co-determine success. This framework offers scholars and policymakers a robust analytical foundation for designing adaptive, sustainable VAT regimes.

Practically, the findings emphasize that policymakers must move beyond isolated tax rules and invest in digital infrastructure and cross-border cooperation. However, these insights carry limitations: the review synthesizes only eight core studies, heavily concentrated on advanced economies like the European Union. Furthermore, the existing literature relies primarily on short-term case studies and legal analyses rather than rigorous empirical or longitudinal data, limiting the direct application of these findings to low-income and developing nations.

To address these gaps, the future research agenda should prioritize empirical studies in developing countries to assess how institutional capacity and local digital infrastructure impact VAT reforms. Researchers should also utilize micro-level transaction data and cross-country comparisons to evaluate long-term policy effects. Finally, further investigation is needed into how emerging technologies such as artificial intelligence, blockchain, and advanced data analytics can streamline tax administration and bridge the digital VAT gap.

Managerial Implications

The primary implications of these findings center on public policy and tax administration rather than day-to-day managerial operations. To adapt effectively, tax authorities must modernize infrastructure and strengthen compliance frameworks. Key priorities include enforcing robust reporting standards for digital platforms, leveraging risk-based analytics to detect evasion, and establishing simplified registration pathways for non-resident businesses. Equally critical is implementing international cooperation and taxpayer support mechanisms. Tax administrations should prioritize seamless cross-border data exchange to track global transactions while simultaneously investing in targeted taxpayer education. Furthermore, authorities must establish clear safeguards to prevent fraud without subjecting compliant businesses to double taxation.

Recommendations

To increase policy impact, recommendations must transition from general advice to specific, measurable milestones. A practical approach is to establish a comprehensive digital Value-Added Tax (VAT) roadmap. This blueprint should prioritize clear platform liability rules, streamlined One-Stop-Shop (OSS) registration systems, and mandatory e-invoicing integration to establish robust collection infrastructure from the outset.

Building on this structural foundation, revenue authorities can deploy advanced monitoring mechanisms to safeguard compliance and evaluate success. Implementing automated payment-data matching alongside continuous VAT-gap estimates enables real-time tracking of tax leakages. To balance enforcement with efficiency, governments should conduct periodic compliance-cost surveys and launch targeted pilot programs in developing economies, such as Indonesia, to keep the roadmap scalable and adaptable.

Limitations and Avenue for Future Research

Several key methodological limitations constrain this review. Most notably, the synthesis is based on a small sample of eight studies retrieved exclusively from the Scopus database, restricted to English-language publications and open-access articles. Furthermore, the existing literature suffers from a geographic bias toward developed countries and relies on a narrow base of empirical evidence.

To address these gaps, future research should broaden search parameters and data sources. Scholars are encouraged to expand database coverage by incorporating Web of Science (WoS), SSRN, IBFD, OECD, and IMF repositories. Additionally, integrating primary data from national tax authorities will provide a more comprehensive, globally representative empirical foundation.

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