FISCALIZATION AS A DIGITAL GOVERNANCE TOOL IN TOURISM: EVIDENCE FROM CROATIA

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Abstract

Purpose – Tourism is one of the most important economic sectors in the Republic of Croatia, with a strong contribution to economic growth. At the same time, pronounced seasonality and a traditionally high share of cash transactions have made the sector particularly vulnerable to the grey economy. The aim of this study is to assess whether fiscalization has improved transparency and fiscal discipline in tourism sector. Special attention is given to the Fiscalization 2.0 reform and its implications for small-scale businesses.
Methodology – The study employs a historical analysis of Croatian fiscalization data, supported by sectoral and county-level indicators. Empirical evidence is presented through descriptive trends and comparative tables showing changes in reported turnover and transaction patterns across tourism-related activities.
Findings – The results indicate a clear increase in reported turnover and formalized transactions in tourism following fiscalization. The effects are more pronounced in coastal and urban destinations, while smaller and seasonal businesses in continental areas face higher relative compliance burdens. Despite these challenges, fiscalization has contributed to improved fiscal responsibility and increased trust between tourism providers and consumers.
Originality of the research – The paper provides empirically grounded insights into the interaction between digital tax instruments and tourism sector performance, offering evidence relevant for tourism-oriented economies considering similar reforms.
Keywords fiscalization, tourism sector, digital tax administration, Croatia

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INTRODUCTION

The digital transformation of business and public administration has become a central policy priority in advanced economies, particularly to improve transparency, efficiency, and regulatory oversight. In this context, fiscalization is a key instrument of modern tax administration, enabling real-time monitoring of transactions and strengthening control over economic activity. A substantial body of literature emphasizes the role of enforcement mechanisms and information systems in improving tax compliance. Digital tools such as fiscalization increase the likelihood of detection by reducing information asymmetry between taxpayers and authorities. Empirical studies confirm that electronic fiscal devices and real-time reporting systems can significantly improve tax compliance and increase reported revenues. For example, Naritomi (2019) shows that the introduction of electronic invoicing systems in developing countries led to measurable improvements in tax collection. Pomeranz (2015) finds that third-party reporting mechanisms are particularly effective in reducing tax evasion, as they limit opportunities for underreporting. Similarly, Hesami et al. (2024) highlight that e-invoicing and prefilling systems simplify and improve the tracking of taxation, leading to increased efficiency in tax practices globally. The global volume of e-invoicing transactions is anticipated to be over $550 billion and to save 50–80% of the total cost compared to traditional tax collection methods (Koch, 2019). In the European context, the adoption of digital tax tools has been associated with improvements in VAT compliance and reductions in the VAT gap (European Commission, 2023). These findings support the argument that fiscalization contributes to greater transparency and accountability in tax systems. Evidence from Italy's mandatory e-invoicing introduction in 2019 indicates a significant decline in cross-border VAT fraud, providing a compelling rationale for wider European adoption. (Heinemann & Stiller, 2025). According to Klun (2009) prefilled returns in Europe, notably Slovenia, reduced compliance costs by simplifying the compliance procedure. Similarly, prefilling returns ensures compliance and administrative costs are kept low for enterprises within the EU.

According to the OECD (2022), digitalization of tax administration enhances compliance while reducing administrative costs in the long run. It also enables tax authorities to shift from reactive auditing toward proactive risk management based on data analytics. Similarly, the World Bank (2022) highlights that digital tax tools are particularly effective in environments with high levels of informal activity. However, the literature also points to potential challenges. The implementation of digital tax systems may impose significant compliance costs on businesses, especially small and micro enterprises with limited technological capacity. These challenges include investment in software, training, and adaptation to new regulatory requirements.

The outcomes of adopting e-invoicing and prefilled tax returns vary considerably across countries and institutional contexts. While some countries have recorded substantial revenue increases, others have primarily benefited from reductions in tax compliance costs or improvements in tax payment rates among certain categories of taxpayers. Evidence from lower-income and developing economies, particularly in Latin America, suggests that such systems can yield significant fiscal gains even in contexts with limited administrative capacity (Coolidge & Yilmaz, 2014). More broadly, e-invoicing and prefilling systems simplify the tracking of taxation and lead to increased efficiency in tax practices across diverse institutional settings. Nevertheless,

structural challenges persist in many developing regions. In Africa, Asia, the Middle East, and Latin America, the absence of effective prefilling mechanisms contributes to pronounced tax regressivity, disproportionately burdening smaller businesses. In these contexts, SMEs bear compliance costs exceeding 15% of turnover, a burden that larger firms are better positioned to absorb (Pelletier & Cloutier, 2019). The World Bank has consequently advocated for broader adoption of prefilling systems as a means of reducing both regressivity and the overall costs of compliance (World Bank, 2022).

The tourism sector plays a crucial role in the Croatian economy, contributing significantly to GDP, employment, and regional development, especially in coastal areas. However, its structural characteristics like pronounced seasonality, a high prevalence of cash transactions, and the dominance of micro and small enterprises make it particularly vulnerable to informal economic activity. These features have historically enabled undeclared transactions, reduced tax revenues and distorted fair market competition. To address these challenges, Croatia introduced fiscalization in 2013 as a system of real-time electronic reporting of transactions to the tax authorities. This reform has improved transparency and tax compliance, particularly in cash-intensive sectors such as tourism. The importance of fiscalization is further amplified by the fact that tourism has strong direct and indirect linkages with other sectors, including hospitality, trade, transport, and cultural industries (Tax Administration, 2013). At the same time, it has imposed additional administrative and technical requirements, which have been more demanding for smaller firms. The system has been further expanded through the Fiscalization 2.0 reform (2026), which introduces mandatory e-invoicing and extends fiscalization for business transactions and electronic document exchange. This marks a shift from transaction monitoring toward a broader digital integration of tax administration, aligned with wider trends in digital governance. Therefore, analysing fiscalization in tourism is not only relevant from the perspective of fiscal performance but also for understanding its broader implications for competitiveness and sustainability in a tourism-dependent economy.

Despite the relevance of fiscalization as a digital governance tool, empirical evidence on its effects within specific sectors remains limited. This is particularly true for tourism, where structural characteristics such as seasonality and regional disparities may influence the effectiveness of fiscal instruments in different ways. Most existing studies focus on aggregate fiscal effects or general compliance indicators, without accounting for the structural characteristics of individual sectors. This paper contributes to the literature by focusing specifically on the tourism sector in Croatia, a context where fiscalization is expected to have particularly strong effects due to the prevalence of cash transactions and informal activity. By combining institutional analysis with sectoral data, the study provides new insights into how digital tax instruments operate in a tourism-intensive economy.

In this context, the main focus of this paper is to examine the effects of fiscalization in the Croatian tourism sector, with particular emphasis on its role in reducing the shadow economy, increasing fiscal discipline, and improving market transparency. By conceptualising fiscalization as an instrument of economic policy, the paper aims to assess the extent to which the system has achieved its primary objectives and to analyse its impact on tourism businesses. Special attention is given to the challenges faced by tourism stakeholders during the implementation process, as well as to the longer-term benefits associated with increased transparency and formalisation of economic activity. The paper addresses the following research questions: (1) How has fiscalization affected reported turnover and transaction transparency in the tourism sector? (2) Are there observable differences in effects across counties? (3) What are the key challenges and benefits associated with the implementation of fiscalization from the perspective of tourism stakeholders?

The central hypothesis of the paper is that fiscalization has had a positive effect on reducing the shadow economy and increasing transparency in the tourism sector, thereby generating significant fiscal and economic benefits. At the same time, it is assumed that the implementation of the system has created certain difficulties, particularly for small and medium-sized enterprises, due to the need to adapt to new regulatory and technological requirements. Supporting hypotheses suggest that fiscalization has contributed to increased public revenues from tourism, enhanced fiscal responsibility among businesses, fostered more equitable market conditions, and influenced behavioural changes among economic actors in the sector.

The purpose of this research is to provide a comprehensive analysis of fiscalization in the Croatian tourism sector in the period from 2018-2025, to evaluate its effects on business operations, public revenues, and market dynamics, and to identify its main advantages and limitations from the perspective of tourism stakeholders. The paper presents and analyzes data on the number of taxpayers liable for fiscalization, the number and amount of fiscalized invoices issued at the national and county level, and at the activity level. The data, which are analyzed in the paper, are available through the annual reports generated by the Tax Administration. These are aggregated data at the county level, covering all fiscalized transactions within tourism-related activities, including hotels and accommodation services, campsites and private rentals, hospitality venues (restaurants, cafés, bars), and associated tourism services. The data includes all forms of payment (cash and card) and encompass all types of consumers (foreign and domestic tourists), as well as residents who made purchases within the tourism sector. The study aims to contribute to a better understanding of how digital tax instruments can support the formalisation of economic activity and enhance the financial sustainability of tourism-dependent economies.

The remainder of the paper is structured as follows. Section 2 provides an overview of the evolution of fiscalization as a digital tax governance tool in Croatia, covering both Fiscalization 1.0 and Fiscalization 2.0. Section 3 examines the effects of fiscalization on Croatian tourism, including its impact on the shadow economy, reported turnover trends, regional disparities, financial effects on tourism operators and structural changes in business behaviour. Section 4 discusses the findings and presents policy implications, while Section 5 concludes the paper.

1. EVOLUTION OF FISCALIZATION AS A DIGITAL TAX GOVERNANCE TOOL IN CROATIA

Fiscalization may be defined as a legally mandated set of measures requiring registered entities to report transaction data in real time to the competent tax authority. In its broadest sense, it constitutes a system of electronic invoice monitoring designed to reduce unreported economic activity and ensure equitable tax treatment across all market participants (Kožul, 2018). The Croatian fiscalization model is based on a combination of legal obligations, technological infrastructure, and digital communication with the Tax Administration, allowing for the efficient recording of individual transactions. In addition to its fiscal role, fiscalization has wider legal, technical, and organizational implications. Its effects go beyond increased tax revenues, contributing to more transparent business practices, improved consumer protection, and the strengthening of overall market standards. (Law on Fiscalization in Cash Transactions, 2012).

Comparative evidence from other countries, such as Italy, Portugal, and Brazil, shows similar positive effects of electronic invoicing systems on tax compliance and revenue collection. However, cross-country differences suggest that institutional quality, technological readiness, and enforcement capacity play crucial roles in determining the effectiveness of such reforms. The next section will explain the evolution of Fiscalization 1.0 and Fiscalization 2.0 in Croatia.

1.1 Fiscalization 1.0

The introduction of fiscalization in Croatia was driven by a set of fiscal and economic challenges in the early 2010s. A primary aim was to reduce the size of the shadow economy and increase transparency in cash transactions, particularly in sectors prone to undeclared activity such as tourism, hospitality, and retail. Before the reform, estimates indicated that the shadow economy in Croatia accounted for approximately 25–30% of GDP, reflecting significant levels of undeclared income and tax evasion (Čevizović, 2020). This led to considerable revenue losses, undermined fiscal discipline, and created unequal market conditions. According to Štimac (2015), in 2013, small legal entities and physical persons in the hospitality sector in Croatia declared 40.52% more taxable earnings, 2.6 billion HRK more than in 2012. Brkanić (2012) also notes that, prior to the introduction of the fiscalization system, unrealistically low daily turnover, income, and average employment figures were reported in the annual income tax returns of sole proprietors, particularly in the hospitality and retail sectors.

In this context, fiscalization was introduced as a comprehensive policy instrument with multiple objectives. First, it aimed to enhance transparency by requiring the issuance and real-time reporting of invoices, enabling continuous monitoring of economic activity (Tax Administration, 2013). Second, it sought to strengthen consumer protection by allowing customers to verify the validity of issued receipts through tools such as QR codes. Third, fiscalization contributed to reducing unfair competition by ensuring all businesses operate under the same regulatory framework. Finally, it aimed to establish a more equitable tax system by ensuring all taxpayers fulfil their obligations regardless of firm size.

In addition to domestic drivers, fiscalization was influenced by international pressures related to Croatia's accession to the European Union. Strengthening fiscal transparency and combating tax fraud were key requirements in the accession process, and fiscalization played an important role in meeting these standards (European Commission, 2013). Beyond its fiscal role, fiscalization also contributed to raising awareness among businesses and consumers, fostering a broader culture of tax compliance and responsibility. In this way, fiscalization has helped shape a broader culture of tax responsibility (Gojković & Mulović Trgovac, 2025).

The Croatian fiscalization system was introduced in 2013 as part of broader efforts to combat tax evasion and modernise tax administration. The initial model (Fiscalization 1.0) focused primarily on business-to-consumer (B2C) transactions, requiring taxpayers to report each transaction in real time through certified electronic systems. The implementation of fiscalization required significant initial investment in equipment, training, and organisational adjustments, particularly for micro and small enterprises (Miklošević, 2025). However, its long-term benefits include improved transaction monitoring, reduced tax evasion, and increased public revenues.

Under the Fiscalization 1.0 framework, the system applied to two main categories of taxpayers. The first group includes persons subject to personal income tax from self-employment, such as those engaged in crafts and similar activities, independent professions, agriculture and forestry, and electricity production. The second group comprises corporate income taxpayers, including companies and other legal entities performing economic activities, business units of foreign enterprises, and individuals whose annual revenues exceed EUR 1,000,000 or who transition from the personal income tax system to the corporate income tax system.

Data on the number of fiscalization obligors in cash transactions for the period 2013–2022 are presented in Table 1.

Table 1: **Number of fiscalization obligors in cash transactions for the period 2013–2022**

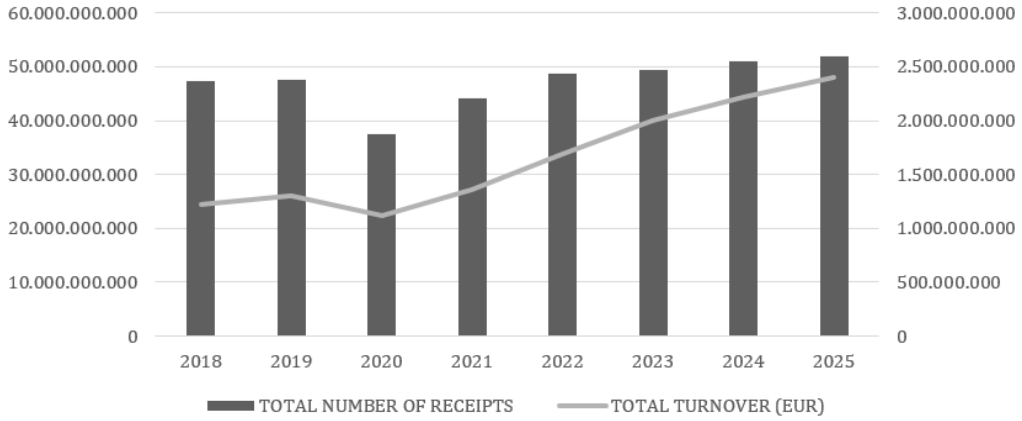
Year	Number of taxpayers	Change (%)	Increase in the number of taxpayers (base year 2013)
2013	68,689	0%	0
2014	71,485	4%	2,796
2015	72,098	5%	3,409
2016	70,728	3%	2,039
2017	81,136	18%	12,447
2018	83,349	21%	14,660
2019	84,597	23%	15,908
2020	81,948	19%	13,259
2021	85,128	24%	16,439
2022	90,722	32%	22,033

Source: Galović, V., & Letinić , S. (2024) Fiscalization of invoices in cash transactions, Proceedings of 9th International Conference Vallis Aurea, Požega, Croatia, pp. 56-68. https://doi.org/10.62598/9thICVA.005.

The data in Table 1 show that the number of taxpayers subject to fiscalization in cash transactions increased each year during the observed period (since the beginning of fiscalization in cash transactions), except in 2016 and 2020. In 2020, the number of taxpayers decreased by 3.13% compared to 2019 and by 1.68% compared to 2018, likely as a result of the impact of the Covid-19 pandemic. In 2021, sales through self-service devices were also included in the fiscalization procedure for cash transactions. The number of taxpayers in 2021 increased by 3.88% compared to 2020.

The introduction of the fiscalization system in cash transactions in the Republic of Croatia was implemented in three phases. The first phase began on 1 January 2013 and included medium and large enterprises, as well as businesses engaged in accommodation services and the preparation and serving of food and beverages. The second phase started on 1 April 2013 and extended the system to entities operating in wholesale and retail trade, repair of motor vehicles and motorcycles, and self-employed professionals. The third phase, introduced on 1 July 2013, expanded fiscalization to all remaining taxpayers, except those explicitly exempt under the legal framework.

Figure 1: **Number and turnover of fiscalized receipts in the Republic of Croatia for the period 2018–2025**



Source: Tax Administration of the Republic of Croatia (2026). Annual reports on fiscalization in cash transactions for the period 2018–2025

The figure 1 presents the evolution of fiscalized economic activity in Croatia over the period 2018–2025, measured through the total number of issued receipts and total turnover. A moderate upward trend is visible in 2018–2019, indicating stable economic growth prior to the COVID-19 crisis. In 2020, both indicators show a sharp decline, with the number of receipts and total turnover significantly reduced, reflecting the contraction of economic activity caused by pandemic-related restrictions. From 2021 onwards, a strong recovery is evident. The number of receipts and total turnover increase steadily, with particularly pronounced growth in turnover. This suggests not only a recovery in transaction volume but also an increase in the average value of transactions, likely driven by inflationary pressures, higher prices, and changes in consumption patterns.By 2023–2025, both indicators reach their highest levels in the observed period, indicating robust economic expansion and normalization of business activity. The continuous growth in fiscalized transactions also reflects the effectiveness of the fiscalization system in capturing real-time economic flows and improving transparency and tax compliance

Recent evidence from Croatia indicates that while digital fiscalization enhances transparency, it may also impose short-term adjustment burdens on smaller firms, particularly regarding technical complexity and financial costs.

Research on fiscalization in Croatia highlights its role in improving transparency and strengthening the relationship between taxpayers and tax authorities. The system's real-time reporting mechanism enables continuous monitoring of transactions, reducing opportunities for tax evasion and increasing the efficiency of tax administration.

1.2 Fiscalization 2.0

Over time, fiscalization in Croatia has developed into a broader digital framework for tax administration. The Fiscalization 2.0 reform is a significant upgrade, extending the system beyond business-to-consumer (B2C) transactions to include business-to-business (B2B) and business-to-government (B2G) transactions, as well as introducing mandatory electronic invoicing (e-invoicing). The reform also includes digital reporting mechanisms, standardised data formats, and closer alignment with European Union digital initiatives, aiming to increase transparency, improve efficiency, and reduce tax evasion (Miklošević, 2025; Gojković & Mulović Trgovac, 2025).

The 2025 Fiscalization Law introduces a comprehensive framework covering all transaction types, supported by mandatory e-invoicing, digital reporting, certification systems, and tools such as the MIKROeRAČUN application for entities outside the VAT system. While these changes are expected to strengthen fiscal discipline and reduce administrative burdens, they also present implementation challenges, particularly for micro and small enterprises with limited digital capacity.

The implementation of Fiscalization 2.0 is planned in phases, with the gradual adoption of e-invoicing obligations across different categories of taxpayers. System testing began in September 2025, while from January 2026 VAT-registered entities are required to issue and receive e-invoices for domestic transactions. From 2027, this obligation will apply to all taxpayers, regardless of VAT status. These developments are consistent with EU requirements on e-invoicing in public procurement. According to the VAT Gap Report (European Commission, 2023), EU Member States lost approximately €93 billion in VAT revenues in 2020. Conservative estimates suggest that about one quarter of this gap can be directly attributed to VAT fraud related to intra-EU trade. In response, the European Union adopted Council Directive (EU) 2025/516 amending Directive 2006/112/EC, aiming to modernise VAT rules for the digital age. A key element of this reform is the introduction of a new digital reporting system based on real-time data exchange for cross-border transactions. The system relies on mandatory e-invoicing, whereby both the issuer and the recipient transmit transaction data to tax authorities, enabling automated cross-checking and improved detection of irregularities.

The European Commission expects that mandatory e-invoicing will provide Member States with more timely and reliable information, strengthening their capacity to combat VAT fraud and reduce the VAT gap. Anticipating these benefits, several Member States, including Italy, Romania, Poland, Greece, France, and Germany, have already initiated or implemented national e-invoicing systems ahead of the Directive's full application. While the reform is expected to further enhance transparency and efficiency, it also introduces new compliance requirements, particularly for small and micro enterprises that may face constraints in digital capacity and resources.

Under Fiscalization 2.0, the primary obligors are issuers and recipients of e-invoices. This includes (i) taxpayers established in Croatia, such as VAT-registered entities, personal income taxpayers, and corporate income taxpayers, and (ii) public sector entities, such as state administration bodies, local and regional self-government units, and budgetary and extra-budgetary users registered in the official public sector registry. Certain entities are exempt from fiscalization obligations. Non-profit organisations and public institutions not subject to corporate income tax are not required to fiscalize invoices issued to final consumers. However, if they perform taxable economic activities, fiscalization applies to those transactions. In addition, private accommodation providers taxed under the flat-rate scheme are excluded, as their income is treated as property income. Family farms are also exempt when selling their own agricultural products directly to final consumers. Overall, the framework focuses fiscalization requirements on entities engaged in taxable market activities, while excluding specific categories with limited or non-commercial operations.

Recent analyses of Fiscalization 2.0 emphasise its potential to further enhance the system through the introduction of e-invoicing and integrated digital reporting. These studies also stress the importance of institutional support, user education, and gradual implementation to ensure successful adoption, especially among small and medium-sized enterprises.

2. EFFECTS OF FISCALIZATION ON CROATIAN TOURISM

Croatia is one of the leading tourist destinations in Europe, combining outstanding natural assets, a rich cultural heritage, and a well-developed coastal infrastructure. In 2023, the country recorded more than 20 million tourist arrivals and over 108 million overnight stays, surpassing pre-pandemic levels (Croatian National Tourist Board, 2024). Tourism contributes approximately 20% of gross domestic product, placing Croatia among the most tourism-dependent economies in the European Union.

Fiscalization in tourism covers all segments of business operations involving final consumers, including accommodation services, food and beverage services, tourist packages, and excursions. It also applies to all providers of related services,

such as tourist guides, car rental agencies, and organisers of sports and recreational activities. The fiscalization obligation requires issuing receipts in real time and reporting them to the Tax Administration, thereby increasing business transparency and ensuring a fairer tax burden. In this context, fiscalization has become an important instrument in combating unreported transactions in the tourism sector, particularly in accommodation services and small hospitality businesses, where irregularities have traditionally been most common. At the same time, fiscalization helps create a more level playing field between large hotel chains and smaller service providers. It encourages the professionalisation of the sector and improvements in service quality, which are essential for the long-term sustainable development of Croatian tourism.

At the end of 2023, the Tax Administration registered more than 16,000 legal entities and approximately 95,000 private accommodation providers and sole traders engaged in the provision of accommodation, catering, and tourism services. The number of registered private landlords increased by nearly 30% over the previous five years, reflecting the expanding reach of the formal economy in the sector (Croatian Chamber of Economy, 2023).

2.1 Impact on the Shadow Economy

Before 2013, the non-issuance of receipts was widespread in Croatian tourism, particularly among private accommodation providers, small catering operators, and excursion organisers. The sector was one of the most significant areas of informal economic activity in the country. Following the introduction of fiscalization, a significant reduction in unreported turnover was recorded. According to data from the Tax Administration of the Republic of Croatia (2013), in the first year of implementation alone, reported turnover in the tourism and catering sectors increased by 17% compared to the previous year. This increase was not primarily due to higher actual consumer spending, but rather to improved recording of transactions previously omitted from official accounts. The reform thus achieved its main objective: a rapid and substantial improvement in fiscal transparency in sectors historically prone to shadow economy activity.

The forthcoming 2025 Law extends fiscalization obligations to B2B and B2G transactions and mandates e-invoicing, further narrowing the scope for under-reporting in commercial relationships between tourism operators and their business clients.

2.2 Fiscal Outcomes: Reported Turnover Trends

Table 2 presents annual reported turnover in the tourism sector from 2018 to 2025, illustrating both the structural impact of fiscalization and the exogenous shock of the COVID-19 pandemic.

Table 2: **Number and turnover of fiscalized receipts in the Republic of Croatia in sector Accommodation and Food Service for the period 2018–2025**

Year	Number of receipts	Turnover (eur)	Average value	Change rate in number of receipts	Change rate in turnover	Share in total activities
2018	456,546,468	3,678,168,082	8.06			15.05%
2019	466,572,022	3,975,236,231	8.52	2.20%	8.08%	15.30%
2020	295,336,514	2,211,023,246	7.49	-36.70%	-44.38%	9.86%
2021	309,250,131	3,531,088,862	11.42	4.71%	59.70%	12.99%
2022	430,093,419	5,337,898,502	12.41	39.08%	51.17%	15.81%
2023	461,998,063	6,597,798,573	14.28	7.42%	23.60%	16.48%
2024	487,672,433	7,428,648,774	15.23	5.56%	12.59%	16.73%
2025	505,174,172	8,222,306,383	16.28	3.59%	10.68%	17.12%

Source: Tax Administration of the Republic of Croatia (2026). Annual reports on fiscalization in cash transactions for the period 2018–2025

The table shows trends in the number and value of fiscalised receipts in Croatia, with particular emphasis on accommodation and food service activities, a key segment of the tourism sector. Overall, economic activity displays a steady increase over the period observed, both in the number of receipts and total turnover. However, significant fluctuations occur in 2020, reflecting the impact of the COVID-19 pandemic. This shock is especially pronounced in the tourism-related sector, where the number of receipts fell by 36.7% and turnover by 44.4%, indicating the sector's high sensitivity to external disruptions. The severe contraction resulted from the global COVID-19 pandemic: border closures, travel restrictions, and booking cancellations devastated a sector heavily reliant on international arrivals. From 2021 onwards, a strong recovery is evident. Accommodation and food service activities experienced rapid growth, with turnover rising by nearly 60% in 2021 and continuing to increase in subsequent years. Notably, this recovery was not driven solely by an increase in the number of transactions. The average value per receipt increased markedly across the observed period, which points to the significant role of inflationary pressures alongside genuine demand recovery. Croatia recorded cumulative inflation of approximately 25% between 2021 and 2024, driven by rising energy prices, supply chain disruptions, and wage growth in the service sector. As a result, a portion of the

growth in fiscalised turnover reflects higher prices rather than a proportional increase in the volume of services provided. By 2025, reported turnover of €8 billion surpassed pre-pandemic levels, attesting to both the recovery of tourism demand and the deepening normalisation of fiscal compliance. This confirms the growing importance of tourism-related activities within the overall economy. In summary, the table highlights both the vulnerability and resilience of the tourism sector, as well as the usefulness of fiscalization data for tracking real-time economic dynamics.

2.3 Disparity in fiscalization between regions

A notable aspect of fiscalization implementation in Croatian tourism is the marked disparity between the Adriatic coastal zone and the continental inland regions. The coastal counties account for over 85% of total tourist turnover. Fiscalization is generally enforced more rigorously on the coast, supported by advanced digital infrastructure, higher transaction volumes, and more frequent Tax Administration inspections. In continental Croatia, tourist flows are significantly lower, and the sector consists mainly of smaller, often family-run operators with limited prior experience of formal fiscal processes. Rural tourism operators, including agritourism farms and health tourism facilities, often face connectivity issues, higher relative compliance costs, and lower levels of fiscal literacy. Temporary events such as traditional fairs and festivals also present compliance challenges, particularly for smaller exhibitors unfamiliar with the relevant regulations.

Table 3 presents fiscalized turnover (in euros) for 2024 across the main Croatian tourist regions— Istria, Kvarner, Dalmatia, and the City of Zagreb—distinguishing between the peak summer period (June–September) and the rest of the year.

Table 3. **Fiscalized Turnover by Tourism Region, 2024 (EUR)**

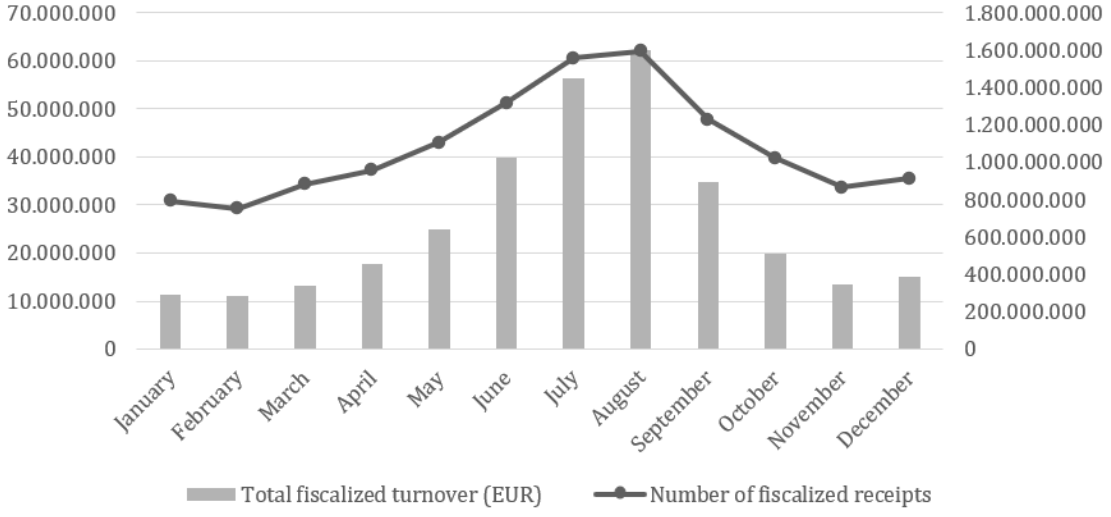
Region	Summer (June–Sept)	Rest of Year	Total
Dalmatia	€6,116,162,145	€6,060,758,351	€12,176,920,496
Zagreb	€3,309,590,210	€7,099,904,035	€10,409,494,244
Istria	€2,593,755,822	€1,940,460,657	€4,534,216,479
Kvarner	€2,135,805,065	€2,317,111,000	€4,452,916,065

Source: Tax Administration of the Republic of Croatia (2026). Annual reports on fiscalization in cash transactions for the period 2018–2025

The results clearly confirm the strong seasonality of tourism in Croatia. Dalmatia records nearly half of its annual turnover during the summer months, reflecting the dominance of the "sun-and-sea" tourism model. Istria also shows pronounced seasonality, with significantly higher revenues in summer compared to the rest of the year. In contrast, Kvarner displays a more balanced distribution of turnover, indicating lower dependence on the peak season and a relatively stronger presence of short-stay and year-round tourism. Zagreb stands out as a destination where the majority of turnover is generated outside the summer period, highlighting its role as a business, cultural, and city-break destination.

Overall, the data reveal a strong link between tourist activity and fiscalised turnover. The summer season remains the most intensive period of economic activity in coastal regions, while urban centres such as Zagreb maintain more stable, year-round demand. In fact, more than 60% of total tourism turnover in Croatia is generated between June and September, which is also reflected in peak fiscalised transactions during this period. This is further illustrated in the next figure, which presents the monthly dynamics of fiscalised turnover and the number of fiscalised receipts in Croatia.

Figure 2. **Monthly dynamics of fiscalized turnover and the number of fiscalized receipts in Croatia in 2025 (sector Accommodation and Food Service)**



Source: Tax Administration of the Republic of Croatia (2026). Annual reports on fiscalization in cash transactions for 2025

The graph clearly shows a pronounced seasonal pattern. Both indicators gradually increase from the beginning of the year, reaching their peak during the summer months, particularly in July and August. This reflects the strong influence of tourism activity, a key driver of economic performance in Croatia. After the peak season, both turnover and the number of receipts decline steadily towards the end of the year, indicating reduced economic activity outside the main tourist season. The lowest levels occur in the winter months, especially January and February. The increase in turnover during peak months is more pronounced than the increase in the number of receipts, suggesting higher average spending per transaction during the tourist season.

Although "sun-and-sea" tourism remains the dominant model, recent years have seen growing diversification towards cultural, health, rural, active, and gastronomic tourism. The main tourist regions include Istria (Pula, Rovinj, Poreč), Kvarner (Opatija, Krk, Rab), and Dalmatia (Zadar, Split, Dubrovnik), along with Zagreb as an increasingly important urban destination. A notable trend is continued investment in tourism infrastructure and accommodation capacity, including the modernisation of campsites, hotels, and marinas.

2.4 Financial effects on tourism operators

Fiscalization produced varied financial effects across the tourism operator spectrum. For the sector as a whole, positive outcomes included increased tax revenues for national and local budgets, a more level competitive playing field, and, over the longer term, improved creditworthiness for compliant businesses, as properly documented turnover facilitates access to bank financing and EU structural funds.

Tourism has several distinctive features that complicate the application of fiscalization compared to other sectors. The first is the extreme seasonal concentration of business activity: in coastal destinations, more than 80% of annual turnover may be generated within three to four months, creating peak demands on fiscal infrastructure during summer while making fixed cash register installations economically inefficient during the off-season. This has driven the widespread adoption of mobile fiscal devices. The second complexity concerns the diversity of tax rates applicable to tourism service bundles. A package combining accommodation, breakfast, transport, and an excursion may attract different VAT rates for each component, requiring fiscal software to categorise each element correctly and automatically. The third challenge is service mobility: a tourist guide operating in Split, for example, must be able to issue a fiscal receipt away from any fixed business premises. The regulatory framework accommodates this through mobile fiscalization via smartphone applications, enabling fiscalization 'on the go'. Where internet connectivity is intermittent, as in parts of rural continental Croatia and on some islands, the system permits temporary offline storage of invoices with subsequent transmission upon reconnection.

For micro and small operators, the initial years of fiscalization imposed tangible additional costs. These included the purchase and maintenance of certified fiscal devices, software licensing fees, digital certificate procurement, and expenses related to ensuring continuous internet connectivity. For seasonal coastal operators whose income is concentrated into three to four months of the year, these fixed costs represented a proportionally significant burden.

The 2025 Law is expected to mitigate some of these costs over time: the shift towards e-invoicing and digital reporting is anticipated to reduce administrative overhead, eliminate certain mandatory reporting forms, and lower the marginal cost of compliance for established operators.

2.5 Structural changes in business behaviour

Beyond aggregate fiscal metrics, fiscalization induced qualitative changes in the organisation and operation of tourism businesses. Four principal dimensions of behavioural change merit attention:

- Formalisation of previously informal activity: a substantial number of operators who had previously worked informally registered their activities as legal entities or sole traders, responding both to enforcement risk and to the recognition that formal status offered access to institutional support mechanisms.
- Technology adoption: the requirement to use certified fiscal devices accelerated broader digital transformation within the sector. The adoption of mobile fiscal applications, online booking platform integrations, and digital payment terminals became standard practice– particularly among coastal operators– creating a foundation for further modernisation.
- Improved business management: systematic issuance of fiscal receipts generated reliable internal records of revenues and expenditures, enabling more effective monitoring of business performance. For previously informal operators, this constituted a qualitative leap in management capacity.
- Enhanced guest experience: tourists increasingly expect, and in many cases demand the ability to pay by card, receive digital or printed receipts, and access transparent pricing. Fiscalization accelerated the adoption of these service standards across the sector, contributing to improved perceptions of professionalism and trustworthiness.

Fiscalization in tourism goes beyond tax control, as it encourages businesses to formalise their activities, adopt digital tools, improve internal management, and offer more transparent and reliable services, ultimately strengthening the sector's competitiveness and trust.

3. DISCUSSION AND POLICY IMPLICATIONS

The evidence presented in this paper supports the conclusion that fiscalization has been a largely successful reform in the context of Croatian tourism. The 17% increase in reported turnover in the first year, sustained growth in subsequent periods, and the demonstrable expansion of the formal economy through the registration of new accommodation providers all attest to the reform's effectiveness in achieving its primary objectives. However, the analysis identifies persistent implementation asymmetries that require policy attention. Three areas merit particular focus.

First, support for small and seasonal operators. The regulatory framework treats all obliged entities essentially equally, yet the compliance burden falls disproportionately on micro-operators whose revenues are concentrated within a short period. Drawing on Hungary's experience, a programme of targeted subsidies or tax credits for the acquisition of mobile fiscal devices– particularly for operators in rural and continental regions– could reduce this disparity and encourage fuller engagement with the formal system.

Second, digital infrastructure investment. Reliable internet connectivity is essential for the effective functioning of real-time fiscalization. In areas where connectivity remains intermittent, compliance errors and delays are more likely. Investment in broadband infrastructure, including the extension of mobile network coverage in rural and island areas, would strengthen the technical backbone of fiscalization and reduce involuntary non-compliance.

Third, continuing education and outreach. Structured, accessible educational programmes developed in partnership between the Tax Administration, the Croatian National Tourist Board, and the Croatian Chamber of Economy, targeted at the specific operational contexts of different tourism segments (coastal private accommodation, agritourism, health tourism, event hospitality) would contribute to improved voluntary compliance and reduced error rates.

The forthcoming 2025 legislation extending fiscalization to B2B and B2G transactions and mandating e-invoicing represents a further step towards comprehensive fiscal transparency. Its success will depend significantly on whether the transition costs for smaller operators are adequately managed– whether through direct subsidy, simplified compliance tools, or phased implementation schedules.

CONCLUSION

This paper has examined the effects of fiscalization on the Croatian tourism sector with particular attention to its role in reducing shadow economy activity, increasing fiscal discipline, and improving market transparency. The analysis covered both the original Fiscalization 1.0 framework introduced in 2013 and the ongoing Fiscalization 2.0 reform, which extends mandatory reporting to B2B and B2G transactions and introduces e-invoicing from 2026 onwards. The central finding is that fiscalization has served as an effective instrument of fiscal policy, contributing significantly to the reduction of shadow economy activity, the increase in reported turnover, the formalisation of previously informal operators, and the enhancement of market fairness in one of Europe's most tourism-dependent economies. Over the period 2018–2025, accommodation and food service activities demonstrated sustained growth in both the number and value of fiscalized receipts, with the sector's share of total fiscalized activity rising from 15% to over 17%. The data further confirm that fiscalization contributed to the formalization of previously informal operators, with the number of registered private accommodation providers increasing by nearly 30% over five years. Regional analysis reveals that fiscalization effects are more pronounced in coastal and urban destinations, where digital infrastructure is more developed and transaction volumes are higher, while smaller and seasonal businesses in continental areas continue to face higher relative compliance burdens.

The main contribution of this paper lies in providing empirically grounded, sector-specific evidence on the interaction between digital tax instruments and tourism sector performance — an area that remains underexplored in the existing literature, which predominantly focuses on aggregate fiscal outcomes rather than sectoral dynamics.However, the study is subject to several limitations. The analysis relies primarily on secondary administrative data from the Tax Administration and official statistical sources, which limits the ability to establish causal relationships between fiscalization and observed changes in reported turnover. The absence of primary survey or interview data means that the perspectives of tourism operators are captured only indirectly through existing reports. Furthermore, the regional analysis is constrained by data availability at the county level, and the effects of the Fiscalization 2.0 reform cannot yet be fully assessed given its recent introduction.

Future research should address these limitations by collecting primary data directly from tourism businesses across different regions and size categories, enabling a more nuanced assessment of compliance costs, behavioural responses, and perceived benefits. Longitudinal studies tracking the effects of Fiscalization 2.0 — particularly the mandatory e-invoicing obligation — on small and micro enterprises in the tourism sector would be especially valuable. Comparative research examining the Croatian experience alongside other tourism-dependent economies that have implemented similar digital tax reforms could further advance understanding of the conditions under which fiscalization generates the most significant fiscal and economic benefits.

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DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

In preparing this paper, the authors used ChatGPT in order to improve language clarity, assist in structuring the manuscript's outline, and refine academic phrasing. Following the use of this tool, the authors have reviewed and edited the content as necessary and take full responsibility for the content of the published article.

REFERENCES

Brkanić, V. (2012). Fiskalizacija blagajničkog poslovanja povodom Prijedloga Zakona o fiskalizaciji u prometu gotovinom. *Računovodstvo, revizija i financije*. No. 9

Coolidge, J., & Yilmaz, F. (2014). Does e-filing reduce tax compliance costs in developing countries?, World Bank Group, https://openknowledge.worldbank.org/handle/10986/20428

Croatian Chamber of Economy. (2023). *Analysis of the tourism market 2022*. Zagreb

Croatian National Tourist Board. (2024). *Analysis of tourist traffic by regions*. https://www.htz.hr/hr-HR/informacije-o-trzistima/analize-s-podrucja-turizma/analize-turistickog-prometa

Čevizović, I. (2020). The impact of tax changes on the shadow economy in the Croatian tourism sector, Master's thesis, Aalborg University. AAU Project Library. https://projekter.aau.dk/projekter/files/385925623/The_impact_of_tax_changes_on_the_shadow_economy_in_the_Croatian_tourism_sector.pdf

European Commission. (2013). *Final evaluation of the Fiscalis 2013 programme*, https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52014DC0745&from=HR

European Commission. (2023). *VAT gap in the EU – Report 2023 (*Poniatowski, G., Bonch-Osmolovskiy, M., Śmietanka, A., Sojka, A.,) Publications Office of the European Union, Luxembourg

Galović, V., & Letinić, S. (2024). Fiscalization of invoices in cash transactions, *Proceedings of the 9th International Conference Vallis Aurea*, pp. 56-68. https://doi.org/10.62598/9thICVA.005

Gojković, H., & Mulović Trgovac, A. (2025). Fiscalization in Croatia: Evolution from 1.0 to 2.0. *Obrazovanje za poduzetništvo-E4E: znanstveno stručni časopis o obrazovanju za poduzetništvo*, *15*(2), 22-35. https://hrcak.srce.hr/file/493316

Heinemann, M., & Stiller, W. (2025). Digitalization and cross-border tax fraud: evidence from e-invoicing in Italy. International Tax and Public Finance, 32(1), 195-237.

Hesami, S., Jenkins, H., & Jenkins, G. P. (2024). Digital transformation of tax administration and compliance: A systematic literature review on e-invoicing and prefilled returns. *Digital Government: Research and Practice, 5*(3), 1–20. https://doi.org/10.1145/3643687

Koch, B. (2019). The E-invoicing journey 2019–2025. *Billentis*, 2019. https://www.billentis.com/The_einvoicing_journey_2019-2025.pdf

Kožul, K. (2018). Fiskalizacija u Republici Hrvatskoj. Bachelor's thesis. Sveučilište Jurja Dobrile u Puli.

Klun, M. (2009). Prefilled income tax returns: Reducing compliance costs for personal income taxpayers in slovenia. *Financial Theory and Practice* 33, 2, 219–233. https://hrcak.srce.hr/file/62562b

Law on Fiscalization in Cash Transactions. (2012). Official Gazette No. 133/12, 115/16, 106/18, 121/19, 138/20, 114/23 . https://www.zakon.hr/z/548/zakon-o-fiskalizaciji-u-prometu-gotovinom

Miklošević, I. (2025). Fiscalization 2.0: Legal Framework, Digital Transformation and Impact on Micro and Small Entrepreneurs in the Republic of Croatia. Festung: Časopis za interdisciplinarna istraživanja u poslovanju. 1(1), 7-14. https://hrcak.srce.hr/clanak/483514

Naritomi, J. (2019). Consumers as Tax Auditors. *American Economic Review.* 109 (9). 3031–3072**.** DOI: 10.1257/aer.20160658

OECD. (2022). CONSUMPTION TAX TRENDS 2022. HTTPS://WWW.OECD.ORG/EN/PUBLICATIONS/CONSUMPTION-TAX-TRENDS-2022_6525A942-EN.HTML

Pelletier, C., & Cloutier, L. M. (2019). Conceptualising digital transformation in SMEs: An ecosystemic perspective. *Journal of Small Business and Enterprise Development* 26, 6/7 (2019), 855–876. https://www.emerald.com/jsbed/article/26/6-7/855/254786/Conceptualising-digital-transformation-in-SMEs-an

Pomeranz, D. (2015). No Taxation without Information: Deterrence and Self-Enforcement in the Value Added Tax. *American Economic Review.* 105 (8): 2539–2569. 10.1257/aer.20130393

Štimac, T. (2015). *Rezultati fiskalizacije u prometu gotovinom*. Financijski klub. http://finance.hr/rezultati-fiskalizacije-2014/

Tax Administration of the Republic of Croatia. (2013). Obveza fiskalizacije. *Porezni vjesnik*. https://udruge.gov.hr/UserDocsImages/userfiles/file/FiskalizacijaWEB%5B1%5D.pdf

Tax Administration of the Republic of Croatia. (2026). *Annual reports on fiscalization in cash transactions for the period 2018–2025*. Ministry of Finance. https://porezna.gov.hr/fiskalizacija/izvjestaji/karta

World Bank. (2022). *The World Bank annual report 2022: Helping countries adapt to a changing world*. https://doi.org/10.1596/AR2022EN