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Investigation the effect of digital taxation and digital accounting on customs efficiency and port sustainability

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CHRONICLE	A B S T R A C T

Article history: Received: July 18, 2023 Received in revised format: September 3, 2023 Accepted: October 17, 2023 Available online: October 17, 2023 Keywords: Digital Taxation Digital Accounting Corporate Sustainability Customs Efficiency and customs ports Sustainable Trade This paper Exploration effect of digital taxation and digital accounting on customs efficiency and corporate sustainability at customs ports. Traditional tax and accounting procedures have undergone a radical transformation thanks to digital technology, which also provides more efficient methods that can have a big influence on customs operations. This article tries to clarify the interconnectivity between digital taxes, digital accounting, and the customs environment by a detailed analysis of customs-related factors such as compliance, efficiency, and sustainability. By automating compliance checks and streamlining tax-related activities, digital taxation is shown to considerably improve customs efficiency and efficiently comply with sustainability goals. Digital accounting simultaneously increases data accuracy and process efficiency, enhancing the sustainability of customs ports and significantly enhancing customs efficiency. The results of this study have significance for both customs agencies and businesses, offering the possibility of improving operational effectiveness, compliance observance, and sustainability practices. However, the necessity for continual research that concentrates on cutting-edge technology and legal frameworks is highlighted by several restrictions. By offering actual proof of the beneficial effects of digital technology on customs operations and sustainability, this study adds to the body of knowledge and lays the groundwork for further in-depth investigations.

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1. Introduction

The fusion of technology, finance, and charity has generated special potential to enhance business sustainability in the contemporary period of fast digital transition (McManus, 2008). Digitalization has radically changed the field of accounting practices, allowing businesses to improve transparency and expedite financial procedures (Manita et al., 2020). At the same time, new opportunities for firms to engage in socially responsible activities have emerged because of the digitization of traditional charitable practices, notably the taxation (Rabbani et al., 2021; Allah Pitchay, 2022, Hamour et al., 2023). In addition, digital technology introduction has had a profound influence on many aspects of corporate operations in the quickly changing context of international trade and commerce (Dilyard et al., 2021; Ababneh et al., 2023). Digital accounting and taxes have emerged as key elements of these revolutionary shifts, revolutionizing conventional customs procedures and business sustainability initiatives (Chen, 2019; Zobi et al., 2023). Understanding how technology developments are changing the dynamics of global commerce requires a critical examination of how digital taxation and accounting affect customs efficiency and company sustainability at customs ports (Rukanova et al., 2023). Moreover, the digitization of international commerce has prompted important discussions about the impact of digital taxes and digital accounting on the effectiveness of customs and the viability of businesses at customs ports (Kästik, 2019a; Gruchmann et al., 2020; Zasko et al., 2021; Senyo et al., 2021;

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Liu et al., 2023; Kim & Kim, 2020). However, there is a need to thoroughly explore how these digital tools affect customs procedures and the sustainability plans of firms engaged in cross-border commerce as businesses use digital technology to optimize their operations. A thorough research into the combined impact of digital taxation, digital accounting, customs efficiency, and business sustainability is conspicuously missing despite the expanding corpus of literature on these topics. The majority of current research focuses on each component separately, excluding any possible synergies or conflicts that may result from their confluence. Furthermore, given how quickly digital technologies are developing, it is imperative to continuously and thoroughly examine how they may affect corporate sustainability initiatives as well as customs operations. By offering a comprehensive examination of the impacts of digital accounting and taxation on company sustainability at customs ports, this research aims to close this gap. However, this study's main objective is to examine and comprehend the effects of incorporating digital accounting and taxation into customs procedures, with a focus on how these developments affect corporate sustainability and customs efficiency within the intricate system of customs ports. In order to accomplish this goal, this paper will offer stakeholders, such as customs authorities and businesses, actionable insights and recommendations. This will enable them to utilize digital technologies effectively for improving trade efficiency and promoting sustainable practices in the context of international trade. The goal of this project is to enhance informed policy creation and decision-making in the quickly changing field of international commerce driven by digital revolutions. In the context of current customs port operations, this study seeks to fill a knowledge gap regarding the interactions between digital taxes, digital accounting, customs efficiency, and business sustainability. However, this investigation focuses on the effects of digital taxes and accounting on streamlining customs procedures and encouraging sustainable practices inside businesses engaged in digitized commerce.

2. Literature Review

Digital technologies have fueled a transformational shift in recent years in global trade and logistics. Significant scholarly research has been done on the effects of digitization on administrative burdens, business models, revenue administration, and public sector change in the context of customs and ports. The literature review that follows summarizes major findings from significant research on the impact of digital transformation on administrative procedures, sustainability efforts, and customs efficiency.

2.1 Digital Taxation on Customs Efficiency and Sustainability

The adoption of digital technology in revenue administration has only been examined by Zasko et al. (2021), they indicate that which can result in better fiscal outcomes while also having wider economic ramifications for customs operations. Gruchmann et al. (2020) found that digital business models and digitalization intersect to reshape business models within the sea freight industry which affects the potential for enhanced operational efficiency and effectiveness. Kästik (2019b) reflect that the Estonian tax and customs board is highlighted as a key example of how digital transformation is reducing administrative burden for businesses. Moreover, Senyo et al. (2021) provide insights into the possibilities for enhanced efficiency and sustainability in the context of port operations by demonstrating how digital platforms may be crucial in reforming traditional public sector operations. Gruchmann et al. (2020) found that digital business models and digitalization intersect to reshape business models within the sea freight industry which affects the potential for enhanced operational efficiency and effectiveness. The continuous digital revolution is playing a key role in determining economic growth, business strategies, and sustainability (Al-Zaqeba et al., 2022; Alflaieh, 2022). The many facets of digitalization's impact have been studied by academics, with an emphasis on sustainability, taxes, environmental legislation, and how they affect business performance and social well-being. Fanea-Ivanovici et al. (2019) places a strong emphasis on how digitization promotes responsibility and openness in business processes. In the investigation of the effects of tax evasion, the publication of sustainability reports, and earnings management on firm value in the digital age. Andayani (2021) found that the relationship between digital transformation, sustainability, and purpose in multinational corporations, George and Schillebeeckx (2022) emphasize the need of coordinating digital activities with sustainable practices and organizational goals. In addition, the prospective effects of the Fourth Industrial Revolution and smart technologies are discussed in relation to digital entrepreneurship, taxes in the digital economy, and sustainable development in Africa by Mpofu (2023). In addition, Wang et al. (2023) identify the role of digital finance and environmental regulations in determining resource policies and sustainability results. Liu et al.'s (2023a) assessment of the effect of environmental taxes on financial performance.

2.2 Digital Accounting on Customs Efficiency and Sustainability

The landscape of trade logistics has seen a considerable transformation due to the quick development of digital technology, with an emphasis on the effectiveness of customs and accounting procedures. To increase the effectiveness of Port Community Systems, Bisogno et al. (2015) concentrate on the integration of information flows in logistic processes. The study emphasizes the crucial part that integrated digital information plays in optimizing operations in port towns and eventually improving the effectiveness of customs. Dmitriev (2019) looks at how digital technologies affect the visibility of transport and logistics systems, focusing on how these technologies improve visibility and operational effectiveness. The study clarifies how technological developments might result in improved tracking and administration of logistical procedures, which directly affects the effectiveness of customs. In 2021, Zasko et al. explore how digitizing customs revenue management might improve the effectiveness of the Russian Federation's budget, in addition to emphasizes how digitization has the potential to simplify

revenue management at customs, thereby boosting overall effectiveness and efficiency. Kartysheva (2021) examines the effectiveness of digital customs services and offers insights into how this directly affects customs procedures, resulting in improved efficiency and simplified operations. Moreover, Kuchkarov (2022) explains the numerous components that digital transformation might impact, eventually leading to increased customs efficiency. Likewise, Alsharari et al. (2023) emphasizes how digital accounting systems may streamline accounting procedures in customs, fostering efficiency and accuracy, when they are successfully connected with information technology. Ababneh et al. (2023) investigate the use of blockchain technology to promote eco-efficiency and sustainable supply chains at hardy customs ports. The study focuses on how blockchain might improve customs operations' transparency, traceability, and efficiency. As well as Zhou and Wang (2020) found that digital accounting positively effect the quality and transparency of sustainability reporting. Besides, Khan and Islam (2021) indicate that digital accounting contribute to enhanced cost reduction, improved sustainability performance and operational efficiency. Wang and Ye (2023) examine the connection between China's export-quality products and the digital transformation. The study demonstrates how increased innovation productivity and overall factor efficiency may have a favourable influence on export quality. However, based on the literature, integrating digital accounting practices and technology is essential for improving trade logistics and customs efficiency in the setting of customs ports. These developments significantly contribute to the promotion of efficiency, sustainability, and transparency in trade operations.

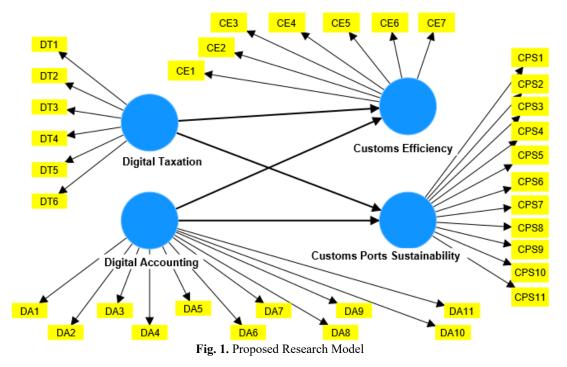
2.3 Globalization of Trade and Commerce

The globalization of trade and commerce has necessitated efficient customs processes to facilitate cross-border trade while ensuring regulatory compliance and sustainability. The advent of digital technologies has transformed traditional customs operations, enabling streamlined processes and enhanced accuracy (Raza et al., 2023). In this literature review, this paper explores the effect of digital taxation and digital accounting on customs efficiency and corporate sustainability at customs ports, focusing on key factors such as Customs Regulations Compliance (CRC), Customs Port Efficiency (CPE), Customs Data Integration (CDI), Cross-Border Trade Facilitation (CBTF), Compliance Technology Adoption (CTA), Customs Audit Trail Transparency (CATT), Customs Reporting Accuracy (CRA), and Customs Process Automation (CPA) (Al-Zaqeba et al., 2022; Abdul Aleem, 2022). However, the legal and regulatory frameworks governing cross-border business to be adhered to, customs regulations must be complied with. For automating compliance checks, reducing the likelihood of errors, and motivating stakeholders to follow rules, digital tax and accounting systems are crucial (Klievink et al., 2016). Proper customs port operations are necessary for the timely and cost-effective transfer of goods across borders (Liao et al., 2023; Kachanova et al., 2023). According to Vorotyntseva et al. (2020) digital technologies streamline customs processes, speeding up data processing times and increasing data accuracy, thus boosting the effectiveness of customs ports.

The sharing of real-time data and information among supply chain participants is improved through the integration of customs data through digital platforms. Increased coordination, better decision-making, and easier customs processes are all made possible by CDI, which also helps to increase efficiency (Dal Maso, 2019). By automating documents, simplifying electronic payments, and enabling frictionless information sharing, digital taxes and accounting systems streamline processes associated with cross-border commerce. The incorporation of digital technology considerably strengthens CBTF and encourages more seamless cross-border transactions (Malkawi et al., 2019). Adoption of digital compliance-focused solutions is necessary to guarantee compliance with tax laws and customs requirements. CTA systems improve reporting accuracy, decrease instances of non-compliance, and promote a more sustainable trading environment. Digital accounting solutions have strong audit trail features that enable transaction transparency and traceability. The CATT promotes confidence and adherence to legal requirements by ensuring the accountability of customs procedures. The accuracy and timeliness of customs reporting are considerably improved by digital accounting systems. As part of CRA, real-time reporting and automated data validation improve data quality and conformance to reporting requirements (Wang et al., 2016). In addition, digital technologies enable the automation of the customs process, which eliminates manual involvement, shortens processing times, decreases mistakes, and maximizes resource use. CPA results in more effective customs operations, which improves the sustainability and efficacy of commerce. However, the use of digital taxation and accounting systems, however, has shown to have a significant positive influence on compliance, effectiveness, and sustainability inside customs ports. These innovations have the potential to revolutionize the way business is conducted by streamlining procedures, fostering transparency, and encouraging adherence to legal and regulatory standards, eventually resulting in more effective and sustainable cross-border trade operations.

3. Research Model

Based on literature review, this paper proposes a research model to comprehend the significant influence of digital technologies, particularly digital taxation and digital accounting, on customs efficiency and customs port sustainability in light of the literature analysis previously offered. This model includes four assumptions that capture the anticipated beneficial benefits of these digital technologies on important areas of customs operations and overall sustainability, drawing on knowledge gained from earlier research. By delving more in-depth, numerous studies emphasize the revolutionary potential of digital taxes in boosting compliance and expediting regulatory processes, including Bisogno et al. (2015) and Ababneh et al. (2023). The findings of Fanea-Ivanovici et al. (2019) and Ababneh et al. (2023) confirmed the hypothesis that digital taxation and sustainability are positively correlated. Liu et al. (2023b) and Zasko et al. (2021) emphasized the advantages of digital accounting in terms of improving reporting accuracy and speeding up processing. According to Alsharari and Ikem (2023) the openness and traceability of transactions made possible by digital accounting have a favorable impact on the sustainability of customs ports. According to Bisogno et al. (2015) digital taxation is anticipated to considerably improve Customs Efficiency by automating compliance checks and streamlining tax-related processes. Additionally, it is anticipated that digital taxation would encourage regulatory compliance and financial transparency, which will connect perfectly with the objectives of Customs Ports Sustainability and promote a more sustainable business environment at customs ports (Ababneh et al., 2023; Fjord & Schmidt, 2023). Like how digital accounting systems are anticipated to increase data integrity and optimize customs operations, eventually boosting customs efficiency. In addition, digital accounting is also projected to play a significant role in encouraging sustainable customs operations and guaranteeing compliance with regulatory requirements thanks to its capacity to offer extensive audit trails and real-time reporting. However, Fig.1 below provides the research model.



This study model serves as the conceptual underpinning for empirical analysis with the goal of elucidating the complex interrelationships between digital taxes, digital accounting, customs effectiveness, and sustainability of customs ports. However, the following are the hypotheses that will be tested in this study.

H₁: Digital Taxation has a significant and positive effect on Customs Efficiency.

H2: Digital Taxation has a significant and positive effect on Customs Ports Sustainability.

H₃: Digital Accounting has a significant and positive effect on Customs Efficiency.

H4: Digital Accounting has a significant and positive effect on Customs Ports Sustainability.

4. Methodology

This paper aims to explore the effects of digital taxation and digital accounting on customs efficiency and customs ports sustainability. The study utilized structured questionnaires as the primary data collection instrument. However, the population for this paper comprised customs officials, IT professionals, compliance officers, accountants, auditors and policy analysts, including those in charge of taxes and accounting within the customs procedures. However, Smart Pls4 was utilized to examine the data. This program is effective and may quickly reveal the association between two variables (Al-Zaqeba et al., 2020).

5. Results

5.1 Path Coefficients

This paper uses a measurement known as the path coefficient to clarify the extent of the influence that the independent variable has on the dependent variable. Additionally, the use the determination coefficient, sometimes abbreviated as R-Square, to show how much an exogenous variable may influence an endogenous variable numerically. The endogenous latent variables are crucial elements of the structural model, and their R-Square values are of special relevance. These numbers indicate a significant and noticeable relationship between the exogenous and endogenous variables when they are at or above 0.67. In essence, it says that fluctuations in the exogenous variable may be blamed for a sizable percentage of the variance seen in the endogenous variable. However, Figure 2 illustrates how the coefficients, particularly in the context of achievement motivation,

act as channels showcasing the direct and indirect impacts of the exogenous factors on the endogenous variable. Each coefficient in this network represents the intensity and direction of the relationships between the components, illuminating the complex interplay between them in this study model.

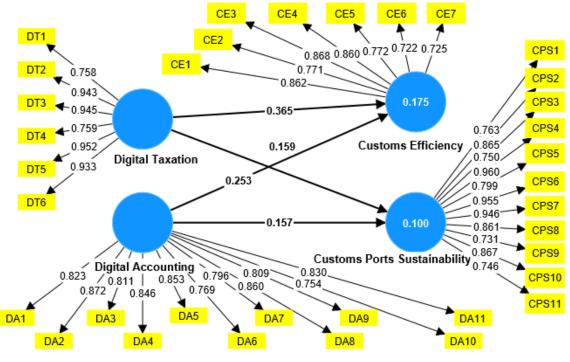


Fig. 2. Measurement Model

Outer loading values for each indication of several study factors are bigger than 0.7. The information above, which demonstrates that none of the variable indicators have outer loading values below 0.5, demonstrates that all of the variable indicators are suitable for use in research and pertinent for future investigation.

5.2 Reliability testing and AVE

In Table 1, three regularly employed metrics are utilized to assess variable dependability: Cronbach's Alpha, composite reliability, and AVE. These metrics evaluate the SEM-PLS4 analysis's constructs' convergent validity, overall reliability, and internal consistency. The strong Cronbach's Alpha coefficients, the composite reliability (more than 0.70), and the average extracted variance all indicate that the constructs in Table 1 are reliable and trustworthy for the SEM-PLS4 study. These steps provide a guarantee for the required ideas' precision, internal coherence, and reliability.

Table 1

Reliability testing and AVE

	Alpha Cronbach	Composite-reliability (rho_a)	Average-variance extracted (AVE)
Customs Efficiency	0.904	0.904	0.639
Customs Ports Sustainability	0.958	0.967	0.713
Digital Accounting	0.952	0.958	0.674
Digital Taxation	0.943	0.948	0.785

5.3 Structural Model

Numerous indicators are examined in statistical analysis to assess hypotheses. Examples of these indicators include the original value sample estimates (O), t-statistics (T), and p-values (P). They clarified the significance and nature of the relationship between the variables. The original value sample estimate (O) displays the numerical estimate obtained from the sample data. A result close to -1 indicates an undesirable correlation, whereas a score around +1 indicates a positive correlation between the variables.

Fig. 3 depicts the hypothesis testing process, which includes assessing the study hypotheses. The previously mentioned route coefficients provide important information for this testing. By examining the data in Table 3, researchers may determine if the study hypotheses have been supported or rejected based on the direct effects seen between variables. The table is a crucial tool for understanding the judgements made throughout the hypothesis testing process.

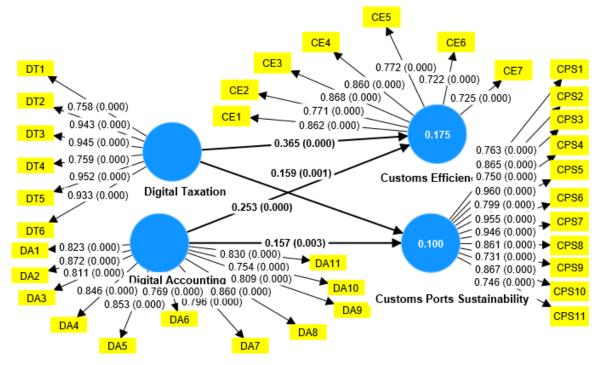


Fig. 3. Structural Model Results

 Table 2

 Results of Hypothesis Testing

Path	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Digital Accounting \rightarrow Customs Efficiency	0.159	0.162	0.048	3.294	0.001
Digital Accounting \rightarrow Customs Principles Digital Accounting \rightarrow Customs Ports Sustainability	0.157	0.162	0.053	2.942	0.003
Digital Taxation \rightarrow Customs Efficiency	0.365	0.367	0.046	7.883	0.000
Digital Taxation \rightarrow Customs Ports Sustainability	0.253	0.256	0.047	5.370	0.000

The effect Digital Taxation and Digital Accounting on Customs Efficiency and Customs Ports Sustainability are examined. The beta coefficients, t-values, and p values show the magnitude and direction of these connections. A positive beta coefficient and a low p value, for example, point to a strong positive relationship between the variables. Thus, *H1*, *H2*, *H3* and *H4* are accepted.

6. Discussion

This paper explores the impact of digital taxes and accounting on the sustainability of customs ports and the efficiency of customs operations, providing crucial insights into the game-changing potential of new technologies in the field of customs operations. The four assumptions that make up the study model highlight the significant and advantageous impact that digital technologies have on the sustainability and effectiveness of customs. However, this study found that digital taxation significantly and positively impacts Customs Efficiency aligns with prior research (Bisogno et al., 2015). Digital taxation reduces administrative load on customs officials by streamlining compliance inspections and simplifying tax-related activities. The accuracy and efficiency of tax-related activities are improved by automation, which also boosts total customs efficiency. In addition, digital accounting has a significant and positive effect on Customs Efficiency. The research corroborates earlier studies (Liu et al., 2023a, 2023b) by highlighting that digital accounting significantly enhances Customs Efficiency. The implementation of digital accounting systems streamlines customs processes and improves data accuracy, thereby expediting operations and reducing the likelihood of errors. These advancements contribute to a more efficient customs ecosystem. This paper reveals a solid connection between digital taxes and the sustainability of Customs Ports (Ababneh et al., 2023). At customs ports, digital taxation creates a sustainable trading environment by encouraging regulatory conformity and financial transparency. The results demonstrate that digital taxes are essential for coordinating customs operations with sustainability goals. In addition, the results support the idea that digital accounting has a favorable impact on the sustainability of Customs Ports (Alsharari & Ikem, 2023). Digital accounting supports openness and traceability by offering strong audit trails and realtime reporting, which is in line with sustainability goals. Digital accounting improves data quality and dependability, which helps sustain customs operations. However, this study highlights the profound influence of digital accounting and taxation on customs processes. By automating procedures and lightening the administrative load, embracing this technology improves Customs Efficiency. Additionally, these technological developments integrate customs operations with sustainability objectives, improving revenue administration and strengthening the ecosystem of global commerce. This investigation lays the groundwork for future investigation into the wide-ranging effects of digital technology integration on commerce and sustainability.

7. Conclusions

The revolutionary potential of digital taxes and accounting in the context of customs operations, customs efficiency, and the sustainability of customs ports has been highlighted by this study. A thorough examination and empirical inquiry produced numerous important discoveries. First, by automating compliance checks and streamlining tax-related activities, digital taxation dramatically improves customs efficiency. Additionally, it supports the goals of Customs Ports Sustainability by fostering a sustainable trading environment at customs ports. In a similar way, digital accounting greatly increases the efficiency of customs by reducing procedures and improving data quality. Additionally, this study has broad ramifications, adopting digital taxes and accounting technology may improve operational effectiveness, decrease administrative load, improve compliance, and increase sustainability for businesses and customs agencies. Through these technologies, sustainable trade practices are encouraged, contributing to worldwide initiatives for ethical and environmentally friendly trade. In addition, this study mainly concentrated on theoretical underpinnings and actual data up to the present. To guarantee that the findings are current and applicable, future study should consider more recent developments in technology and legal frameworks. By presenting actual proof of the beneficial benefits of digital taxes and accounting on the sustainability of customs ports and customs efficiency, this study adds to the body of current knowledge. It provides a strong framework for future research into the application of digital technology in customs procedures and their effects on sustainability and global commerce. Additionally, the entire extent of the influence of digital taxation and accounting on customs operations is still not fully understood. Future studies should go more into these topics, looking at the specifics of their use, the obstacles to acceptance, and the long-term effects on sustainability and international commerce. Future study should concentrate on examining the dynamics of digital taxes and accounting in the context of growing technology, shifting trade landscapes, and new regulatory frameworks, building on the results and highlighted gaps. More information on boosting efficiency and sustainability in customs operations may come from researching the use of blockchain, artificial intelligence, and big data analytics. However, there is significant potential for improving customs efficiency and customs port sustainability through the integration of digital taxes and accounting into customs operations. Customs officials and companies may create a more effective, transparent, and sustainable global commerce environment by embracing these technologies.

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