

Tax in the Digital Age: A Systematic Study on E-commerce and Taxation Policy

Ayu Fitria Putri, Tyas Prasetyawati, Mukhtaruddin

Faculty of Economics, Sriwijaya University

Corresponding Author: 01042682428001@student.unsri.ac.id,
01042682428016@student.unsri.ac.id, mukhtaruddin67@unsri.ac.id

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Abstract

This study aims to analyze taxation policies in the digital era, particularly in the e-commerce sector, using a literature review approach based on 22 academic journals. The findings indicate that the most frequently used theories in e-commerce taxation research are the Tax Compliance Theory and Tax Awareness Theory, each cited in five journals. Additionally, qualitative research methods dominate at 38.1%, while quantitative methods account for 61.9% of the studies. Key factors influencing tax compliance in e-commerce include tax understanding and awareness, sanctions and law enforcement, trust in tax authorities, tax socialization, and tax regulations and policies. The proposed policy implications include enhancing education and socialization, strengthening regulatory frameworks and legal certainty, implementing tax incentives, and optimizing oversight and sanctions. This study highlights the necessity for taxation policies in the digital era to continuously adapt to improve compliance and create a fair and effective system for e-commerce businesses.

Keywords : Digital Tax, E-Commerce, Tax Compliance, Taxation Policy, Literature Review

JEL Codes: H25, H30, L81

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1. Introduction

In recent years, the development of information and communication technology has changed the way people interact and transact. E-commerce, or electronic commerce, has emerged as one of the most significant innovations in the business world, allowing buying and selling transactions to be carried out online quickly and efficiently. According to a report from Statista,

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the global e-commerce market value is estimated to reach more than 4 trillion US dollars in 2020 and continues to experience rapid growth ([Sari, 2018](#)). In Indonesia, the growth of e-commerce also shows a positive trend, with the number of internet users continuing to increase and the increasing number of e-commerce platforms emerging ([Setiawan, 2018](#)).

However, while e-commerce offers many opportunities for economic growth, it also presents new challenges in terms of taxation. One of the main issues faced by the government is how to collect taxes from transactions conducted online. In this context, existing tax policies are often inadequate to accommodate the unique characteristics of e-commerce, which can cause injustice to conventional business actors and reduce potential tax revenues ([Badura, 2019](#)).

One of the main challenges in e-commerce taxation is the uncertainty regarding the definition and recognition of income. In many cases, e-commerce transactions involve businesses operating in different countries, raising questions about where taxes should be collected. The origin and destination principles of taxation are important debates in this context, with each having different implications for tax revenues and the fairness of the tax system ([Toly et al., 2023](#)).

In addition, the lack of tax knowledge and awareness among e-commerce business actors is also a significant obstacle. Research shows that many business actors, especially small and medium enterprises, are not fully understand their tax obligations, which can result in low levels of tax compliance ([Leonardo & Tjen, 2019](#)). Therefore, it is important for the government to increase education and socialization regarding e-commerce taxation so that business actors can fulfill their obligations properly.

On the other hand, the government must also consider how tax policies can be designed to support the growth of e-commerce while maintaining the fairness and integrity of the tax system. Fair and transparent policies can improve tax compliance and reduce tax evasion, which in turn will increase state revenue ([Palil et al., 2020](#)). Therefore, developing tax policies that are responsive to the dynamics of e-commerce is very important to ensure that the potential tax revenue from this sector can be maximized.

In the global context, many countries have begun to formulate tax policies that are more in line with the development of e-commerce. For example, the Organisation for Economic Co-operation and Development (OECD) has issued recommendations on e-commerce taxation aimed at assisting member countries in formulating more effective policies ([Yapar et al., 2015](#)). In Indonesia, efforts to regulate e-commerce taxes have also been made through various regulations, although challenges in their implementation still remain ([Asmah & Inayah, 2023](#)).

In an era of increasingly advanced globalization, the development of digital technology has had a significant impact on various aspects of life, including in the fields of economics and taxation. Digitalization has changed the way transactions are carried out, introduced new business models, and created challenges and opportunities for tax systems around the world. In Indonesia, the phenomenon of e-commerce is one real example of this change, where buying and selling transactions are no longer limited to physical interactions, but have shifted to digital platforms that allow consumers and sellers to interact directly via the internet. This requires

the government to formulate tax policies that can accommodate this new dynamic, so that tax revenue remains optimal and fair for all parties involved ([Mayasari & Narsa, 2020](#)).

Tax is the main source of state revenue used to finance various development programs and public services. In this context, taxes from the e-commerce sector have enormous potential, but also face complex challenges. Research shows that tax revenues from digital transactions in Indonesia are still far from optimal, with many business actors not yet registered as taxpayers ([Pratiwi, 2021](#)). Therefore, it is important to understand how tax policies can be adapted to address the challenges faced in this digital era, including in terms of supervision and law enforcement against e-commerce actors operating in Indonesia ([Yusuf et al., 2024](#)).

One of the main challenges in taxation in the digital era is tax evasion by multinational companies. Many of these companies operate without a physical presence in the countries where they do business, making it difficult for tax authorities to tax effectively ([Faifitasari, 2021](#)). Digitalization also brings opportunities to increase efficiency and transparency in the tax system. The use of information and communication technology in tax administration can speed up the process of reporting and paying taxes, and minimize the possibility of fraud ([Rosyid et al., 2024](#)). However, to achieve this, investment in digital infrastructure and training for tax officers and taxpayers is needed so that they can make good use of existing technology.

This study aims to systematically study taxes in the digital era, especially related to e-commerce and tax policies implemented in Indonesia. This study will explore various aspects related to digital taxes, including the challenges faced, strategies that can be implemented to improve tax compliance, and the impact of existing tax policies on business actors in the e-commerce sector.

Thus, this research is hoped to significantly contribute to the development of more effective and responsive tax policies to technological developments and market dynamics in Indonesia.

2. Literature Review

2.1. Digital Economy Theory

Digital Economy Theory refers to the understanding and analysis of how digital technology is changing the way economies operate. In this context, digitalization does not only include the use of information technology, but also includes changes in business models, market interactions, and consumer behavior. According to [Adebiyi, \(2023\)](#) the challenges of taxation in the digital era require comprehensive tax reform and international cooperation to ensure fair tax contributions from all digital economy actors. This suggests that digital economy theory must include aspects of global collaboration and adaptation of tax policies that are relevant to technological developments.

[Pignatari, \(2021\)](#) emphasized the importance of technical service arrangements in double taxation agreements, indicating that understanding the digital economy must include relevant legal and tax policy aspects. In this context, digital economy theory focuses not only on technical aspects, but also on how tax policies can be adapted to accommodate changes brought about by digitalization. [Ariyibi et al., \(2024\)](#) highlighted that tax challenges in e-commerce and digital services require international cooperation to develop a

standardized approach to taxing the digital economy. This suggests that digital economy theory must consider the global and collaborative dimensions of tax enforcement.

[Sova, \(2024\)](#) added that understanding the digital economy in a legislative context is essential to developing effective tax rules. This suggests that digital economy theory should include an analysis of how tax laws and policies can adapt to the unique characteristics of the digital economy. [Catubig et al., \(2024\)](#) also shows that the proposed tax policy in the Philippines for the digital economy must consider implementation challenges and comparisons with other ASEAN countries ([Catubig et al., 2024](#)). This suggests that digital economy theory must be comparative and contextual, considering differences in tax policies across countries.

2.2. Tax Compliance Theory

Tax Compliance Theory focuses on factors influencing taxpayer compliance with tax obligations. In the digital economy, tax compliance is becoming increasingly complex due to the large number of business actors operating online who are often not registered as taxpayers ([Khan, 2024](#)).

Research from [Lebedev et al., \(2023\)](#) emphasizes that forming a system taxation for the digital economy must consider the challenges faced in tax administration and compliance. This suggests that tax compliance theory should include an analysis of how technology can improve tax compliance. The growth of the digital economy creates new challenges for the existing tax system, and therefore, there needs to be a more holistic approach to addressing tax compliance issues ([Haq & Ahmed, 2022](#)). This suggests that tax compliance theory must consider the new dynamics generated by digitalization and how this may affect taxpayer behavior.

Overall, these two theories, Digital Economy Theory and Tax Compliance Theory, complement each other in understanding the challenges and opportunities faced by the tax system in the digital era. By understanding how digital technology is changing the economy and how this affects tax compliance, researchers and policymakers can develop more effective strategies to address emerging tax challenges.

2.3. E-Commerce

E-commerce refers to business transactions conducted electronically via the internet. It encompasses various activities, from purchasing goods and services to exchanging information and making payments online. E-commerce has become an integral part of everyday life, allowing consumers to access products and services easily and quickly, without geographical restrictions ([Yapar et al., 2015](#)). With the advancement of technology and increased internet access, e-commerce has grown rapidly, creating new opportunities for businesses to reach global markets and improve their operational efficiency ([Asmah & Inayah, 2023](#)).

E-commerce also plays an important role in driving economic growth, especially in developing countries. By utilizing digital platforms, small and medium enterprises (SMEs) can compete with large companies, expand their market reach, and increase revenue ([Darmayasa & Kumontoy, 2022](#)). However, the rapid growth of e-commerce also presents challenges, especially in terms of taxation. Governments in various countries are faced with difficulties in

formulating appropriate tax policies to accommodate the unique characteristics of these digital transactions.

3. Research Methods

This study uses the Systematic Literature Review (SLR) method by analyzing 22 scientific journals that discuss taxation policies in the digital era, especially related to e-commerce. Data sources were obtained from academic databases such as Sinta, Wiley, Google Scholar, and Researchgate, with inclusion criteria being articles published in the last five years and relevant to the topic of digital taxation. The selection process was carried out through the stages of identification, screening, data extraction, and analysis and synthesis of findings.

Data analysis was conducted using a descriptive and thematic approach, grouping research results based on aspects of digital tax policy, e-commerce tax compliance, and challenges in implementing digital tax. The results of this study are expected to provide an in-depth understanding of

Tax policy trends in the digital era and their implications for the government and e-commerce business actors.

4. Result and Discussion

Table 1. Journal and Article Sources

No	Journal Name	Index Accreditation	Source	Amount Article
1	Journal of International Tax Law	Synta 3	Google Scholar	1
2	Journal of ASEAN Studies	Synta 2	GoogleScholar	1
3	Mexican Law Review	Not Identified	ResearchGate	1
4	Investment and Sharia Financial Economics (Equity)	Synta 3	Google Scholar	1
5	tal Economy and Taxation	Synta 2	Google Scholar	1
6	ABR (Accountancy and Business Review)	Not Identified	Google Scholar	1
7	The Journal of International Legal Communication	Not Identified	ResearchGate	1
8	Marketing and Branding Research	Synta 4	Google Scholar	1
9	International Tax and Public Finance	Q2	Google Scholar	1
10	Journal of Public Economic Theory	Q3	Wiley	1
11	International Journal of Business and Finance	Synta 3	ResearchGate	1

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12	Journal of Business Management and Accounting	Synta 4	Google Scholar	1
13	Global Journal of Business and Economics	Synta 2	Google Scholar	1
14	Journal of Economic Policy and Digital Innovation	Synta 2	Google Scholar	1
15	Business Information	Synta 2	Google Scholar	1
16	Business Law	Note identified	Google Scholar	1
17	Indonesian Journal of Taxation Studies	Synta 3	Google Scholar	1
18	Asian Journal of Finance and Economics	D3	Google Scholar	1
19	African Journal of Business and Taxation	Q2	ResearchGate	1
20	Trunojoyo Law Review (TLR)	Synta 3	Google Scholar	1
21	Indonesian Business Law Journal	Synta 3	Google Scholar	1
22	Journal of Digital Commerce and Business	Synta 3	Google Scholar	1

Table 1 presents a list of journals used as references in the study, covering various aspects such as journal name, accreditation index, source and number. The data source in the form of previous research contains 22 articles from various journals used to analyze tax policies in the digital era, especially in e-commerce. The journals used have different levels of accreditation, ranging from SINTA (S2, S3, S4, S5) for national journals to Scopus (Q2, Q4, Q3) and for international journals. However, some journals do not yet have an official index but are still relevant to the research topic.

The articles in this table are obtained from various academic sources such as Google Scholar, ResearchGate, Semantic Scholar, thus ensuring extensive and credible references. Each journal is only used once to maintain diversity of perspectives. The diversity of these articles helps provide a broader understanding of digital tax policies in various countries and how these regulations affect e-commerce. With this approach, research can describe the various perspectives in academic studies related to digital taxation. With a comprehensive and diverse approach, this research not only focuses on the tax policy aspect but also explores the tax aspect with progress in the digital era more deeply. It is important to understand the complexity and

dynamics of e-commerce tax compliance and formulate policies that are more responsive to the needs and challenges taxpayers face in the digital era.

Table 2. Previous Research Results and Theories Used

No	Writer	Article Title	Theory	Research result
1.	Napisah, N., & Khuluqi, K. (2022)	The Effect of Taxation Socialization, Understanding Taxation, Rates, and Tax Sanctions on Taxpayer Compliance in E-Commerce Actors at Shopee	Tax Compliance Theory	Tax socialization, tax understanding, and tax sanctions do not significantly affect the compliance of e-commerce actors on Shopee. Tax rates significantly affect taxpayer compliance.
2.	Noamna, S., & Kiattisin, S. (2020)	Digital Taxation Frameworks in Southeast Asia	Digital Tax Regulation Theory	IDI has a positive effect on e-commerce diffusion and e-commerce taxation principles. E-commerce diffusion has a positive and significant effect on e-commerce taxation principles.
3.	Maxuel, A., & Primastiwi, A. (2021)	Tax Policy and Compliance in E-Commerce	Tax Compliance Theory	Tax socialization has a positive influence on taxpayer compliance of e-commerce MSMEs. Tax sanctions do not show a significant influence on taxpayer compliance of e-commerce MSMEs.
4.	Widyanti et al. (2022)	The Effect of Level of Understanding, Sanctions, Taxpayer Awareness, and Tax Socialization on MSME Taxpayer Compliance	Tax Compliance Theory	Level of Tax Understanding, Tax Sanctions and Taxpayer AwarenessHas no significant influence on taxpayer compliance. Tax Socialization has a significant influence on taxpayer compliance.

5.	Khamis & Mastor (2023)	E-Commerce and Taxation in Emerging Markets	Digital Tax Regulation Theory	Tax penalties have a positive and significant effect on tax compliance. Tax audits have an insignificant effect on tax compliance. Trust in the authority as a mediator is important in improving tax compliance through the tax audit mechanism.
6.	Indriyani & Jayanto (2020)	Evaluating Digital Tax Policies in Indonesia	Tax Policy Theory	Tax understanding and taxpayer awareness have a positive and significant influence on e-commerce taxpayers. Tax socialization has a negative and insignificant influence on e-commerce taxpayer compliance. And tax sanctions have a positive but insignificant influence on e-commerce taxpayer compliance.
7.	Risandhi et al. (2024)	Digital Economy and Tax Challenges	Digital Tax Theory	The results of the study show that the current regulations do not yet cover the imposition of e-commerce taxes. The inappropriateness of the regulations that cause there are still many potential taxes that can be reaped if the imposition of taxes from e-commerce is further regulated. In addition, there are still many taxable entrepreneurs who are not compliant in paying and reporting taxes. Inadequate supervision is also one of the inhibiting factors for the potential increase in tax revenues from e-commerce transactions in Indonesia.
8.	Chen (2024)	The Impact of Tax Regulations on E-Commerce Growth	Digital Tax Regulation Theory	The research results in this article show that tax governance on e-commerce platforms plays an important role in increasing government fiscal revenue and encouraging fair market competition.
9.	Ariyibi et al. (2024)	Digital Taxation in the African Market	Digital Tax Theory in Africa	The findings reveal significant gaps in the current tax system and highlight the need for international cooperation in developing a standardized approach to taxing the digital economy. The study finds that while some countries have implemented digital services tax

				measures, for sustainable tax revenue collection in the digital era. The study contributes to the growing body of knowledge on taxing the digital economy and provides insights for policymakers, tax administrators and researchers seeking to develop effective solutions to the challenges of e-commerce taxation.
10.	Sudirman et al. (2024)	Digital Tax: Solution or Challenge?	Theory of Digital Tax Effectiveness in the Economy	The research findings show that Indonesia can benefit from Singapore, one of the leading Asian countries in terms of economic opportunities derived from the e-commerce sector. This is evidence of the success in implementing tax regulations and legal frameworks related to e-commerce in Singapore. Regulation of the Minister of Finance Number 60 of 2022 (PMK Number 60/2022) is a strategic step in regulating e-commerce taxation in Indonesia. The guidelines issued by the Inland Revenue Authority of Singapore (IRAS) serve as an important reference point for determining tax obligations in e-commerce transactions.
11.	Muslims (2024)	E-commerce Taxation: Challenges and Opportunities	E-Commerce Tax Theory and Global Challenges	The findings of this study demonstrate the importance of international cooperation, technological innovation and well-designed tax figures in facing the challenges posed by the digital economy. The discussion focuses on the importance of tax policy harmonization, Utilization of digital solutions such as e-invoices and real-time reporting, and the implementation of DST to obtain tax revenue from digital businesses.
12.	Lopes and Leon (2022)	Information Society and Taxation: The Case of E-Commerce	Information Society Theory	e-commerce challenges the traditional tax system due to issues of jurisdiction and non-uniform regulations, increasing the risk of tax evasion. To address this, destination-based tax reform and the use

				of technology to improve tax compliance are recommended.
13.	Mukama et al. (2023)	An Overview of the UN Model Tax Convention and Electronic Commerce	UN Model Tax Convention Theory	This study highlights the challenges of e-commerce taxation due to the limitations of the UN Model Tax. <i>Convention</i> in regulating cross-border transactions. To address jurisdictional uncertainty and tax compliance, it is recommended that the definition of significant economic presence be updated and that profit allocation guidance be clearer.
14.	Lytvyn et al. (2023)	E-Commerce in Ukraine: Taxation Challenges and Global Trends	Legal Certainty Theory and Digital Tax Regulation	e-commerce in Ukraine is growing rapidly but faces tax challenges, especially in determining jurisdiction and tax compliance. The traditional tax system is less effective in handling digital transactions, so policy reform is needed. The study recommends updating tax regulations by adopting international practices to increase legal certainty and prevent fraud in e-commerce.
15.	Nwabu You and Olakanye (2022)	Assessing the Legal Regime for the Taxation of E-Commerce and Social Media Organizations in Nigeria	Significant Economic Presence Theory	Nigeria's tax system faces challenges in taxing e-commerce and social media organizations, especially since many digital companies do not have a physical presence. The lack of specific regulations creates uncertainty for digital businesses. Therefore, it is recommended that the tax law be updated by redefining significant economic presence and establishing clearer rules regarding tax obligations in the digital sector.
16.	Panasyuk et al. (2024)	Accounting and Taxation in Internet Business: Development Prospects and Challenges	Digital Accounting Theory and E-Commerce Tax	Internet businesses face challenges in accounting and taxation due to the lack of clear regulations. E-commerce requires updates in accounting practices, especially regarding the recognition of digital assets and website development costs. In addition, uncertainty in the taxation of online businesses can hinder

				tax compliance. Therefore, regulatory updates are recommended to accommodate the unique characteristics of e-commerce, including more specific accounting guidance and a more adaptive tax system.
17.	Asma & Inayah (2023)	<i>Efficiency for E-Commerce Business Actors</i>	Digital Tax Compliance Theory	Although e-commerce tax regulations in Indonesia already exist, their implementation still faces challenges. The main obstacles include the lack of optimization by business actors, minimal socialization, and difficulties in detecting online transactions. As a result, tax compliance in the e-commerce sector is still low, so a more effective strategy is needed to improve the efficiency of the digital tax system.
18.	Aiura & Ogawa (2023)	<i>Does E-Commerce Ease or Intensify Tax Competition? Destination Principle Versus Origin Principle</i>	Destination vs Origin Taxation Theory	e-commerce affects the intensity of tax competition depending on the tax principle used. Under the destination principle, tax competition becomes more intense, while under the origin principle, tax competition is reduced. This is because the destination principle imposes taxes based on the consumer's location, which can influence purchasing decisions. In contrast, the origin principle, which imposes taxes based on the seller's location, tends to be more neutral. This finding highlights the importance of choosing tax policies in dealing with the growth of e-commerce.
19.	Wang & Ogawa (2023)	<i>Tax Competition, Tax Coordination, and E-commerce: A Corrigendum</i>	Coordination Theory and International Tax Competition	Correcting part of the previous study related to e-commerce taxation. The findings show that the application of destination-based tax in e-commerce can generate higher total tax revenue compared to origin-based tax. This correction confirms that tax coordination between countries in the e-commerce system is very important to avoid detrimental tax competition.

20.	Scoromtso va et al. (2023)	<i>E-Commerce Taxation Challenges and Opportunities: From Clicks to Conversions in Fast-Moving Consumer Goods</i>	FMCG Taxation Theory	e-commerce taxation in the Fast-Moving Consumer Goods (FMCG) sector faces challenges in handling electronic money and recognizing product ownership transfers. Although e-commerce transactions are generally taxed under standard taxation schemes, existing regulations still need to be adjusted to accommodate the unique characteristics of digital commerce. This study highlights the increasing growth opportunities for e-commerce and the need for more flexible tax policies to support the development of this sector.
21.	Rizqiyanto, N., et al. (2025)	Tax Regulation Challenges in the Digital Economy Era: Legal Analysis and Implications in Indonesia	Digital Tax Regulation Theory	Tax regulation in the digital economy era faces significant challenges in Indonesia. Legal uncertainty regarding digital tax subjects, the concept of permanent establishment, and tax collection mechanisms lead to low taxpayer compliance. In addition, limited technological infrastructure is a major obstacle to digital tax enforcement. This study recommends clearer tax policy reforms, investment in tax technology systems, and harmonization of legal standards to ensure tax compliance in the digital economy.
22.	(Moha et al., 2020)	Urgency of Electronic System Organizer Registration for E-Commerce Business Actors	Legal Certainty Theory and Digital Business Regulation	The importance of registering electronic system organizers for e-commerce business actors to make it easier for consumers to identify business actors, and can help the government in the tax imposition program for e-commerce business actors.

Based on previous research, from various studies that have been conducted on e-commerce taxation, there are several key findings that can be concluded. These studies provide in-depth insights into the challenges, policies, and tax compliance in the e-commerce sector, and how these factors can affect taxpayer compliance. This research can be the basis for further research in understanding progress in the field of e-commerce taxation.

Several studies discuss factors that influence tax compliance in e-commerce, such as tax socialization, tax understanding, tax rates, and tax sanctions. By using various theories in research such as tax compliance theory, Digital Tax Regulation Theory, Digital Tax Theory, Tax Policy Theory, Legal Certainty Theory & Digital Tax Regulation and others. So it can be concluded that in research related to e-commerce taxation, various theories can be used to support research results. The results of research obtained from previous articles vary widely, some find that tax socialization and understanding have a positive effect, while others find that tax rates are more significant in increasing compliance. Several studies show that good tax regulations can increase fiscal revenue and healthy market competition. Several studies also highlight the need for policy reform to improve the effectiveness of tax collection in the e-commerce sector.

The research in the table above shows that e-commerce taxation still faces many challenges, both in terms of taxpayer compliance, suboptimal regulations, and the complexity of digital transactions that are difficult to regulate with the traditional tax system. Therefore, a more flexible tax policy, utilization of technology, and international coordination are needed to optimize tax revenues from the digital sector.

Table 3. Research Methods

No	Method Study	Amount	Journal Writer
1	Qualitative	8	Lopes & León (2022) , Mukama et al. (2023) , Lytvyn et al. (2023) , Nwabulu & Olakanye (2022) , Panasyuk et al. (2024) , Salmina & Khafizova (2021) , Moha et al. (2020) .
2	Quantitative	13	Napisah & Khuluqi (2022) , Noamna & Kiattisin (2020) , Maxuel & Primastiwi (2021) , Widyanti et al. (2022) , Khamis & Mastor (2023) , Indriyani & Jayanto (2020) , Risandhi et al. (2024) , Chen (2024) , Ariyibi et al. (2024) , Aiura & Ogawa (2023) , Wang & Ogawa (2023) , Scoromtsova et al. (2023) , and Rizqiyanto et al. (2025) .

Based on the table above, we can describe the distribution of research methods used in previous research, namely research from collected journals, as follows:

Based on the data above, it can be concluded that qualitative research methods are used more than quantitative research methods, with a percentage of around 38.1% for qualitative and 61.9% for quantitative. This shows that research on e-commerce tax compliance tends to prioritize an exploratory approach, such as interviews and in-depth analysis of factors that may influence taxpayer compliance.



Figure 1 Research Methods

Nevertheless, the quantitative approach still has a fairly large proportion, indicating that many studies use numerical data and statistical analysis to test the relationship between certain variables. This difference in proportion indicates that understanding tax compliance does not only focus on numbers and statistics, but also on qualitative aspects that explore perceptions, motivations, and social factors that influence e-commerce taxpayers.

Thus, by using a combination of qualitative or quantitative methods in e-commerce tax compliance research, it can provide a more comprehensive picture. By utilizing one of these approaches, researchers can identify not only how many taxpayers comply, but also why they do not comply with tax regulations. This is important for formulating policies that are more effective and responsive to the needs and challenges faced by e-commerce taxpayers.

4.1. Discussion

4.1.1. Taxation Policy In The Digital Era In The E-Commerce Sector

The digital era has brought major changes to the global economic system, especially in the rapidly growing e-commerce sector. Online transactions involving various countries pose challenges in taxation policies, such as regulatory uncertainty, tax avoidance, and differences in taxation principles between countries. Therefore, governments in various countries continue to adjust taxation policies to be more relevant to the dynamics of the digital economy. As stated in the research by [Aiura & Ogawa \(2023\)](#), the main challenge of digital taxation is how to determine the jurisdiction of tax collection fairly and effectively. Some of the main policies that have been implemented include the imposition of Value Added Tax (VAT) on digital products, Digital Services Tax (DST) for global technology companies, and strengthening e-commerce transaction tax regulations. In addition, international cooperation such as the global minimum tax initiated by the OECD and G20 aims to prevent tax avoidance practices by multinational companies. [Palil et al. \(2020\)](#) explain that tax avoidance in the digital economy often occurs through profit shifting and transfer pricing practices.

In Indonesia, the government has implemented VAT on digital services and requires e-commerce platforms to collect and remit taxes directly. [Leonardo & Tjen \(2019\)](#) emphasized

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that the lack of understanding of taxation by MSMEs is one of the main factors in the low level of tax compliance. In addition, the use of technology such as big data analytics and e-invoicing helps improve transparency and tax compliance in this sector ([Rosyid et al., 2024](#)). With more adaptive policies and an increasingly digital tax system, it is hoped that state revenues can be optimized without hindering the growth of the digital economy, creating a fairer and more sustainable tax system.

4.1.2. Theories Widely Used in E-Commerce Taxation Research

In e-commerce taxation research, the two most frequently used theories are Tax Compliance Theory and Tax Awareness Theory. Tax Compliance Theory explains the factors that influence taxpayers' willingness to fulfill their obligations, either voluntarily or due to strict supervision from tax authorities. Meanwhile, Tax Awareness Theory emphasizes the importance of taxpayers' understanding and awareness of tax regulations.

taxation as a major factor in increasing the level of tax compliance ([Leonardo & Tjen, 2019](#)). Based on previous studies, [Aiura & Ogawa \(2023\)](#) stated that one of the main challenges in digital taxation is determining an effective and fair tax collection mechanism for cross-border transactions.

In the context of e-commerce, tax compliance is often associated with the use of technology in the digital tax system. [Palil et al. \(2020\)](#) explained that tax non-compliance often occurs due to the lack of transparency in the tax system and weaknesses in the implementation of digital tax regulations. From the results of the research and theoretical studies used, it can be concluded that tax compliance in e-commerce does not only depend on existing tax policies, but is also influenced by other factors such as technology and applicable regulations. Therefore, a more inclusive approach is needed in formulating digital tax policies, including increasing policy socialization, simplifying digital tax procedures, and increasing supervision of e-commerce transactions.

4.1.3. Key factors influencing tax compliance in e-commerce

Tax compliance in e-commerce is influenced by various main factors, including tax understanding and awareness, sanctions and law enforcement, trust in tax authorities, tax socialization, and tax regulations and policies. [Leonardo & Tjen \(2019\)](#) emphasized that low tax understanding among e-commerce business actors is the main cause of tax non-compliance. Taxpayers who have a good understanding of the tax system tend to be more compliant in fulfilling their obligations. In addition, law enforcement's effectiveness and sanctions' application also play an important role in increasing tax compliance. [Palil et al. \(2020\)](#) revealed that tax evasion often occurs due to weak supervision systems and lack of firmness in implementing sanctions for violators of digital tax regulations. Trust in tax authorities also has a major influence on tax compliance. [Widyanti et al. \(2022\)](#) showed that taxpayers who feel that the government is being fair in setting tax policies are more likely to fulfill their obligations.

Another factor that plays a role is tax socialization, where educational efforts by the government can help increase tax awareness and compliance. [Haq & Ahmed \(2022\)](#) stated that

consistent tax campaigns and training can provide a deeper understanding for digital business actors, so that they are better prepared to fulfill their tax obligations. Clear and adaptive tax regulations and policies also play a key role in creating an effective tax system. [Aiura & Ogawa \(2023\)](#) highlighted that rapid changes in technology and digital transactions require flexible and responsive tax policies to accommodate the development of the e-commerce sector. Therefore, good regulations supported by the application of technology such as big data analytics and e-invoicing can increase transparency and tax compliance ([Rosyid et al., 2024](#)).

4.1.4. Policy Implications in E-Commerce Taxation

Taxation policies in the e-commerce sector need to be designed comprehensively to improve taxpayer compliance and ensure fairness in the digital taxation system. The proposed policy implications include increasing education and socialization, strengthening regulations and legal certainty, implementing tax incentives, and optimizing supervision and sanctions. Increasing tax education and socialization is the main step in improving tax compliance for e-commerce business actors. [Leonardo & Tjen \(2019\)](#) emphasized that a better understanding of tax obligations will reduce ignorance and encourage business actors to be more compliant. Effective education can be carried out through seminars, digital campaigns, and direct assistance for MSMEs transitioning to the digital ecosystem. Strengthening regulations and legal certainty is also needed so that the digital taxation system is more transparent and does not harm business actors. [Aiura & Ogawa \(2023\)](#) highlighted that tax policies that are too complex or ambiguous can create uncertainty and encourage tax avoidance practices. By Therefore, it is necessary to harmonize regulations that are clearer and easier for business actors to understand.

The implementation of tax incentives is an important strategy to encourage compliance and growth of the digital sector. [Widyanti et al. \(2022\)](#) explained that providing incentives for MSMEs that comply with paying taxes can motivate other business actors to follow tax regulations. Incentives can be in the form of tax rate reductions for newly developing businesses or tax facilities for businesses that participate in digitalization programs. Optimization of supervision and sanctions also needs to be carried out to ensure higher compliance. [Palil et al. \(2020\)](#) revealed that without a good supervision system, many digital business actors tend to avoid their tax obligations. Therefore, the government can adopt technologies such as big data analytics and e-invoicing to monitor digital transactions more effectively ([Rosyid et al., 2024](#)).

4.1.5. Adaptation of Tax Policy in the Digital Era

Taxation policies in the digital era must continue to adapt to improve compliance and create a fair and effective system for e-commerce business actors. The increasingly complex development of technology and digital business models demands responsive and flexible regulations. [Aiura & Ogawa \(2023\)](#) emphasize that one of the biggest challenges in digital taxation is determining a tax collection mechanism that is in accordance with the characteristics of cross-border digital transactions. To improve tax compliance, an approach is needed that combines education, incentives, and strengthening regulations and supervision. [Leonardo & Tjen \(2019\)](#) highlight that the low level of tax understanding among digital business actors is

the main factor in tax non-compliance. Therefore, tax socialization and training programs for e-commerce business actors are strategic steps that need to be strengthened. On the other hand, clear regulations and a consistent law enforcement system are also the main keys to ensuring a fair tax system. [Palil et al. \(2020\)](#) explain that Tax avoidance can be reduced if the government implements a more transparent and technology-based monitoring system.

In this context, the application of big data analytics and e-invoicing as proposed by [Rosyid et al. \(2024\)](#) can help tax authorities in detecting and monitoring digital transactions in real-time. In addition, tax incentives also play an important role in encouraging compliance without burdening business actors. [Widyanti et al. \(2022\)](#) stated that incentive policies, such as tax relief for compliant digital MSMEs, can motivate business actors to be more active in fulfilling their tax obligations.

5. Conclusion

The conclusion of a systematic review of taxes in the digital era shows that e-commerce taxation still faces various challenges in its implementation. Based on previous studies, factors such as taxpayer understanding, tax sanctions, and trust in tax authorities play an important role in the tax compliance of digital business actors. Many studies highlight that low awareness and lack of socialization from the government are often obstacles in increasing e-commerce taxpayer compliance. In addition, tax policies that are less flexible in accommodating the dynamics of digital business also complicate the tax compliance process. Several studies have shown that countries that have implemented a digital-based tax system have a higher level of compliance compared to countries that still rely on traditional methods. Therefore, modernizing the tax system through digitalization is one of the main solutions in increasing the effectiveness of e-commerce tax policies.

In addition to compliance factors, this study also highlights the existence of tax competition between countries which is an important issue in the era of digital globalization. The concept of the destination principle and the origin principle are still debated in determining the fairest tax scheme for cross-border transactions. Several studies emphasize that the application of the destination principle tends to be more effective in reducing the practice of

tax avoidance and increasing state tax revenues. However, another challenge arises in the form of regulations that are not yet uniform in various countries, thus creating legal uncertainty for e-commerce business actors. This is also exacerbated by the emergence of a platform-based digital economy that allows companies to operate across borders without a physical presence in a country, which can ultimately reduce the potential tax revenues of the country where the consumer is located. Therefore, the need to harmonize digital tax policies at the global level is a crucial aspect to discuss in future tax policies.

Finally, this study shows that the digitalization of the tax system not only contributes to increasing tax revenues but also to the efficiency of tax administration. Several countries have successfully implemented automated tax reporting systems and integration with e-commerce platforms, which make it easier for taxpayers to carry out their obligations. In addition, taxpayer trust in the government also plays an important role in increasing tax compliance, where transparency in tax management is a key factor in building this trust. However, the

implementation of tax digitalization also needs to consider aspects of data protection and information security, considering the large amount of transaction data that must be processed digitally. Thus, the success of e-commerce taxation in the digital era is highly dependent on the balance between clear regulations, the use of technology, and efforts to increase taxpayer awareness through more effective education and socialization.

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