DIGITAL ECONOMY AND GREEN TAXATION

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BEING A PROJECT SUBMITTED TO THE DEPARTMENT OF ACCOUNTING, FACULTY OF MANAGEMNT SCIENCES, UNIVERSITY OF BENIN, BENIN CITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF POST GRADUATE DIPLOMA (PGD) IN ACCOUNTING

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DECLARATION

I, Abigail Osarugue Oviawe hereby declare that:

This project is a study carried out by me in the Department of Accounting, Faculty of Management Sciences, University of Benin, Benin City under the supervision of Dr. Timothy Oboh, of the Department of Accounting Faculty of Management Sciences, University of Benin, Benin City, Edo State, Nigeria.

To the best of my knowledge, this work has not been submitted for the award of any degree elsewhere. All the ideas and views are the product of my personal research efforts. All references made to the works of others were duly acknowledged. I shall solely and completely be accountable for any liability that may arise from this study and not that of my supervisors, the Department and the University.

_____ _____

ABIGAIL OSARUGUE OVIAWE Date

CERTIFICATION

This is to certify that this research work titled “Digital Economy and Green Taxation ” was carried out by Oviawe Osarugue Abigail with matriculation number PG/MGS/ 2216098 under our supervision in the Department of Accounting, Faculty of Management Sciences, University of Benin, Benin City, and it is considered adequate in scope and quality in partial fulfillment of the requirements for the award of Post Graduate Diploma in Accounting.

_____ _____

Dr. Timothy Oboh, Date
(Supervisor)

_____ _____

Prof. O. Obaretin Date
(Head of Department)

DEDICATION

I dedicate this research work to God Almighty in recognition of His grace and mercy that has been a beacon of strength throughout my Post Graduate Diploma journey. Also to my beloved husband Mr Victor Etubi for his support and constant encouragement God bless you Sir.

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ABSTRACT

The broad objective of this study is to determine the link between board diversity and firm financial performance of quoted manufacturing industry in Nigeria the specific objectives are to evaluate how board gender affect financial performance of quoted manufacturing industry in Nigeria, ascertain the extends to which board professional background affect financial performance of quoted company in Nigeria and to examine the relationship between board ethnicity and financial performance of quoted manufacturing company in Nigeria. The relevant data for the study covers a period of 6 years (2018 to 2023) all manufacturing company Nigeria. This study employs the descriptive statistics, ordinary least square (OLS) multivariate regression analysis. Base on the result it could deduce that there is a relationship between board diversity and firm financial performance. On the other hand, Board gender diversity and board ethnicity was statistically insignificant at 5% level. While board educational background and board age were not statistically significant at 5% level.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Since the beginning of the era of artificial intelligence (AI), the digital economy has become a key issue for both theoreticians and practitioners worldwide. It is the broad range of economic activities that use digitized information and knowledge as key factors of production. Derived from the incessant changes that have taken place in information and communications technology (ICT), the digital economy is based on various forms of technology, such as the Internet of Things (IoT), AI, and blockchain (Nguyen, 2023).

A growing number of technologies, such as the "Internet of Things", artificial intelligence (AI), virtual reality, blockchain, self-driving cars, and other forms of technology, has contribute to the growth of the digital economy in recent time. Consumers have more access to information than they used to have, not just from manufacturers and business owners, but also from other consumers in forums and reviews in order to be able to make informed purchase decisions in the future (Nguyen, 2023).

Asia’s digital transformation is already having a massive impact on the region’s economies. Asia’s e-commerce transactions account for 25% of the business to consumer (B2C) market in the world, led by the People’s Republic of China (PRC), where companies like Alibaba and Tencent have grown at a break-neck pace. The transaction volume of the PRC’s retail e-commerce market has increased from CNY1.32 trillion in 2013 to CNY5.33 trillion in 2016, with an estimated CNY7.57 trillion in 2017 (World Bank, 2024).

In the past decades, technology has proved to constitute one of the pillars of economic growth. This is why the adoption of new technologies (e.g., business intelligence, cloud computing, social media) has deeply transformed economic activity all over the world. As most companies and countries are massively investing in technology, they embrace the digital economy with open arms (Toma et al., 2023)

The digital economy has increasingly come of age and all industries have undergone profound digital transformations. The COVID-19 pandemic forced organizations, irrespective of their size and sector, to enter the digital world (Word Economic Forum, 2023). In this respect, 53% of the enterprises operating in the European Union (EU) made important steps in becoming more digital in 2022 (European Investment Bank, 2023). However, there are appreciable differences between countries within the EU. As an EU Member State, Romania has made little progress in becoming more digital (European Commission (EC), 2023c).

Green taxation was designed to internalize the external costs associated with environmental degradation. The green taxation incentivize reductions in pollution and resource consumption by making environmentally harmful activities more expensive. In Nigeria, these taxes take various forms, including carbon taxes, waste management fees, and levies on non-renewable energy sources (Sergey, Satsita & Aminat, 2024).

Nigeria has recognized the importance of green taxation as part of its commitment to sustainable development goals (SDGs). The government has begun exploring various forms of environmental taxation to address issues such as air pollution, deforestation, and climate change. For instance, the introduction of a carbon tax is being considered as a means to reduce greenhouse gas emissions from industrial activities (Mpofu, 2023).

The Nigerian government has also implemented policies that encourage renewable energy use through tax incentives. These initiatives aim to promote investments in solar energy and other renewable sources, thereby reducing reliance on fossil fuels (Garba I. 2017). Additionally, there are discussions around enhancing existing tax frameworks to better capture revenues from sectors contributing significantly to environmental degradation.

According to World Bank (2024) effective implementation of digital economic strategies streamlines tax collection processes by automating tasks, leveraging data analytics for better compliance monitoring, enhancing accessibility for taxpayers, reducing administrative costs through e-government initiatives, enabling real-time reporting mechanisms, and fostering trust through increased transparency**.**

Gajendra and Roop (2017) stated that digital economy provides valuable insights into environmental impacts by enhancing data collection and analysis capabilities, enabling predictive modeling, fostering transparency and accountability among stakeholders, and informing tax policy decisions aimed at promoting sustainability**.** As technology continues to evolve, its role in shaping environmentally conscious economic policies will likely expand further. Digital economy significantly enhances the collection of taxes on e-commerce transactions while simultaneously reducing opportunities for tax evasion and promoting sustainability initiatives among businesses and consumers alike. By leveraging technology such as data analytics, automated reporting systems, and international cooperation on taxation standards, governments can create a fairer system that benefits society as a whole (World Bank, 2021).

1.2 Statement of the Research Problem

Financial technologies have given rise to new ways of delivering financial services, particularly in facilitating payment and lending, promoting financial inclusion in many developing Asian countries. Fintech-based lending in Asia reached $102.8 billion in 2015 while the proliferation of technologies further improved the efficiency of the payments system and strengthened Asia's position as the largest payments market in the world. Furthermore, digitized, networked, and intelligent information and communications technologies (ICTs) enable modern economic activities to be more flexible, agile, and smart. While Asia continues to benefit from this digital transformation, understanding the digital economy remains a challenge because of its complexity. Digital transformation is about not only big data and digital platforms but also how those advanced technologies can be utilized to maximize opportunities for innovation, new business models and processes, and smart products and services. Further, the digital economy is allowing regional businesses to move away from the local and into the global, in keeping with the long-term trends toward market liberalization and reduced trade barriers (World Bank 2024).

The digital economy has the potential to radically change the social environment and economic activities of any country in the world (world bank, 2024). It is already experiencing high growth, rapid innovation, and broad application to other economic sectors. In 2021, the digital economy represented 10.3% of the gross domestic product (GDP) in the United States of America (USA) or $2.4 trillion (Bureau of Economic Analysis, 2022). At a global level, the digital economy made up more than 15% of the global GDP in 2022 (Devi, 2023).

In 2023, the Nigerian government introduced new tax rules, including Green Taxes on Single-Use Plastics (SUPs) and increased excise duties on various items. The Green Tax, a 10% excise duty, applies to SUPs like plastic containers, films, and bags. Additionally, excise

duty increases ranging from 20% to 100% were implemented for alcoholic beverages, tobacco, wines, spirits, and vehicles but suspended till end of 2023 (Efuntade, et al., 2023).

In 2024, Nigeria made significant strides in implementing green taxation as part of its broader fiscal policy initiatives aimed at addressing environmental concerns and promoting sustainable practices. The government introduced several measures that reflect a commitment to environmental sustainability through taxation. This study will be carry out to examine the impact of digital economy on the green taxation in Nigeria.

1.3 Research Question

1. How does digital economy increase green taxation efficiency
2. How does digital economy provide data-driven decision-making
3. How does digital economy facilitate the collection of taxes on e-commerce transaction
4. How does digital economy reduced tax evasion and promote sustainability in Nigeria.

1.4 Objective of the Study

The major objective of this study is to examine the positive impact of digital economy on green taxation. The specific objectives are to:

1. evaluate if digital economy in Nigeria has Increased taxation efficiency
2. examine if digital economy has contributed to data-driven decision-making in the Nigeria green tax system
3. to examine if digital economy facilitate the collection of taxes on e-commerce transactions
4. Find out if digital economy reduced tax evasion and promote sustainability in Nigeria.

1.5 Hypothesis of the Study

The following hypotheses stated in a null form shall be tested: taxation efficiency, data-driven decision-making, facilitating e-commerce transactions and reduced tax evasion and promote sustainability

i. digital economy does not Increased taxation efficiency in Nigeria
ii. digital economy does not contributed to data-driven decision-making in the Nigeria green tax system
iii. digital economy does not facilitate the collection of taxes on e-commerce transactions
iv. digital economy does not reduced tax evasion and promote sustainability in Nigeria.

1.6 Significant of the Study

Government: For the Nigerian government and policymakers, this study provides empirical evidence on how taxation policies can be optimized to reduce income inequality. The digital economy represents a shift towards data-driven economic activities that can enhance productivity while potentially reducing environmental impacts. By studying how the digital economy interacts with green taxation, government can identify ways to promote economic growth without exacerbating environmental degradation and also help to addressing climate change challenges

Policy maker: Understanding the relationship between the digital economy and green taxation helps policymakers design effective regulations that leverage technological advancements to achieve environmental goals. It will enlighten policy maker to make policy that will contributes to building economic resilience.

Tax Authorities (Federal Inland Revenue Service and State Revenue Boards): For tax authorities, particularly the Federal Inland Revenue Service (FIRS) and state revenue boards,

this study will provide a deeper understanding of the effectiveness of digital economy on the various taxes and how it can help to addressing income inequality. It will highlight areas where tax enforcement and compliance could be improved. The findings could also inform the design of more efficient tax collection systems that reduce tax evasion and avoidance.

Academics and Researchers: For academics and researchers, this study will make a valuable contribution to the body of knowledge on impact of digital economy on green taxation in developing countries, particularly Nigeria. It will provides empirical data that can be used for further studies and comparative analyses with other countries facing similar taxation.

1.7 Scope of the Study

The focus of this study is to investigate the impact of digital economy on the green taxation in Nigeria. This study focus on digital economy effect in the green taxation in four area (taxation efficiency, data-driven decision-making, facilitating e-commerce transactions and reduced tax evasion).. This longitudinal research will span the 15 years between 2010 and 2024. This time frame is deemed sufficient to cover the long-term changes in the relationship between digital economy and green taxation in Nigeria, as well as the period various green tax policy were forms in Nigeria.

CHAPTER TWO

LITERATURE REVIEW

2.2 Review of Relevant Concept

2.1.1 Concept of Digital economy

The digital economy is based on several components, including technological infrastructure, hardware, software and networks, as well as digital mechanisms through which business and economic are conducted, including e-commerce, and electronic transactions made entirely on the Internet (Saleh, 2023).

The rapid growth of the digital economy has led to the increasing integration of big data, cloud computing, artificial intelligence, and other digital technologies into various real economy sectors (Li, Saide, Ismail & Indrajit, 2021). This can strengthen the edge computing capabilities for specific applications like green development and low-carbon transformation, following the principles of efficiency, greenness, and low emissions. It thereby enables comprehensive digital transformation across agricultural industry value chains, including R&D, production, processing, operations, and management. This transformation provides insights into the green transition process in agricultural development. The Chinese government, in its 14th Five-year Plan period, has also proposed further promoting coordinated digital and green development, using digitization to lead greening, and using greening to drive digitization (Li et al., 2021).

According to Bridget, (2023), the Digital Economy (DE) is the 'oil' of the 21st Century, disrupting established trajectories and unlocking new pathways for rapid economic growth

through innovations in job creation and the provision of access to services. Countries such as Japan, China, and the United States of America have leveraged digital technology development to launch their economies onto a path of sustainable growth. Nigeria has also achieved notable progress in the DE, particularly in Financial Technology (FinTech), internet penetration, e-Commerce development, technology adoption, and more. However, several other DE drivers, such as infrastructural development, the acquisition of requisite educational technology skills, and a lack of robust digital entrepreneurship policies, remain serious concerns.

Muhammad (2019), study revealed that one of the most important movements of the twenty-first century is information and communications technology, its rapid development and spread in the world. Technical technology has become the only language of the world's peoples and the fundamental basis for its dealings, upgrading its progress and development in order to keep pace with the temporal sequences that have ended and facilitate access to information, through

interaction, exchange and participation in the political, economic, social and scientific fields. Clearly, this type of economy depends on information technology, communications, connectivity to the global information network and digital information-sharing services that have dropped and removed all borders and barriers to the flow of information, goods and services, and capital mobility for market access, regardless of where they exist and when the economy is unlimited. The world's conflict has become rapidly accessing information and having the methods of its circulation and analysis to make a sound decision based on accuracy in the formulation of States' economic policy. It must develop techniques and methods that enable them to ensure more consistent access to information. and provides a number of options at all times and in places to ensure their adaptation to international environmental variables through their reliance on the digital economy, s economies, with all

their composition and levels of progress. As a result of this development, the digital economy has become the current and future force of all countries, contributing to the expansion of countries' economic transactions. The world has become a great competitive electronic market and has become a fertile space for countries.

Bui and Nguyen, (2023) stated that digital transformation incorporates new technology into all elements of business and will require the modification of old business models. Similarly, artificial intelligence (AI) is a relatively new disruptive technology with the potential to impact industry and society substantially. Cognitive techniques imitating human behaviour and thought have resulted in advanced analytical models that assist businesses in increasing sales and improving customer engagement, operational efficiency, and service quality by producing new relevant from existing data. These decision-making models are based on descriptive, predictive, and prescriptive analytics. A legislative framework that oversees all digital development uniformly across countries and facilitates a fully regulated digital transformation process is required. However, this regulatory system must not hinder the digital revolution. This study shows that AI and digital transformation will be integrated into various applications and thus used extensively. Nonetheless, the implementation must be carried out in conformity with both standard regulations and the new realities.

According to Chen, Lyulyov, and Pimonenko, (2023), the development of the digital economy has become a new way to respond to the epidemic impact effectively. With the innovative breakthrough of information and communication technology, the digital and real economies are deeply integrated. The digital economy has become an important driving force for the transformation of economic momentum and development. Panel data from 31 provinces in China from 2010 to 2019 were selected for analysis. In the first stage, the study constructed the evaluation index system of digital economy development. Then, the quality development index of the digital economy is calculated by using the entropy method. Finally,

the main factors of digital economy development are analysed by spatial measurement. The research results rove that: (1) the development of China's digital economy in 2010–2019 has gradually increased; (2) the development of the digital economy has a positive correlation between regions and has a spatial spillover effect; (3) the level of economic development, urbanisation, government support, industrial structure, and the level of opening will promote the development of

the digital economy.

2.1.2 Concept of Green Taxation

green taxes is an excise taxes on environmental contaminants or on goods and services whose use contributes to pollution. Green taxes, also known as environmental, pollution, eco and carbon taxes, are meant to advance the environment. Environmental taxation is of great importance in environmental policies. The taxation is used mainly to discourage negative impact on the environment which occurs from the activities of businesses. Due to the dangers of global warming, corporations, governments, and consumers among other stakeholders are becoming aware of the impact of business activities on the environment. Numerous environmental groups have been established to pressurize all stakeholders to act sustainably (Carattini et al. 2017). They are known as environmental, pollution, eco, and carbon taxes and are used to shift the burden of taxation from growth-oriented factors to help in reducing depletion of natural resources and pollution.

Ana and Francisco, (2019) stated that green taxation is commonly used to refer to a package of government measures intended to encourage expansion of low-carbon power, subsidise home insulation and tackle fuel poverty. Additionally, the United Kingdom Government (2012) states that "Environmental taxes are defined as those which meet all of the following three principles: (i) the tax is explicitly linked to the government's environmental objectives;

(ii) the primary objective of the tax is to encourage environmentally positive behaviour change; (iii) the tax is structured in relation to environmental objectives, for example: the more polluting the behaviour, the greater the tax levied.

Moreover, the concept of green taxation is inextricably linked with the concept of Green Tax Reform. This type of tax reform seeks to introduce environmental taxes, thereby replacing

much of the traditional taxation on companies (income and capital), labor income, and contributions to social security systems, in order to reduce unemployment levels (Álvarez et al. 1998; Alves and Palma 2004). Thus, the Green Tax Reforms presuppose the obtaining of a double gain, denominated by effect of the "double dividend. the environmental gain and the reduction of unemployment, by tax relief on labor (Ana & Francisco, 2019).

The implementation of green taxation has not been fully accepted in all countries but is seen to apply in developed nations mostly. Some developing countries are using soft policies such as subsidies for renewable energy. The green taxation policies have faced many challenges mainly due to their negative impact on the economy such as an increased rate of unemployment. However, there are ways of making the reforms applicable without a negative impact on the environment such as by supporting them with complementary policies. Moreover, there is a need for collaboration among all stakeholders, mainly the government, firms and environmental groups, to come up with innovative methods of production. Transportation, tire and other manufacturing industries are the main contributors to environmental degradation. While these industries cannot be eliminated, there are models that can be used to help them remain profitable and sustainable (**Hessa &** Haitham, 2020).

Green taxation encompasses various types of taxes and fees aimed at reducing environmental damage and promoting sustainable practices. These measures can include taxes on carbon

emissions, waste disposal, and resource extraction, as well as tax incentives for renewable energy and other green initiatives.

In March 2023, Nigeria introduced a 10% tax on single-use plastics, but it was later suspended by President Bola Tinubu. This tax aimed to reduce the negative environmental impact of plastics. Besides this specific tax, Nigeria also has environmental taxes related to carbon emissions, and sometimes petroleum profit tax, which is also viewed as environmental tax due to its connection with carbon and energy activities. Value Added Tax (VAT) also applies to the waste management industry

Taxes on Carbon Emissions

A carbon tax, also known as a CO2 tax, is a type of tax levied on the carbon content of fossil fuels or on the emissions of carbon dioxide (CO2). It aims to make polluters feel the economic and social costs of their actions, specifically the costs associated with climate change. In essence, it puts a price on carbon emissions, incentivizing reduced emissions and the adoption of cleaner energy sources (Palacková, 2019).

Izlawanie (2022), a carbon tax is defined as a fixed charge on the carbon content of fossil fuel supply at the point of processing or refining coal, petroleum products and natural gas measured in metric tons of carbon dioxide (CO2) equivalent to tCO2e of a product or process. Carbon taxes are a type of environmental taxes aimed at encouraging a reduction in carbon emissions, growing in popularity around the world.

A carbon tax is a market-based instrument that uses fixed prices on polluters to reduce or eliminate environmental externalities. This approach was first articulated by Arthur C. Pigou in his 1920 book The Economics of Welfare. Pigou advocated the 'polluter pays principle,'

known as the Pigouvian Tax, by levying a tax on a pollutant equal to the cumulative damage to society caused by one more unit of pollution (Palacková, 2019).

Many policymakers have applied the principle in their environmental tax approaches, such as the carbon tax. A carbon tax was first implemented in Finland in 1990, followed by other European countries, including Poland (1990), Sweden (1991) and Norway (1991). The Nordic carbon taxes continue to operate until today and have undergone multiple reforms in the interim, as countries have adapted their taxes based on experience and policy developments.

The policy addresses the central problem of climate change – that the social cost of burning fossil fuels exceeds the private and market cost (Izlawanie2022). Over time, an efficient carbon tax would increase to reflect the fact that as more greenhouse gases (GHG) emissions accumulate in the atmosphere. International organisations like the World Bank, Organisation of Economic Co-operation Development (OECD) and United Nations (UN) strongly suggest that policymakers implement a carbon tax. The policy, however, can only be effective if carefully designed following the country's fiscal, social, and economic conditions (Izlawanie, 2022).

Waste Disposal Tax

Waste taxes aim to promote waste recovery and reduce the amounts of waste ending up in landfills. Waste taxes are paid by the owner of the landfill, who passes on the cost through fees charged for the reception of waste. It is proposed by the current Government to extend the tax base beyond municipal landfills and include all waste which could be reutilised on the basis of technical, economical or environmental premises (UNCSD, 2010).

Over two decades have passed since local governments in Japan introduced an industrial waste disposal tax as a non-statutory earmarked tax on the delivery of industrial waste to disposal sites. First introduced by the Mie Prefecture in fiscal year (FY) 2002, by FY2007, 27 prefectures nationwide and Kitakyushu City had implemented the tax. These taxes expanded to local governments across the country as part of the "new tax boom" that followed the enforcement of the Comprehensive Local Autonomy Law (2000). Notably, the mechanism of this rapid expansion of tax introduction remains unclear, and no empirically sound literature elucidates the eventual decline and halt of this expansion, especially in light of the strategic interdependence among local governments.

Most countries let central or local governments levy taxes on waste, primarily to control the amount of waste generated. An exhaustive corpus of literature deals with this subject. Copeland (1991) was the first to theorize the interregional movement of waste by, first, constructing a theoretical model of international trade in waste, and second, factoring the impact on economic welfare of restricting this trade. Copeland concludes that the welfare-optimal policy is to make all goods and services, including waste, subject to free trade and to utilize each country's tax systems and regulatory framework to control externalities related to waste disposal (Emmanuel, 2022).

Resource Extraction Tax

A resource extraction tax, also known as a resource rent tax, is a tax levied on the profits generated from the extraction of natural resources like minerals, oil, and gas. It's a way for governments to capture a share of the economic benefits from resource-rich countries. The tax is often designed to be a single rate, regardless of the profit size, and can be set high, potentially approaching 100% of the resource rent (Nirupama, 2013)

According to Moustapha (2016), resource extraction taxes, such as royalties or income taxes, are levied on the exploitation of natural resources like oil, gas, and minerals. They are designed to capture the "rent" associated with these resources, which is the excess profit generated above the normal cost of production. These taxes can take various forms, including per-unit levies, percentage of market price, or income taxes. The optimal tax structure and rate depend on factors like resource price volatility, production costs, and the government's revenue needs.

Natural resources have always been the main sources of income for some developing countries. The extraction of natural resources in developing countries is usually done by large multinational corporations. The revenues generated from the sales of these resources in world markets as well as the taxes those countries levy on multinational mining companies accounted for more than half of the budget of those resource-rich developing countries (Moustapha, 2016). one of the main problem with this tax is that any major change in world market conditions usually leads to major changes in the tax rules themselves. Thus each major jump in world oil prices brought new taxes and new tax rates.

Tax incentives for renewable energy

Tax incentives for renewable energy, such as Investment Tax Credits (ITCs), aim to encourage businesses and individuals to invest in renewable energy projects by reducing tax liabilities or providing other tax benefits. These incentives can be structured as either ITCs, which offset the upfront cost of renewable energy equipment, or Production Tax Credits (PTCs), which offer ongoing benefits based on the energy produced **(**Oyeyemi, Chukwuemeka & Ulan 2024).

Nigeria, rich in renewable energy resources like solar, wind, hydro, and biomass, continues to struggle with a significant energy deficit despite its vast potential. With over 100 million people lacking access to reliable electricity, the country has increasingly turned to renewable energy as a sustainable solution to bridge this gap. To stimulate investment in this sector, the Nigerian government has introduced various tax incentives aimed at attracting both domestic and foreign investors. This briefing note provides an in-depth analysis of the various tax incentives currently available for renewable energy projects in Nigeria. It delves into how these incentives are structured, including tax holidays, investment tax credits, and import duty exemptions, and evaluates their effectiveness in promoting sustainable energy development (Oyeyemi, Chukwuemeka & Ulan 2024).

Nigeria's renewable energy potential is vast. The country receives an average of 6.25 hours of sunlight daily, translating to a solar energy potential of approximately 17,500 terawatt-hours annually. Additionally, its wind speeds in northern regions, ranging from 4 to 7 meters per second, make it viable for wind energy projects. Hydropower contributes about 12.5% of Nigeria's on-grid energy, while biomass from agricultural waste remains largely untapped. Despite this potential, renewable energy accounts for a small fraction of the national energy mix, overshadowed by fossil fuels, particularly oil and gas. The government's National Renewable Energy and Energy Efficiency Policy (NREEEP) aims to increase renewable energy's share to 30% by 2030, necessitating significant investment and policy support (National Renewable Energy and Energy Efficiency Policy (NREEP), 2015).

The Nigerian government has implemented several fiscal incentives to encourage renewable energy development. These incentives are embedded in various legislative frameworks, including the Electricity Act of 2023, the Industrial Development (Income Tax Relief) Act, and the Value Added Tax (VAT) Act.

According to International Renewable Energy Agency (RENA) (2022) tax incentives for renewable energy projects in Nigeria are pivotal in driving the nation's ambitious energy transition. Initiatives such as pioneer status, VAT exemptions, and relief from import duties have catalyzed progress, igniting a spark of innovation and investment in the sector. Nigeria's renewable energy sector holds immense potential, but its growth is hampered by regulatory uncertainty, limited access to financing, and inadequate infrastructure. While the tax incentives currently in place have spurred some development, further reforms and targeted initiatives are necessary to fully unlock their potential. By clarifying regulations, increasing awareness, improving financing mechanisms, strengthening infrastructure, and decentralizing energy governance, Nigeria can accelerate its transition to renewable energy and meet its sustainable development goals. These reforms will also help in establishing Nigeria as a leader in renewable energy in Africa, providing a sustainable energy future for its citizens while contributing to global efforts to combat climate change **(**Oyeyemi, Chukwuemeka & Ulan 2024).

2.1.3 Concept of Tax Evasion

Taxes, and tax systems, are fundamental components of government revenue generation. Brautigam (2008) has noted, taxes underwrite the capacity of states to carry out their goals; they form one of the central arenas for the conduct of state-society relations, and they shape the balance between accumulation and redistribution that gives states their social character. Thus, taxes build capacity to provide security, meet basic needs or foster economic development and they build legitimacy and consent helping to create consensual, accountable and representative government. A key component of any tax system is the manner in which it is administered (Naiyeju, 2010). Bahi and Bird (2008) states that no tax is better than its administration, so tax administration matters a lot, and an essential objective of tax

administration is to ensure the maximum possible compliance by taxpayers of all types with their taxation obligations. Unfortunately, in many countries, tax administration is usually weak and characterized by extensive evasion, corruption and coercion. In many cases overall tax levels are low, and large sectors of the informal economy escape the tax net entirely (Brautigani, Fjelftand and Moore, 2008).

Matthew (2017) defines tax evasion as the willful attempt to defeat or circumvent the tax law in order to illegally reduce one's tax liability. It further defines tax avoidance as the act of taking advantage of legally available tax planning opportunities in order to minimize one's tax liability5. To show a practical distinction between tax evasion and tax avoidance, Bassey illustrated that Tax evasion is an illegal method adopted by a taxpayer to escape payment of tax or to reduce his tax liability, for example, overstating expenses or reducing profits, refusing to register with tax authority, refusing to pay tax, failure to furnish returns or making false or incorrect returns to the tax authority. Tax avoidance is the act of arranging the taxpayer's affairs in such a manner that he reduces the tax liability without contravening the law. Tax evasion involves exploiting certain provisions or lack of provisions in the tax law to legally reduce one's tax liability, for example, where options are given in the tax laws, the taxpayer can choose the ones that will minimize his tax liability.

There are a good number of factors that might give rise to tax evasion. Some of the factors may be dominant in developed economies while others are pervasive in less developed economies. Generally, these factors include the disconnect between the government and the governed in most countries. There is lack of trust that government can carter for the needs of the ordinary people other man cartering for the needs of those in power and their relatives. In this regard, government becomes quite unpopular and the zeal and patriotism that compels the performance of civic obligations is low. Paying tax is therefore viewed as money wasted on government. This situation is particularly true of third world countries. Second, fairness in

the social system in a country goes a long way to determining how much motivation the citizens might have in performing basic civic duties such as the payment of taxes (Matthew, 2017).

2.1.3 Concept of E-commers

Electronic commerce in the world is becoming an increasingly popular form of trade. Most shoppers start looking for products, descriptions and quality features online before buying a product. In order to provide customers with more convenience, more and more companies and existing stores are setting up their own online stores where a person can buy at a convenient time, even at night when regular stores are no longer working (Margarita & Neringa, 2018).

Electronic commerce is a business in which information technology is used to increase sales, business efficiency and provide a basis for new products and services (Margarita & Neringa, 2018).

E-commerce involves many activities - e-commerce of goods and services, electronic delivery of digital information, electronic auctions, direct marketing to consumers. Electronic commerce can be widely applied in the following areas: e-trade; financial transactions in the provision of banking, financial leasing, insurance and other services, investments, speculative operations in currency and securities; other services markets: hotels, tourism, education, consulting, payment for utilities, advertising and other; between various business, public, public and other institutions, legal and natural person, house hold and individual(

Khan (2016) asserted that electronic commerce, or e-commerce, is the buying and selling of goods and services on the Internet. Other than buying and selling, many people use the Internet as a source of information to compare prices or look at the latest products on offer

before making a purchase online or at a traditional store. According to Gangeshwer (2013), the effects of e-commerce already appear in all areas of business, from customer service to new product design. It facilitates new types of information based business processes for reaching and interacting with customers like online advertising and marketing, online order taking and online customer service, etc.

2.2 Relationship between Digital Economy and Green Taxation

The relationship between the digital economy and green taxation is multifaceted, encompassing both challenges and opportunities. Green taxation, aimed at incentivizing sustainable practices and reducing environmental impact, can be effectively implemented and managed through digital technologies. These technologies facilitate monitoring, tracking, and calculating environmental indicators, while also helping to reduce tax evasion in the digital space. However, the digital economy also presents unique challenges for taxation, particularly when it comes to multinational enterprises operating across borders (Chen, Xu, Lyulyov, & Pimonenko, 2023)

The digital economy can facilitate enforceable green tax policies by leveraging digital technologies for improved data collection, reduced administrative costs, and enhanced compliance. This includes digital platforms that can track environmental impacts and transactions, making it easier to identify and levy green taxes on polluting activities. Additionally, digital inclusion can broaden the tax base and reduce evasion, leading to more robust public finances for environmental initiatives (Audu, Andikan & Baalah, 2024).

According to Bridget (2023), digital tools significantly enhance the tracking and verification of compliance with environmental standards. These tools, including software and

technologies like IoT and AI, enable real-time monitoring, automated reporting, and data analysis, improving efficiency and accuracy in environmental management.

A study carried out by Audu, Andikan and Baalah (2024) digital tools are pivotal in enabling businesses to collect real-time environmental data, track resource usage, and comply with regulatory standards. Technologies such as IoT facilitate monitoring emissions, energy consumption, and waste, while AI-driven analytics help forecast environmental risks and adjust operations accordingly. Blockchain ensures transparency and accountability, particularly in supply chains, making it easier for businesses to trace materials and verify compliance with environmental standards. However, the integration of these technologies is not without challenges.

According to Shardul, (2019), the combined adoption of new digital technologies, increased reliance upon new data sources, and use of advanced analytic methods hold significant potential to improve the effectiveness and enforcement of public policies, enable innovative policy design and impact evaluation, and expand citizen and stakeholder engagement in policy making and implementation.

The digital economy help policy maker make policy that will promotes sustainable practices and reduces environmental impacts by facilitating efficient resource management, encouraging clean energy adoption, and fostering innovation in sustainable technologies. It also enables better monitoring of energy consumption and facilitates international collaboration in renewable energy research and development (Ling & Hui, 2025)

The digital economy has the potential to play a significant role in enhancing the effectiveness and efficiency of green tax systems. By leveraging digital technologies, policymakers can

design more accurate, targeted, and enforceable green tax policies, promoting sustainable practices and reducing environmental impacts (Chen, Xu, Lyulyov & Pimonenko, 2023).

2.3 Theoretical Review

The paper is anchored on Smith's theory of taxation as the theory established that harnessing the potential of taxing digital economy as well as overcomes the challenges by adhering to certain principles.

Smith's Theory of Taxation

This theory, as the name implies, was propounded by Adam Smith in 1776. As per Smith's (1776) assertion, a tax system designed to accomplish certain goals must conform to a set of principles known as its features. Smith was curious in how an economy might increase its revenue in order to maintain itself or fulfill its obligations to the general population. He believed that since the private sector was more effective than the state sector, it should bear the main burden of fostering economic expansion (Bhatia, 2002).

Additionally, he argued that the private sectors need to be given the greatest amount of economic authority and the greatest amount of autonomy to carry it out effectively. The only other factors that need to be taken into account are enough money for the state to maintain itself, defend itself, enforce the law, and pay for social overhead, as well as a fair allocation of the burden. Smith established a few taxation principles that must be followed in order to accomplish a successful and efficient tax administration with this goal in mind (Theresa & Solomon, 2024).

Adam Smith argued that the four guiding principles of taxes should be efficiency, convenience, certainty, and fairness. In order to be fair, taxes should take into account the

circumstances of the taxpayers, including their capacity to make payments that meet their personal and family requirements. Certainty should imply that the purpose and method of taxation be made evident to taxpayers (Theresa & Solomon, 2024). Convenience is related to how simple it is for taxpayers to comply: To what extent is tax collection and payment an easy process? Lastly, efficiency has to do with tax collection. To put it simply, the way taxes are collected should neither interfere with how resources are allocated and used in the economy, nor should it be more expensive than the taxes themselves (Smith in Future Learn, 2023). These principles are contained in the amended or newly introduced concept of "significant economic presence" (SEP) as a new basis for the taxation of digital and online transactions by non-resident companies.

The principles of taxation, as this tax theory is known, have a very good philosophical foundation since they meticulously adhere to an efficient and successful tax administration, which is easily achievable when taxing through digital economy. The idea also sheds light on the consequences and practical issues of tax administration. If some components of this theory are not followed, a tax system that does not meet these requirements cannot generate enough income for the government, or to put it another way, it cannot reach its maximum potential in terms of revenue collection through taxing.

2.4 Empirical Review

Ashafoke and Obaretin (2023) investigate the effect of imposing a digital tax on digital channels on revenue generation in Nigeria using data collected from tax experts in Lagos state, Nigeria, via Google form. An exploratory research design is used, and data is analyzed using Structural Equation Model (SEM) via the STATA software for statistical analysis. The study administered 200 questionnaires to respondents in FIRS and selected BIG4 auditing firms in Nigeria. The findings of the research show that there is a positive and insignificant

relationship between revenue generation and tax e-commerce as well as between revenue generation and content providers. On the other hand, there is a positive and significant relationship between digital advertisers and revenue generation. This study concludes that the imposition of digital tax on digital channels is strongly linked to revenue generation and will lead to an increase in revenue generation in Nigeria.

Caroline (2022) investigate the impact of digital service tax on revenue collection in Kenya. The study adopted a descriptive research design. The study used the census method that had targeted all the 60 employees working in the digital sector division in KRA. A questionnaire was the major data gathering tool employed for this study. Findings on the first objective showed that inability to easily move digital business assets improves revenue collection in Kenya (M=3.562). Respondents also indicated that the ease of access to statistical information about activities of digital platforms and inability to easily move digital business activities can enhance revenue collection in Kenya (M=3.49). Findings also showed that leveraging on the existence of tax treaties and new ways of doing business in particular the explosion of e-commerce can enhance revenue collection in Kenya (M=3.199).

Xiaoli, Yuhong, Siyu and Yu (2023), examined the role of digitalization on green economic growth: Does industrial structure optimization and green innovation matter. The internal mechanism and linear relationship between digitalization and green economy growth are examined based on the panel data from 2013 to 2019. Moreover, this study explores the spatial spillover effect. The major study findings are as follows: (1) Digitalization and green economy growth represent a steady growth trend, and the former as a whole significantly promotes the latter, with a marginal effect of 1.648. (2) The mechanism analysis indicates the intermediary effects' size of three crucial intermediaries: green technology innovation > advanced industrial structure > the rationalization of industrial structure. (3) Both the "local effect" (0.556; 0.574) and "neighboring effect" (1.382; 1.415) of digitalization on green

economy growth are positive under the two weight matrices and display “simultaneous resonance” characteristics based on the spatial perspective. (4) There exists obvious regional spatial heterogeneity and resource endowment heterogeneity.

Xiaoting and Ziang (2024), analyze the impact of digital reform of finance and taxation on the green economy by taking China's “Golden Tax Phase III Project” as an example. Based on panel data from 30 provinces in China from 2005 to 2020, First, the results of this study show that the digital transformation of fiscal and taxation will curb regional carbon emissions and promote regional green development through the green technology innovation effect and green finance development effect. Second, the dynamic regression results of this study prove that with the increase in regional carbon emissions, the green development effect brought by the digital transformation of fiscal and taxation will show a gradually weakening trend. The research also found that due to different levels of new energy development, government environmental regulation intensity, industrial development level, economic develo

Quang, Nga, and Le (2024) explore the key factors affecting the digital economy and their impacts on green growth. Based on the above goal, the authors used qualitative and quantitative methodologies to analyze the data, and the study used descriptive statistical methods, including assessing the mean value and standard deviation and utilizing a structural equation model using SPSS 20.0 and Amos from surveying a sample size of 250 persons related to management, economics, banks, research institutes, and universities in 10 provinces in Vietnam. The article's findings show that there are determinants influencing the digital economy and impacting the digital economy on green growth. Finally, the study's novelty helps policymakers and provincial managers apply research results to develop the digital economy and green growth.

Rui and Zhipeng (2023), study focused on does Digital Economy Promote Enterprise Green Innovation? Evidence from Listed Heavy-Polluting Enterprises in China. Panel data of heavy-polluting enterprises in 352 cities in China from 2015 to 2019 was used. A positive relationship between the digital economy and heavy-polluting enterprises' green innovation is confirmed and accompanied by the lag effect. Mechanism analysis indicates that absorption capacity plays an important mediating role in this process.

Olumoh, Abdulrasheed, Sanni, Ibrahim, Oluwole and Salman (2024), examine the impact of taxation of digital economy on tax implications for businesses operating in Nigeria. The study adopted a cross-sectional survey research design and the population of the study consisted of 350 stakeholders in Nigeria, including employees of the Federal Inland Revenue Services (FIRS) and employees of the top 32 startups in Nigeria as of 2022. Random sampling technique was employed to quantitatively select a sample of 187 senior employees of both FIRS and startups businesses in Nigeria. The primary data obtained was analyzed using a Partial Least Square-Structural Equation Modeling (PLS-SEM) technique. This study found that taxation of digital economy has no significant impact on tax implications for business operating in Nigeria as shown by t values of 0.944 with p-value of 0.345 at 5% level of significance.

2.5 Gap in the Literature

The Fourth Industrial Revolution has profoundly impacted all areas of socio-economic life through the interconnected development of digital technologies and data. More and more diverse new business forms are appearing, creating massive, rapid, and significant changes in every facet of social existence. Besides, the global digital economic wave is A novel overarching tendency is emerging, serving as a pivotal catalyst for the reorganization of growth resources, the reshaping of the economic structure, and the transformation of the global competitiveness paradigm. The driving role and impact of the digital economy in

forming a new growth method (digital growth) is reflected in the emergence of many new industries and the blurring of geographical borders between countries. New business models with the core organization and operating methods based on digital technology applications. Developing digital technology promotes productivity and efficiency growth, making the digital economy increasingly crucial to countries' gross domestic product. There has been numerous study on the issue of impact of digital economy around the world for example Xiaoli, Yuhong, Siyu and Yu (2023), examined the role of digitalization on green economic growth, Rui and Zhipeng (2023), study focused on does Digital Economy Promote Enterprise Green Innovation, Xiaoting and Ziang (2024), analyze the impact of digital reform of finance and taxation on the green economy, but non of this study has been able to focus on the relationship between digital economy and green taxation particularly in Nigeria. This study will bridge this gap by examine how digital economy affecting green taxation in Nigeria.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

The research design for this study will cover the entire process that will be involve in data collection, collation and the analysis. The study, being a social science survey research, will adopt exploratory research design method for its data collection.

3.2 Population of the Study

The population of the study will comprise of all staff members of Oredo Local Government Area Internal Revenue Service. According to the Edo Internal Revenue Service, the total staff of IRS, in Oredo LGA is 87.

3.3 Sample Size

In selecting the sample size of this study a purposive sample method was employed. Therefore the sample size of this study consist of 87 respondent which means that the total number of staff in Oredo local government internal revenue service were selected.

3.4 Sampling Techniques

In this study random sample techniques was use. The respondents was sample from four (4) designated departments. And these departments include, Administration, Operations, Logistics and Accounting and Audit**.** For this study, random sampling technique was use to record the responses.

3.5 Method of Data Collection

The major sources for data collection for this study was through questionnaires. The data sources that was used for gathering the necessary materials for this research work consists of both primary and secondary sources. Relevant, qualitative and quantitative information was obtain from these two sources. Primary data was obtained from the questionnaires and the interviews that was administer to the staff of Edo Internal Revenue Service.

3.6 Instruments for Data Collection

Quantitative data was obtain from this sources through the administration of questionnaires. The questions that was ask design to correspond with the research questions, and research objective as outlined in chapter one. The questionnaires was administer to Edo Internal Revenue Service staff and this organizations while the structured interview questions will be administer to the Management Staff of Edo Internal Revenue Service.

Sources of Data

The sources of data for this study include the following;

Secondary data: Relevant information on this research was obtain from Edo Internal Revenue Service Publications, FIRS Act and Annual Financial Reports, Bulletins, FIRS documents, Textbooks, Journals, Internet Facilities, and other related materials.

Primary data: For comprehensive information, the secondary sources of information was used to support the information obtain from the primary sources and to further authenticate the information that will be obtained from the primary sources.

3.7 Method of Data Analysis

Two statistical tools of data analysis was deployed in the analysis of data derived from the field. They are the simple percentage and the regression. The simple percentage which is a descriptive tool for statistics was used for initial analysis, while the regression which is an inferential tool was employed in testing the hypotheses generated from the survey. Statistical Package for the Social Sciences (SPSS) software was used for the data analysis.

3.8 Model Specification

In this study the OLS model will be used:

$DE = \beta_0 + \beta_1 TE + \beta_2 ADDDM + \beta_3 COL + \beta_4 BL\ \mu \ldots\ldots\ldots\ldots\ldots\ldots$ *(1)*

Where:

DE	=	digital economy
TEF	=	taxation efficiency
DD	=	data-driven decision-making
TET	=	taxes on e-commerce transactions
TE	=	tax evasion
μ	=	Error Term
β_0	=	Constant
β_1	=	Coefficient of the independent variable

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND PRESENTATION

4.1. INTRODUCTION:

This chapter is focused on a detailed treatment of the data collected in the research study through the administration of questionnaire. To this end the data have been presented, analysis and interpreted thus making it more meaningful and comprehensive.

4.2. DATA PRESENTATION AND ANALYSIS

The data for the analysis were from the responses of the respondents to the question set out in the questionnaire. A copy of the questionnaire is reproduced in the appendix. A total of Eighty sevem (87) questionnaires were distributed to practicing accountants and auditors in one local government area of Edo state public sector as well as various audit firms in, but only 70 questionnaires were correctly filled and returned which represent 80% rate of responses.

4.2.1 Analysis of the Respondent Profile

Table 4.1: Profile of the respondent

		Count	Layer Column Valid N %
Age	21-30	33	47.1%
	31-40	27	38.6%
	41 and above	10	14.3%
	Total	**70**	**100.0%**
Gender	Female	33	47.1%
	Male	37	52.9%
	Total	**70**	**100.0%**
Educational Qualification	HND/BSC	55	78.6%
	Masters	9	12.9%
	Others	5	7.1%
	PhD	1	1.4%
	Total	**70**	**100.0%**
How long have you been working in your organization?	1-2 years	19	27.1%
	3 years and above	47	67.1%
	Less than a year	4	5.7%
	Total	**70**	**100.0%**

Source: Researcher's Compilation, 2025

On the age distribution of the respondent, 33 respondent representing 47.1% were between the age of 21-30 years, 27 respondent representing 38.4% were between the age of 31-40 years, and 10 respondent representing 14.3% were 41 years and above. This means that the respondent in this study were adult male and female who understand the subject matter in this study.

On the gender distribution of the respondent 33 respondent representing 47.1% were female respondent, and 37 respondent representing 52.9% were male respondent. This deduced that

both male and female were involved in the filling of the research instrument. On the education qualification of the respondent, 55 respondent representing 78.6% were HND/BSc certificate owners, 9 respondent representing 12.9% were master degree certificate owners, 1 respondent representing 1.4% was PhD certificate owners, and while 5 respondent representing 7.1% were others certificate owners. It can be deduced that the respondent in this study were male and female who were education and also understand the subject of this study.

When respondent were ask how long have you been working in your organization? 19 respondent representing 27.1% have been in the organization for 1-2 years, 47 respondent representing 67.1% have been in the organization for 3 years and above, and 4 respondent representing 5.7% have been in the organization for less than a years.

4.2.2 Analysis of the Respondent Opinion on the Relationship Between Digital Economy and Green Taxation

Table 4.2: Taxation Efficiency

	agree	strongly agree	undecided	disagree	strongly disagree
Digital economy increased the efficiency of tax collection	42 60.0%	20 28.6%	5 7.1%	3 4.3%	0 .0%
believe tax authorities are in enforcing tax laws in the digital economy	46 65.7%	10 14.3%	14 20.0%	0 .0%	0 .0%
digital economy has improved transparency in the tax system	29 41.4%	28 40.0%	11 15.7%	2 2.9%	0 .0%
I think it is challenging for tax authorities to administer taxes in the digital economy	22 31.4%	7 10.0%	11 15.7%	30 42.9%	0 .0%
digital tax policies can negatively impact economic growth and innovation	15 21.4%	4 5.7%	5 7.1%	39 55.7%	7 10.0%

Source: Researcher compilation, 2025

Most respondent believed that Digital economy increased the efficiency of tax collection. In the above table, 42 respondents representing 60.0% agreed, 20 respondent representing

28.6% strongly agreed, 5 respondent representing 7.1% were undecided, 3 respondent representing 4.3% disagreed and 0 respondent representing .0% strongly disagreed. It can be concluded that digital economy increased the efficiency of tax collection.

46 respondent representing 65.7% and 10 respondent representing 14.3% agreed and strongly agreed that I believe tax authorities are in enforcing tax laws in the digital economy. 14 respondent representing 20.0% were undecided, 0 respondent representing .0 and 0 respondent representing .0% disagreed and strongly disagreed respectively. It can be deduced that respondents believe tax authorities are in enforcing tax laws in the digital economy.

29 respondent representing 41.4% and 28 respondent representing 40.0% agreed and strongly agreed that digital economy has improved transparency in the tax system. 11 respondent representing 15.7% were undecided, 2 respondent representing 2.9% disagreed and o respondent representing .0% strongly disagreed. It could be deduced that digital economy has improved transparency in the tax system.

respondent disagreed to the statement that I think it is challenging for tax authorities to administer taxes in the digital economy. As it reflect in the above table, 22 respondent representing 31.4% agreed, 7 respondent representing 10.0% strongly agreed, 11 respondent representing 15.7% were undecided, 30 respondent representing 42.9% disagreed and 0 respondent representing .0% strongly disagreed it could be deduced that respondent disagreed with the assertion that I think it is challenging for tax authorities to administer taxes in the digital economy

on the statement that digital tax policies can negatively impact economic growth and innovation, 15 respondent representing 21.4% agreed, 4 respondent representing 5.7% strongly agreed, 5 respondent representing 7.1% were undecided, 39 respondent representing

55.7% disagreed, and 7 respondent representing 10.0% strongly disagreed, it can be concluded that digital tax policies can positively impact economic growth and innovation

Table 4.3: Data-driven Decision-making in the Nigeria Green Tax System

	agree	strongly agree	Undecided	disagree	strongly disagree
the increasing availability of data in the digital economy has improved the quality of decisions made within your organization	42 60.0%	23 32.9%	5 7.1%	0 .0%	0 .0%
organization's investment in data analytics tools and technologies has increased due to the demands of the digital economy	37 52.9%	21 30.0%	11 15.7%	1 1.4%	0 .0%
digital economy has increased the speed at which decisions are made within your organization	39 55.7%	23 32.9%	4 5.7%	4 5.7%	0 .0%
digital economy has shifted your organization's decision-making process from being based on intuition to being based on data and evidence	33 47.1%	26 37.1%	8 11.4%	3 4.3%	0 .0%
digital economy has increased the need for employees with data analysis skills within your organization	34 48.6%	27 38.6%	8 11.4%	1 1.4%	0 .0%

Source: Researcher compilation, 2025

Most respondent agreed that the increasing availability of data in the digital economy has improved the quality of decisions made within your organization. From the above table 4.3, 42 respondent representing 60.0% agreed, 23 respondent representing 32.0% strongly agreed, 5 respondent representing 7.1% were undecided, 0 respondent representing .0% disagreed and 0 respondent representing .0% strongly disagreed.

On the assertion that organization's investment in data analytics tools and technologies has increased due to the demands of the digital economy. 37 respondent representing 52.9% agreed, 21 respondent representing 30.0% strongly agreed, 11 respondent representing 15.7% were undecided 1 respondent representing 1.4% disagreed, and 0 respondent representing .0% strongly disagreed.

On the statement that digital economy has increased the speed at which decisions are made within your organization,39 respondent representing 55.7% agreed, 23 respondent

representing 32.9% strongly agreed, 4 respondent representing 5.7% were undecided, 4 respondent representing 5.7% disagreed and non of the respondent strongly disagreed.

On the statement that digital economy has shifted your organization's decision-making process from being based on intuition to being based on data and evidence, 33 respondents representing 47.1% agreed, 26 respondent representing 37.1% strongly agreed,8 respondent representing 11.4% were undecided, 3 respondent representing 4.3% disagreed, 0 respondent representing .0% strongly disagreed. It can be concluded that digital economy has shifted your organization's decision-making process from being based on intuition to being based on data and evidence.

Respondent agreed that digital economy has increased the need for employees with data analysis skills within your organization. In the above table, 34 respondents representing 48.6% agreed, 27 respondents representing 38.6% strongly agreed, 8 respondents representing 11.4% were undecided, 1 respondent representing 1.4% disagreed, and 0 respondent representing .0% strongly disagreed. It could be deduced that digital economy has increased the need for employees with data analysis skills within your organization.

Table 4.4: E-commerce Transactions

	agree	strongly agree	undecided	disagree	strongly disagree
Digital taxation adds further complexity, often requiring platforms to collect taxes on behalf of sellers in multiple locations.	45 64.3%	4 5.7%	7 10.0%	14 20.0%	0 .0%
Digital taxes can lead to price increases for consumers, as e-commerce companies may pass these costs on	42 60.0%	14 20.0%	4 5.7%	10 14.3%	0 .0%
Digital taxation can alter the competitive landscape of global e-commerce.	38 54.3%	14 20.0%	12 17.1%	6 8.6%	0 .0%
The evolving nature of digital tax regulations creates uncertainty for e-commerce companies.	30 42.9%	6 8.6%	16 22.9%	16 22.9%	2 2.9%
The drive for compliance has spurred innovation in tax technology.	38 54.3%	20 28.6%	11 15.7%	1 1.4%	0 .0%

Source: Researcher compilation, 2025

on the opinion that digital taxation adds further complexity, often requiring platforms to collect taxes on behalf of sellers in multiple locations, 45 respondent representing 64.3% agreed, 4 respondent representing 5.7% strongly agreed, 7 respondent representing 10.0% were undecided 14 respondent representing 20.0% disagreed and 0 respondent representing 0.0% strongly disagreed. It could be deduced that digital taxation adds further complexity, often requiring platforms to collect taxes on behalf of sellers in multiple locations.

On the statement that digital taxes can lead to price increases for consumers, as e-commerce companies may pass these costs on, 42 respondent representing 60.0% agreed, 14 respondent representing 20.0% strongly agreed, 4 respondent representing 5.7% were undecided, 10 respondent representing 14.3% disagreed and non of the respondent strongly disagreed. It could be seen that digital taxes can lead to price increases for consumers, as e-commerce companies may pass these costs on.

Most respondent agreed that Digital taxation can alter the competitive landscape of global e-commerce. As it reflect in the table above, 38 respondent representing 54.3% agreed, 14 respondent representing 20.0% strongly agreed, 12 respondent representing 17.1% were undecided, 6 respondent representing 8.6% disagreed and 0 respondent representing 0.0% strongly disagreed. It can be concluded that digital taxation can alter the competitive landscape of global e-commerce.

On the statement that the evolving nature of digital tax regulations creates uncertainty for e-commerce companies, 30 respondent representing 42.9% agreed, 6 respondent representing 8.6% strongly agreed, 16 respondent representing 22.9% were undecided, 16 respondent representing 22,9% disagreed, and 2 respondent representing 2.9% strongly disagreed. It could be deduced that the evolving nature of digital tax regulations creates uncertainty for e-commerce companies.

Respondent agreed that the drive for compliance has spurred innovation in tax technology. As it reflect in the table above, 38 respondent representing 54.3% agreed, 20 respondent representing 28.6% strongly agreed, 11 respondent representing 15.7% were undecided, 1 respondent representing 1.4% disagreed, and 0 respondent representing 0.0% strongly disagreed.

Table 4.5: Tax Evasion

	agree	strongly agree	undecided	disagree	strongly disagree
The increasing complexity of digital transactions makes it easier for individuals to evade taxes.	23 32.9%	6 8.6%	21 30.0%	18 25.7%	2 2.9%
I believe that the anonymity afforded by online platforms and digital currencies increases the likelihood of tax evasion.	44 62.9%	9 12.9%	6 8.6%	11 15.7%	0 .0%
The lack of clear and consistent tax regulations for digital businesses makes it more difficult for me to comply with tax laws.	36 51.4%	11 15.7%	10 14.3%	13 18.6%	0 .0%
I believe that the globalization of the digital economy makes it easier for individuals and businesses to shift profits to low-tax jurisdictions, thus evading taxes.	42 60.0%	8 11.4%	16 22.9%	4 5.7%	0 .0%
I believe that the increased use of data analytics and artificial intelligence by tax authorities will make it more difficult to evade taxes in the digital economy.	39 55.7%	18 25.7%	7 10.0%	6 8.6%	0 .0%

Source: Researcher compilation, 2025

On the statement that the increasing complexity of digital transactions makes it easier for individuals to evade taxes, 23 respondent representing 32.9% agreed, 6 respondent representing 8.6% strongly agreed, 21 respondent representing 30.0% were undecided, 18 respondent representing 25.7% disagreed, 2 respondent representing 2.9% strongly disagreed, it can be deduced that the increasing complexity of digital transactions makes it easier for individuals to evade taxes.

When respondent were ask their opinion on statement that I believe that the anonymity afforded by online platforms and digital currencies increases the likelihood of tax evasion, 44 respondent representing 62.9% agreed, 9 respondent representing 12.9% strongly agreed, 6 respondent representing 8.6% were undecided, 11 respondent representing 15.7% disagreed and 0 respondent representing 0.0% strongly disagree. It can be deduced that respondents believe that the anonymity afforded by online platforms and digital currencies increases the likelihood of tax evasion.

On the assertion that the lack of clear and consistent tax regulations for digital businesses makes it more difficult for me to comply with tax laws, 36 respondent representing 51.4% agreed, 11 respondent representing 15.7 strongly agreed, 10 respondent representing 14.3% were undecided, 13 respondent representing 18.6% disagreed and 0 respondent representing 0.0% strongly disagreed. We can conclude that lack of clear and consistent tax regulations for digital businesses makes it more difficult for me to comply with tax laws.

42 respondent representing 60.0% and 8 respondent representing 11.4% agreed to the statement that I believe that the globalization of the digital economy makes it easier for individuals and businesses to shift profits to low-tax jurisdictions, thus evading taxes. 16 respondent representing 22.6% were undecided, 4 respondent representing 5.7% and 0 respondent representing 0.0% disagreed and strongly disagreed. It can be concluded that

respondent believe that the globalization of the digital economy makes it easier for individuals and businesses to shift profits to low-tax jurisdictions, thus evading taxes.

On the opinion that I believe that the increased use of data analytics and artificial intelligence by tax authorities will make it more difficult to evade taxes in the digital economy, 39 respondent representing 55.7% agreed, 18 respondent representing 25.7% strongly agreed, 7 respondent representing 10.0% were undecided, 6 respondent representing 8.6% disagreed and 0 respondent representing 0.0% strongly disagreed.

Table 4.6: Digital Economy

	agree	strongly agree	undecided	disagree	strongly disagree
digital taxation simplifies the process of filing and paying taxes for businesses operating in the digital economy	40 57.1%	26 37.1%	4 5.7%	0 .0%	0 .0%
digital tax policies promote fairness and equity in the taxation of businesses, regardless of their size or location	38 54.3%	24 34.3%	7 10.0%	1 1.4%	0 .0%
digital taxation effectively addresses the challenges of cross-border transactions and profit shifting in the digital economy	48 68.6%	14 20.0%	5 7.1%	3 4.3%	0 .0%
implementation of digital tax systems has improved transparency and accountability in tax administration	35 50.0%	21 30.0%	9 12.9%	3 4.3%	2 2.9%
implementation of digital tax systems has improved transparency and accountability in tax administration	34 48.6%	25 35.7%	7 10.0%	4 5.7%	0 .0%

Source: Researcher compilation, 2025

Most respondent believed that digital taxation simplifies the process of filing and paying taxes for businesses operating in the digital economy. As in the above table, 40 respondent representing 57.1% agree, 26 respondent representing 37.1% strongly agree, 4 respondent representing 5.7% were undecided, 0 respondent representing 0% disagreed and 0 respondent representing 0% strongly disagreed. This can be deduced that digital taxation simplifies the process of filing and paying taxes for businesses operating in the digital economy.

On the assertion that digital tax policies promote fairness and equity in the taxation of businesses, regardless of their size or location, 38 respondent representing 54.3% agreed, 24 respondent representing 34.3% strongly agreed, 7 respondent representing 10.0% were

undecided, 1 respondent representing 1.4% disagreed and 0 respondent representing 0% strongly disagreed. The above analysis showed that digital tax policies promote fairness and equity in the taxation of businesses, regardless of their size or location.

From the table above, 48 respondent representing 68.6% and 14 respondent representing 20.0% agreed and strongly agreed that digital taxation effectively addresses the challenges of cross-border transactions and profit shifting in the digital economy. 5 respondent representing 7.1% were undecided, 3 respondent representing 4.3% disagreed and 0 respondent representing 0.0% strongly disagreed. This could be deduced that digital taxation effectively addresses the challenges of cross-border transactions and profit shifting in the digital economy.

A very high number of the respondent agreed that implementation of digital tax systems has improved transparency and accountability in tax administration. From the above table, 35 respondent representing 50.0% agreed, 21 respondent representing 30.0%strongly agreed, 9 respondent representing 12.9% were undecided, 3 respondent representing 4.3% disagreed, and 2 respondent representing 2.9% strongly disagreed.

Respondent agreed that implementation of digital tax systems has improved transparency and accountability in tax administration. In the above table 34 respondent representing 48.6% agreed, 25 respondent representing 35.7% strongly agreed 7 respondent representing 10.0% were undecided, 4 respondent representing 5.7% disagreed and 0 respondent representing 0.0% strongly disagree.

4.3 Correlation Analysis

Table 4.7: Correlations

		DE	TEF	DD	TET	TE
DE	Pearson Correlation	1	.224	.250*	.029	.141
	Sig. (2-tailed)		.063	.037	.814	.244
	N	70	70	70	70	70

TEF	Pearson Correlation	.224	1	.436**	.250*	.453**
	Sig. (2-tailed)	.063		.000	.037	.000
	N	70	70	70	70	70
DD	Pearson Correlation	.250*	.436**	1	.210	.188
	Sig. (2-tailed)	.037	.000		.081	.119
	N	70	70	70	70	70
TET	Pearson Correlation	.029	.250*	.210	1	.409**
	Sig. (2-tailed)	.814	.037	.081		.000
	N	70	70	70	70	70
TE	Pearson Correlation	.141	.453**	.188	.409**	1
	Sig. (2-tailed)	.244	.000	.119	.000	
	N	70	70	70	70	70

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation table above revealed the correlation between the dependent variable and independent variable in the study. From the above, taxation efficiency has pearson correlation value of .224 with sig.(2-tailed) value of .062 which signify that there is no correlation between taxation efficiency and digital economy. The Pearson correlation value of data-driven decision-making (DD)is .250 with sig.(2-tailed) value of .037 which signify that there is a correlation between data-driven decision-making and digital economy. On the e-commerce transactions (ET), the Pearson correlation value stand at .029 with sig.(2-tailed) value of .814. this means that there is not correlation between e-commers transaction and digital economy. And also Pearson correlation value of tax evasion stand at .141 with sig.(2-tailed) value of .244 which signify that there is no relation between tax evasion and digital economy

4.4 Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.292[a]	.185	.029	2.27751

a. Predictors: (Constant), TE, DD, TET, TEF

The model summary above showed the level at which the independent variable in the study contributed to change in the dependent variable. From the above, the R-square value stand at .185 which signify that at any change on taxation, digital economy contributed for about 18%. It also signify that there is a low relationship between digital economy and green taxation in Nigeria

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.485	4	7.871	1.517	.207[a]
	Residual	337.158	65	5.187		
	Total	368.643	69			

a. Predictors: (Constant), TE, DD, ET, TEF

b. Dependent Variable: DE

In the table above the F-statistic stand at 1.517 with significant value of .207 which is more than alpha significant value, therefore it can be deduce that there is no statistical significant relationship between digital economy and green taxation in Nigeria.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.280	1.389		3.801	.000
	TEF	.104	.127	.120	.825	.412
	DD	.204	.137	.198	1.491	.141
	TET	-.057	.098	-.076	-.577	.566
	TE	.054	.096	.080	.567	.573

a. Dependent Variable: DE

In the coefficient table above it can be seen the level of relationship between dependent and independent variable in the study. In table, the significant value of taxation efficiency stand

at .412 which is more than 5% alpha significant value, therefore it is not statistically significant. The significant value of data-driven decision-making stand at .141 which is more than 5% therefore it is statistically significant. The significant value of taxes on e-commerce transactions is .012 which is also more than 5%, therefore it is not statistically significant. on the other hand, the significant value of tax evasion is .573 which is more than 5%, therefore it is statistically significant at 5% level. From the any analysis it can be seen that all variable were not statistically significant at 5% alpha significant level.

4.5 Testing of the Hypothesis

Hypothesis one

H_i: digital economy does not Increased taxation efficiency in Nigeria

From the regression result above the significant value of taxation efficiency is .412 which is more than 5% alpha value. We therefore accept the null hypothesis that digital economy does not Increased taxation efficiency in Nigeria, and reject the alternative (digital economy Increased taxation efficiency in Nigeria)

Hypothesis two

H_{ii}: digital economy does not contribute to data-driven decision-making in the Nigeria green tax system

The regression result showed that the data driven decision making signfianct value reflect as .141 which is more than 5% alpha significant value, therefore we accept the null hypothesis (digital economy does not contributed to data-driven decision-making in the Nigeria green tax system) and reject the alternative digital economy contributed to data-driven decision-making in the Nigeria green tax system

Hypothesis three

H_{iii}: digital economy does not facilitate the collection of taxes on e-commerce transactions

The significant value of ecommerce taxation is .0566 which is more than alpha significant value, therefore we accept the null hypothesis (digital economy does not facilitate the collection of taxes on e-commerce transactions) and reject the alternative (digital economy facilitate the collection of taxes on e-commerce transactions).

Hypothesis four

H_{iv}: digital economy does not reduced tax evasion and promote sustainability in Nigeria.
From the coefficient table the significant value of tax evasion is .573 which is more than 5% alpha value, therefore, we accept the null hypothesis (digital economy does not reduced tax evasion and promote sustainability in Nigeria) and reject the alternative (digital economy reduced tax evasion and promote sustainability in Nigeria).

4.6 Discussion of Finding

The intersection of the digital economy and green taxation presents a complex interplay of opportunities and challenges for sustainable development. The digital economy, characterized by its reliance on digital knowledge and information as primary production resources and modern information networks as essential infrastructure, is increasingly recognized for its potential to drive green and sustainable economic growth, reduce carbon dioxide emissions, and enhance resource utilization efficiency. Simultaneously, green taxation, encompassing taxes on energy, transport, pollution, and resources, is a fiscal policy tool designed to promote environmentally friendly behavior and address environmental issues. According to the study by Bai, Du, and Chua (2025), the digital economy significantly boosts carbon

emission efficiency, with a 1% increase in the Digital Economy Index leading to a 0.148% improvement in carbon emission efficiency.

This study empirically examined the relationship between digital economy and green taxation in Nigeria. It specifically evaluates the impact on taxation efficiency, data-driven decision-making, e-commerce transactions and tax evasion. Base on the regression result it was discovered that the overall significant value indicated that there is no relationship between digital economy and green taxation in Nigeria. The coefficient table also reviewed that taxation efficiency, data-driven decision-making, e-commerce transactions and tax evasion was not statistically significant at 5% alpha level.

This result is in line with the work of Ashafoke and Obaretin (2023) The findings of the research show that there is no positive and significant relationship between revenue generation and tax e-commerce as well as between revenue generation and content providers. It also support the view of Caroline (2022) that digital economy can significantly impact green taxation, positively by influencing environmental regulations and tax revenue. Digital technologies can enhance environmental monitoring and enforcement of green taxes, leading to increased compliance and potentially higher revenues.

CHAPTER FIVE

SUMMARY OF FINDING CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter focuses on the summary of findings from the empirical analysis, conclusion and policy recommendations. The contributions to knowledge and areas of further studies are also presented.

5.2 Summary of Findings

The study examined the relationship between digital economy and green taxation in Nigeria. On the basis of the analysis of data in chapter four, the following specific findings are made:

1. That there is no relationship between digital economy and taxation efficiency. This signify that digital technology can not reduce the stress tax collectors pass through and can not also enhance efficient of tax revenue administration.
2. That there is no relationship between digital economy and data-driven decision-making. This signify that digital economy can not help policy maker in terms of revenue collection to determine the right policy that is needed to put in place.
3. That there is no significant relation between both digital economy and e-commerce transactions. This mean that digital economy through technology cannot effectively contribute to increase e-commerce transactions which can which can inturn bust green taxation.
4. Tax evasion was negatively related with digital economy.

5.2 Conclusion

Digital economy have been recognized as strong drivers of revenue general and economic development globally. Following this submission, there was the need to empirically investigate submission in the digital economy relationship with green taxation in Nigeria.

This study covered the period of 2015-2024. 87 questionnaire was distributed to the revenue administration employee in Edo State. Both descriptive and regression method was used. The result showed that there is a relationship between digital economy and green taxation in Nigeria. The R-square value at .085 indicated that at any change on green taxation, digital economy contributed for about 10%.

In the coefficient table, it was revealed that the significant value of taxation efficiency is not significant at 5% level. The significant value of data-driven decision-making stand at .141 which is more than 5%, therefore it is not statistically significant. The significant value of taxes on e-commerce transactions is .566 which is also less 5%, therefore it is not statistically

significant. The significant value of tax evasion is .573 which is more than 5%, therefore it is statistically significant at 5% level. From the any analysis it can be seen that all variable were not statistically significant at 5% alpha significant level.

5.3 Recommendation

As a result of the finding in this study the following recommendation were made:

1. Clear, concise, and consistently enforced tax regulations are crucial for a fair and effective e-commerce tax system. Governments should regularly update their tax laws to address the evolving nature of digital businesses and transactions.
2. Compliance costs can be a significant burden for businesses, especially small and medium-sized enterprises (SMEs). Policymakers should consider offering tax incentives, such as simplified reporting requirements or tax credits, to encourage voluntary compliance.
3. Government should invest in research work to find out how digital contribute to economy in other developing countries
4. Due to the inability of this study to covered of the state in Nigeria the study result might not be accurate. We therefore recommend that more research work should be carry out which could cover more large area in Nigeria.

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APPENDIX

FACULTY OF MANAGEMENT SCIENCE

DEPARTMENT OF ACCOUNTING

UNIVERSITY OF BENIN

BENIN CITY

Dear Correspondent,

LETTER OF QUESTIONAIRE DISTRIBUTION

I am a final year student of the above named school and department. I seek a favorable response from you in the completion of these questions which will provide useful information for me on the research I am currently carrying out on the **"digital economy and green taxation".** I guarantee you that the information are for academic and learning purpose and will be treated with strict confidentiality as your identity will be undisclosed.

Thanks for your anticipated cooperation.

Yours faithfully.

.

Please tick (✓) the appropriate box with the response that you consider most appropriate to each of the questions.

Agree	**A**
Strongly Agree	**SA**
Undecided	U
Disagree	**D**
Strongly disagree	**SD**

SECTION A: BIO-DATA OF THE RESPONDENTS

1. Age: below 20 yr ( ), 21-30 ( ), 31-40 ( ), 41yrs and above( )

2. Sex: Male ( ), Female( )

3. Educational qualification: OND/Diploma( ), HND/BSC( ), Master( ), PhD( ), Others( )

4. How long have you been working in yuour organization: less than a year ( ), 1-2 years( ), 3 years and above( )

Questionnaire

S/N	STATEMENT	A	SA	UN	D	SD
1	Digital economy increased the efficiency of tax collection					
2	believe tax authorities are in enforcing tax laws in the digital economy					
3	digital economy has improved transparency in the tax system					
4	I think it is challenging for tax authorities to administer taxes in the digital economy					
5	digital tax policies can negatively impact economic growth and innovation					
	the increasing availability of data in the digital economy has improved the quality of decisions made within your organization					
	organization's investment in data analytics tools and technologies has increased due to the demands of the digital economy					
	digital economy has increased the speed at which decisions are made within your organization					
	digital economy has shifted your organization's decision-making process from being based on intuition to being based on data and evidence					
	digital economy has increased the need for employees with data analysis skills within your organization					
	taxes on e-commerce transactions					
	Digital taxation adds further complexity, often requiring platforms to collect taxes on behalf of sellers in multiple locations.					
	Digital taxes can lead to price increases for consumers, as e-commerce companies may pass these costs on					
	Digital taxation can alter the competitive landscape of global e-commerce.					
	The evolving nature of digital tax regulations creates uncertainty for e-commerce companies.					
	The drive for compliance has spurred innovation in tax technology.					
	tax evasion					
	The increasing complexity of digital transactions makes it easier for individuals to evade taxes.					

	I believe that the anonymity afforded by online platforms and digital currencies increases the likelihood of tax evasion.					
	The lack of clear and consistent tax regulations for digital businesses makes it more difficult for me to comply with tax laws.					
	I believe that the globalization of the digital economy makes it easier for individuals and businesses to shift profits to low-tax jurisdictions, thus evading taxes.					
	I believe that the increased use of data analytics and artificial intelligence by tax authorities will make it more difficult to evade taxes in the digital economy.					
	digital economy					
	digital taxation simplifies the process of filing and paying taxes for businesses operating in the digital economy					
	digital tax policies promote fairness and equity in the taxation of businesses, regardless of their size or location					
	digital taxation effectively addresses the challenges of cross-border transactions and profit shifting in the digital economy					
	implementation of digital tax systems has improved transparency and accountability in tax administration					
	digital tax policies stimulate innovation and economic growth within the digital economy					