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# Adoption of Environmental Taxation in Nigeria: The Perception of Stakeholders

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**Abstract**
*Nowadays environmental concerns are a central issue in most developed and developing countries. Pollution and climatic change are major challenges to man's health and economic growth. Countries differ in approach to dealing with such problems. Specifically, the technologically advanced countries have always had their solutions for dealing with such problems, which in most circumstances are advanced types of solutions. However, developing countries occasionally become interested in finding solutions to these predicaments and hence this study is intended to assess the perception of stakeholders (policymakers, tax authorities, taxpayers, and the judiciary) on the adoption of environmental taxation in Nigeria. A survey method involving questionnaires was adopted for this study. Multiple regression analysis was used to test the relationships specified in the study. The study found that three groups (policymakers, tax authorities, and taxpayers) support the adoption of environmental taxation in Nigeria. On the other hand, the judiciary does not seem to support the adoption of environmental taxation in Nigeria. Accordingly, this study concludes that most of the stakeholders support the adoption of taxation in Nigeria as the adoption of environmental tax will be beneficial to the government as well as corporate organizations, especially in environmental conservation. Therefore, it is believed that the responses of the relevant stakeholders will lead to the emergence of environmental taxation in Nigeria specifically in the context of the transformation of the Nigerian tax system.*

**Keywords:** Environmental taxation, policymakers, tax authorities, taxpayers, stakeholders.

## 1. Introduction

In recent years, governments and various stakeholders have taken a significant interest in environmental taxation (Ingelson & Nwapi, 2014; OECD, 2011). Environmental tax is a tax levied on activities that are considered to be harmful to the environment and are intended to promote environmentally friendly activities using economic incentives (Odogwu, 2023). In other words, environmental tax is a wide range of legislative charges on businesses and private individuals aimed at reducing practices that cause damage to the environment. Environmental taxes adopted in any part of the world are categorized under environmental policy tools referred to as economic incentive-based instruments. Their increased usage has always been due to two reasons. Firstly, is the need to internalize external costs, and secondly, is the assumption that effective system of environmental tax will result in increased revenue for the government (Echefu & Akpofure, 2002; Steinbach et al., 2009). Environmental taxes may compel organizations to recognize the environmental cost they inflict on societies due to their activities. Such taxes ensure the implementation of the popular principle "the polluter should pay" at least the actual societal costs resulting from the pollution. Therefore, creating a strong incentive for economic agents to reduce environmental

damages works better than conventional physical regulations. In many countries of the world, governments have been the main driver for enforcing environmentally friendly behavior under their jurisdiction through regulations, taxations, subsidies, systems of emissions trading, voluntary agreements, and also by way of persuasions and provision of information. Accordingly, environmental taxes provide a means of correcting major deficiencies in the market system. Environmental tax in principle will confront polluting organizations with the external costs they create at various levels of pollution. Hence, it serves as a strong incentive for reducing pollution levels up to the point where the costs of reducing pollution become higher than the environmental taxes.

Despite the tremendous effort put in place by different countries, the global community is still faced with enormous challenges in dealing with environmental issues (Dervis, 2022). Problems of pollution, illegal dumping of toxic wastes and ecological degradation dominate the recent literature. Tailored to the above reasons; environmental taxes are currently becoming a widespread tool for environmental policy in various countries. Based on the foregoing, some commentators suggest that the proceeds of environmental taxes should be spent on environmental projects. Some advocate a system of formal hypothecation for this purpose. In practice, there are numerous sectoral regulations intended to control environmental degradation. Present environmental situation shows that they were all exercise in futility due to the absence of effective sanctions in some countries. In Nigeria, the government is yet to make an official announcement for the adoption of environmental tax system in the country. This implies that there are currently no formulated policies aimed at coordinating and monitoring the administration of environmental tax in Nigeria. This therefore accounts for the poorly enforced environmental protection legislation in the country. Hence, regulators and policymakers need to understand the extent to which resource and environmental conditions impinge upon macroeconomic performance. Besides, there have been several campaigns going on in Nigeria for environmental control. Numerous calls were made for the implementation of environmental laws to protect the country's ecosystem and ensure proper harnessing of environment tax. Similar suggestions were also made for a proper legislative framework to regulate and control environmental issues and concerns. Unfortunately, not much is achieved in terms of enacting legislation that will assist in managing the environment and ensuring sustainable environmental policies in the country.

It is worthy of note that the Nigerian government around January 2000 upgraded the federal environmental protection agency to become a government department to be headed by a minister (Adelegan, 2004). In 2016, the nation's national policy on environment was revised to capture emerging environmental issues and concerns. But the document fails short of establishing a framework to regulate and control environmental issues and concerns. With these efforts, the spirit of environmental protection seems to be fully awakened. Therefore, this study examines the perception of stakeholders on the decision to adopt environmental taxation in Nigeria. The stakeholders are persons/entities who contribute or derive benefits from the country's tax system. They include the overwhelming Nigerian citizen and resident, corporate entities, governments at various levels including government agencies who are stakeholders in the country's tax administration. However, for the purpose of this study, certain groups of stakeholders have been recognized as the most relevant stakeholders. Hence, the stakeholders

include the policy makers, tax payer, tax authorities and the judiciary.

## 2. Literature Review

In recent decades, the care for the environment has changed from being a matter of minority interest to a mainline issue of widespread concern. This is because stewardship of the natural environment is the responsibility of everyone. However, there are many factors that make it a particular concern for the governments. At the moment, Nigeria like other developing nations is facing serious environmental challenges characterized by raising sea level, frequent flooding, disease outbreak and increasing desertification which are all early signs of global warming (Lengoasa & Castonguay, 2022). To protect the country's ecosystem and rainforest resources, it is expected that new strategy must be adopted which would ascertain proper harnessing of environment tax. To achieve this feat, the three tier of government should work in harmony to promulgate climatic change policies and strategies like the developed countries. This step will ensure the country is on the same page with developed nations in mitigating environmental challenges. Besides, administration and monitoring is another problem that must be dealt with, hence, there need for a law that will take care of such concern at the state government level. However, some commentator asserts that the approach is only suitable where pollution comes from a point such as industrial discharge into air and water. Meanwhile most developed countries and some developing countries have either replace or supplement regulatory approaches, and it is now generally agreed that market-based instruments are more efficient than the regulatory approaches because of its tendency to effect positive change in human damaging act against the environment (Xynas, 2011). The most commonly use approach in market based economic incentive policy are the environmental tax and emission trade scheme. Accordingly, industrialized countries like USA, Sweden, China, and Germany etc. tackle greenhouse gas emission using market-based incentives in areas such as energy consumption, disposal of waste and transportation (Hudson & Chowdhury, 2009).

In order to protect the Nigerian developing environment, Nigeria government promulgated the Harmful Wastes Decree which is meant to provide the legal framework for effective control of the disposal of toxic waste and hazardous materials within the country's environment. This step was immediately followed by the establishment of a regulatory body, the Federal Environmental Protection Agency (FEPA) in 1988. FEPA is charged with the overall responsibility of preserving, protecting and developing the Nigerian environment. Under this package, both local governments and state governments within the federation were also encouraged to establish their own particular environmental regulatory bodies for the purpose of maintaining good environmental quality. To corroborate this effort The EIA Decree No. 86 of 1992 was passed as an additional regulation with similar aim of protecting the Nigerian environment. This regulation was specifically directed at regulating the industrialization process with particular emphasis on the environment. By this Decree, no industrial activity, plan or development falling under the FEPA's mandatory list can be executed without prior consideration of the environmental consequences of such an action, in the form of an environmental impact assessment (Echefu & Akpofure, 2002). Presently, environmental policies and measures in Nigeria are still at variance with the intention and need to be review to withstand the pressure pose by climatic change. As noted by Adelegan (2004), environmental protection legislation is poorly enforced in Nigeria. Accordingly, there are no incentives put in place for the purpose of

adopting pollution abatement measures and also no disincentives for polluting the environment. For instance, waste is disposed indiscriminately by small and medium scale industries with little or no disincentives.

Besides, the history of environmental regime dated back the colonial era when economic development plans and policies contain little or no stringent rules to conserve the natural resources and limit environmental pollutions. In 1958 criminal code section 246 was promulgated to control burial in houses, as well the public health Act of 1958 was aimed at controlling the spread of diseases by discouraging slaughtering of animals and disposal of night soil and refuse. Subsequently, committee was formed from various government ministries to formulate programs that can be used to checkmate identified water pollution problems. Hitherto the traditional command and control system to pollution control is still being use though it is evident that desire result produces no economic and environmental benefit because the instrument is grossly inadequate due to lack of enforcement and compliance (Adelegan, 2004). Sequel to the illegal dumping of refuse in Koko in 1987, the federal government of Nigeria promulgated the Harmful Waste Decree which provides a legal framework for effective control of the disposal of hazardous and toxic wastes into the Nigerian environment. Also, the Federal Environmental Protection Agency (FEPA) was established by Decree 58 of 1988 as amended by decree 59 of 1992 along with other State Environmental Protection Agency (SEPA). They were charged with the responsibility of protecting and developing the environment, prepare a comprehensive national policy including procedures for environmental impact assessment for all developmental projects. Statutorily the state environmental protection agencies were responsible for pollution control while the federal body is there to provide regulatory framework and institutional support for pollution control.

In 1989 FEPA published sectoral regulations including the National effluent limitation regulation (S.I.8) and Pollution Abatement in industries and facilities generating waste (S.I.9). In addition, environmental impact assessment was made obligatory to be demanded by FEPA and compliance was required within ninety days (Echefu & Akpofure, 2002). S.I 8 and S.I 9 was not implemented until 1995. The reason was to allow a three (3) year moratorium during which firm were mandated to make technological change that will enable compliance with the new regulation. The law stipulates the maximum permissible limit for various industrial emission parameters in Nigeria and is binding on all the 36 states of the federation. However, states were given the liberty to enact stricter emission limit (Ejobowah, 2000). It is worthy of note that the Nigeria government around January 2000 upgraded the federal environmental protection agency to become a government department to be head by a Minister. With this the spirit of environmental protection seems to be fully awakened.

**2.1 Environmental tax around the world**

The international aspects of environmentally related taxation are significant aspect of environmental tax that needs to be considered. As with several environmental policy instruments, there has always been concern over introduction of policies that are too stringent and cause emission-intensive activities to be transferred to other jurisdictions. However, international cooperation and coordination in setting environmental taxes can significantly reduce such risk. By doing so will also provide an additional benefit for innovation. The use of environmentally related taxation maximizes the international diffusion of innovation. Therefore, for two countries using taxes on the same pollutant, an innovation generated in one can be applied in the other. This may not be

possible under regulatory approaches, which are typically more prescriptive and has the tendency of potentially limiting the scope for transferring innovations across countries. Without a global solution, we are likely to witness carbon dioxide producing firms relocating from a country with high environmental taxes to another country that has lower environmental taxes. Some commentators would say this is already happening and will continue to be the case just as the case of the wholesale production shift of resource intensive goods from the United States to China.

A carbon trading system which excludes China and other developing economies would only intensify such type of production shift and is likely to result in an adverse reaction to the export of jobs in the developed nations. Environmental goals can also be attained by incentivizing business and encouraging the public through reducing VAT on sustainable products. The Stimulus Bill is a similar measure that was used in the US. Other incentive measures may include, anyone purchasing a solar powered system will receive a 30 percent tax rebate on the product. In many countries of the world, tax incentives and credits exist for people who desire to renovate their homes with energy-saving technologies such as energy-efficient boilers or windows. The Japanese government specifically offers tax exemptions to those purchasing Toyota's new Prius hybrid car. Similarly, the Japanese Parliament has approved a cash-back rebate for trading in cars thirteen (13) years or older for greener cars (ACCA, 2012). Nowadays cutting carbon usage is a significant tool for achieving a competitive advantage by business organizations. Even in the mid of a financial crisis, consumers view environmental issues as important parameter in making purchasing decisions. A business's attitude to environmental issues has a significant influence on consumer buying choices. Consumers are always happy with companies who continuously build their environmental credentials. For example, 44 percent of Americans attest that their environmental shopping habits have not changed due to financial crisis. In a similar survey carried out in the UK, 62 percent of consumers indicate that environmental concerns still influence their purchasing decisions (ACCA, 2012).

For purpose of stimulating pollution reduction, financial goals of the government development and diffusion of new technology and encouragement of trade exposed government across nations levy environmental taxes in areas such as transportation, disposal of waste and energy consumption. For example, the UK has established a range of environmental taxes, including the Climate Change Levy, a tax on the end-use of 'taxable commodities' (principally electricity, gas and coal) by commercial customers, and the Landfill Tax, which taxes people and organizations when they discard waste in landfill sites (ACCA, 2012). The United States has a four-decade history of using the tax code to protect the environment. Thus, has a long history of exploring the imposition of environmental taxes on environmentally damaging activities (Milne, 2011). President Clinton had attempted to enact a broad-based energy tax Superfund taxes, and the petroleum tax that funds the Oil Spill Liability Trust Fund, although unsuccessful. In the subsequent periods, the US implemented tax measures to increase investment in renewable energy sources enacting tax credits for the expansion of wind, solar, biomass and other renewable energy technologies. President Barack Obama has increased the impact of these measures in the US economic stimulus package. The US administration is also committed to negotiating a new climate change treaty and introducing a 'cap and trade' system (ACCA, 2012).

Also, countries like China impose taxes on disposal of household and commercial waste of industrial activities as well as

disposal of waste water. Although, there is an incentive for companies that reduce their water consumption inform of corporate income tax allowances. Germany has implemented taxation on emissions on transport, which are computed directly on the level of emissions. In Denmark 5.9 percent of tax revenues are made up of environmental taxes, by far the highest proportion in the EU and arguably the highest in the world. Sweden has taxes aimed at reducing energy consumption and additionally provides subsidies or exemptions for energy derived from sustainable or renewable sources. Administration and implementation of environmental taxes in Sweden recorded success in respect of pollution abatement and environmental efficiency. For instance, carbon emission has reduced over the past years between 1990-2006 by 9 percent far exceeding the target set by Kyoto protocol 1997 (Xynas, 2011). Three (3) environmental taxes namely: Carbon tax, Sulphur tax and Nitrogen tax are imposed in respect of air pollution control, though other charges like water pollution control, environmental charge on domestic air traffic, pesticide tax, battery charge etc. are in enforcement. Another area where success was noted in Sweden environmental policy is the transport industry. This was achieved through rates discrimination between leaded and unleaded. Today the country has wiped out leaded fuel from its market thereby reducing the consumption of unleaded fuel (Nyman, 1998).

**2.2 Legal and Regulatory Framework**

In Nigeria, the legal framework for corporate taxation includes statutes that impose taxes on income, capital gains, and consumption. The Companies Income Tax Act (CIT) 2021 as amended imposes three (3) CIT rates on companies in Nigeria. The rates depend on companies' turnover. Large companies with over ₦100 million turnovers are expected to pay 30 percent of their income as tax. Medium companies with ₦25 million to ₦100 million turnover are to pay 20 percent and 0 percent for small companies with less than ₦25 million turnover. Besides, the profits of companies engaged in upstream petroleum operations are subject to tax under the Petroleum Profits Tax Act. The generally applicable rate of Petroleum Profits Tax is 85 percent, although this rate is reduced to 50 percent for profits derived from production sharing contracts in respect of deep offshore and inland basin areas. For Education Tax, all companies, regardless of the nature of their operations are subject to a tax chargeable at the rate of 3 percent of their assessable profits. Value Added Tax (VAT) is chargeable at the rate of 7.5 percent of all goods and services that are supplied in or imported into Nigeria. All of these taxes, to the extent that they relate to companies, are administered by Federal Inland Revenue Service (FIRS) in pursuance of its functions under the FIRS (Establishment) Act and the internal revenue board at the state level.

**2.3 Policy Makers**

The legislative arm of government in Nigeria comprises the organs of government at both the federal and state levels who are empowered to make laws or amend existing laws. The national assembly is responsible at the federal level while the state houses of assembly are at the state level. The federal republic of Nigeria's constitution is vested with the powers to make or amend laws on the taxation of income or profits in the national assembly. The same constitution gives the state houses of assembly the powers in relation to state and local government taxes. Therefore, it is the constitutional responsibility of the National Assembly and state house of assembly to pass tax laws or amend existing laws to suit the need of the country. In the present democratic dispensation, this category of stakeholder will play vital role in implementation of environmental tax in Nigeria due to their powerful influence in decision making, the legitimacy of their relationship to the government and urgency of their claim.

**2.4 Tax Authorities**

For adoption of environmental tax to serve it purpose, the tax authorities (administrators) including both the Federal Inland Revenue Service (FIRS) and the States Board of Internal Revenue (SBIR) constitute a relevant category of stakeholders because they are primarily established to advice government on all tax related matters. In Nigeria, tax authorities have the duty of ensuring that tax matters at all levels are conducted in agreement with statutory requirements in order to guarantee the efficiency of tax system. In practice, tax authorities usually obtain necessary approvals in respect of policy and other relevant operational matters from the ministry of finance. Tax authorities ensure effective compliance through monitoring and enforcement and also prescribe stiffer sanctions and penalties for non-compliance where necessary. Tax authorities also provide support and necessary insight in respect of new tax legislation or during a review of the existing legislation. The tax authorities equally provide technical input and know-how to aid the legislature in the discharge of their functions. Tax authorities have the responsibility of conducting public enlightenment to educate taxpayers on tax matters. Tax authorities have the mandate to publicize proposed changes to tax laws or amendment of existing tax laws to taxpayers. Through this means, environmental requirements will be met and maintained. Based on their function, this study will examine the extent to which this category of stakeholder will contribute towards successful implementation of environmental tax in Nigeria.

**2.5 Taxpayers**

Taxpayers are the bedrock of the tax system and therefore the most important group of stakeholders in tax administration. They are the source of all revenue generated by tax authorities. Due to the significant role, they play in the tax system, taxpayers are the primary focus of all tax authorities. Under the Nigerian legal system, taxpayers are expected to discharge their responsibility of ensuring strict compliance with tax laws at all times. Taxpayers are required to register with tax authorities and make correct, complete and timely tax returns and payments as required under the law. Besides, for the tax system to be effective and efficient, taxpayers need to cooperate with other stakeholders within the tax system in order to enhance the overall quality of the tax administration. Other than their formal compliance roles, taxpayers can also act in an informal supervisory capacity given that, they have the right to demand for transparency and accountability in the collection, allocation and disbursement of tax revenue. Taxpayers have the right and privilege of making necessary input to proposed tax law and suggest changes to existing tax law. Therefore, the frequent interaction between tax payers, tax authorities and other stakeholders in the tax system, in a forum where ideas may be freely exchanged and suggestions made for the improvement of tax practice and administration may present opportunity for implementation of environmental tax base on the opinion of this category of stakeholders.

**2.6 Judiciary**

Another important constituent category of stakeholder is the judiciary. In Nigeria, judiciary is the body empowered to interpret tax laws and to deliver judgment on tax matters. It is worthy to note that, all tax disputes which cannot be resolved in other legal manner shall be referred to the judiciary for adjudication. Based on this insight, researchers had anticipated that the judiciary would play a key role in resolution of fiscal disputes between the different arms and tiers of government and the pollutants. To ensure compliance the judiciary is expected to play a neutral role and to also maintain independence in the discharge of its functions as well as partner with the tax authorities. For this reason, judiciary personnel need to be trained on tax matters and other related technicalities.

Accordingly, it shall be the responsibility of the judiciary to ensure that their staffs are conversant with recent developments in the country's tax system specifically environmental tax issues. This will enable them adjudicate on technical matters submitted for their consideration.

**2.7 Empirical Review**

Several studies were conducted on environmental taxation both within and outside Nigeria. Among others, Garba (2017) conducted a study to examine what usually motivate the public to accept a policy that will lead to the acknowledgment of environmental taxation in Nigeria. A survey technique using a close-ended questionnaire was used. Findings from the study suggest that interpersonal trust, political confidence, norms of people, and ethical beliefs are the key determinants of policy acceptance of environmental taxes in Nigeria. A similar study was conducted by Ellawule (2021) to examine the prospect of carbon tax in Nigeria. Findings from the study reveal that, Nigeria could benefit from double dividend of environmental taxation if a reasonable imposition of taxation is made. Also, a study conducted by Tayo and Oladipo (2022) to examine the effect of environmental taxes on pollution control in Nigeria reveals that environmental taxes have a considerable influence on pollution control in Nigeria. The study was predicated on planned behavior theory and value belief norm theory of environmentalism. Based on the findings, the study recommends that government of Nigeria establish a tax system that would allow environmental policies to thrive. This will enable planning of tax levy and imposition of environmental tax on those who are responsible for generating environmental issue in the country.

Moreover, Okafor and Igbinovia (2017) conducted a study to investigate the perception of some environmentalist, accountants in practice, tax practitioners and academics in the fields of environment on the introduction and practicability of environmental taxes in Nigeria. The study used cross sectional survey research design using survey questionnaire. Data were elicited from 146 respondents. The data was analyzed using descriptive statistics and Analysis of Variance (ANOVA). The findings from the study indicates that most of the respondents believe that environmental taxes will not affect the economy negatively and also there is no significant difference on the perception of respondents on the influence of environmental taxes on economic development in Nigeria. Also, Olatunji and Olatunji (2015) investigate the developmental implication of environmental taxation in Nigeria. Using primary data sourced from a sample of 100 respondents, the study found that environmental taxation has no significant influence on cost effectiveness of Nigerian firms and that environmental taxation has not culminated into improved standard of living for the citizens of the country. The study concludes by requesting the government to channel the proceeds of environmental taxes toward remediation of environmental degradation and infrastructural development in the country.

Mpofu (2022) explores the challenges and opportunities associated with green taxes in respect of revenue mobilization, protection of the environment and delivery of the Sustainable Development Goals (SDG). The study used a qualitative approach by adopting a comprehensive review of literature to find out possible research and policy gaps in relation to green taxes, environmental protection and the fruition of the SDGs. The study found that green taxes are pivotal to dealing with environmental challenges. These taxes can also be used to address climate change concerns and ensure environmental sustainability. However, care should be taken to ensure that environmental taxes are effectively assessed to avoid driving businesses out of environmentally taxing jurisdictions to non-

taxing ones or those with lower tax rates. A similar study was conducted by Muhammad et al. (2021) using thematic analysis on 60 articles. The objective of the study was to systematically review the empirical studies using Reporting Standard for Systematic Evidence Syntheses (ROSES). Based on the review, the study found that most citizens will support environmental taxation policy if they are well informed about the content and effectiveness of the policy particularly as it relates to revenue increase for the government. The study also found that Nigerian citizens perceive the environment taxation policy as a fair policy in terms of costs distribution and social sharing. They are also concern about how the policy will address climate change issues and how it will protect the environment.

More so, Uwuigbe et al. (2015) examined environmental tax and how it can be used as a tool for flood reduction in Nigeria. The study covers local governments which are majorly affected by flood in Lagos state. The study concluded by proposing environmental tax to be used to address a wide range of issues including air emissions, waste disposal and water pollution. He et al. (2023) examines the impact of environmental tax, governance and energy prices on environmental quality in the context of organization for economic co-operation and development countries. A second-generation econometric method was used for the analysis. The findings from the study indicates that environmental tax and governance increase environmental quality. Accordingly, the study recommends that the government should consider possible effect of energy prices in other to avoid hurting the growth and well-being of the economy. Besides, Usman and Alola (2022) evaluate that effectiveness of environment taxes in mitigating the effect of tourism on environmental performance in 28 countries of the EU. The result of the panel threshold regression model suggests that the effect of tourism on environmental performance is dependent on the level of environmental taxes. Specifically, the effect of tourism on environmental performance is insignificant when environmental taxes are below the threshold level of 9.43 percent. Therefore, once environmental taxes cross a threshold level, tourism will improve environmental performance. Based on the findings, the study concludes that, tourism influence on environmental performance depends on lower or higher environmental taxes.

Samusevych et al. (2021) assess environmental taxes in the context of national security. The sample of the study consist of six European countries namely France, Belgium, United Kingdom, Finland and Austria. The study covers the period 1994-2019. The result of the analysis has shown that environmental tax systems in European countries have different levels of multiplex effectiveness in the context of national security. Therefore, construction of optimization models will allow the identification of vectors of change in the structure of environmental taxes, which is likely to increase the countries integrated regulatory efficiency. Also, Efutade et al. (2023) conceptually analyze the current situation and development of green tax system in Nigeria. The study noticed uncertainty about the public acceptance of green taxes and the difficulty in predicting the rate at which pollution will fail if environmental taxes are implemented. Despite the difficulties, the study affirms that environmental tax is gaining momentum in Nigeria. Accordingly, the study suggests that Nigeria should introduce and develop the scope of taxation as well as adopt the method of green tax to cultivate taxpayers' green awareness. The government should come up with a systematic policy framework for the successful design and implementation of environmental taxes. Therefore, it is high time for a system of green tax to be popularized in order to keep up with the global standards of environmental protection.

Kuralbayeva (2019) conducted a study to examine the outcomes of environmental tax reforms related to welfare and unemployment in developing countries that are faced with large informal rural-urban migration. They study argued that in the past, policies intended to minimize rate of unemployment were having a negative impact on other policy objectives as they reduce private incomes of people especially on state benefits. Therefore, to make the green tax reform socially acceptable, the government of developing countries must come up with complementary policies that will cut public spending so as to reduce the burden of green tax on the private sector. Accordingly, the study concludes that, government of developing countries should introduce environmental taxes that will not just achieve the environmental goals, but enable the attainment of other socio and economic targets such as reduction in the rate of unemployment.

Tran et al. (2019) introduced a model to support companies in making de-carbonization investment by balancing companies' profits, environmental protection and carbon tax. The study proposed a decision-making support model that will help companies and the government appropriate tax policy to achieve environmental development goal. Therefore, companies should be ready to spare more investment budget to generate higher profits in the era of carbon tax. On the other hand, it is left for the government to ensure that carbon tax not just protect the environment but also promote economic growth. A similar study was also conducted by Tsai (2018) which affirms that Taiwanese government is using a carbon tax system to control carbon emission by requiring affected firms to pay the carbon tax. The carbon tax is meant to minimize overall social and environmental cots as well as grow the competency of reducing carbon emission. The study concludes by assuring corporate organizations that they can still maximize their profits despite the enactment of carbon tax. This can be achieved by using appropriate strategies to increase their abilities to generate profits by improving competitiveness and applying capacity expansion.

**2.8 Theoretical Review**

This section discussed the theories adopted for the study which include; polluter pays principle and Pigou tax theory.

**2.8.1 Polluter Pays Principle**

The Polluter Pays Principle (PPP) was first introduced in 1972 by the Organization for Economic Corporation (OECD). The principle believes that, the polluter should be held responsible for pollution. Specifically, the principle imposes liability on persons who pollutes the environment as well as compensate for the damage caused to the health of humans and the environment to its original state (Gaur et al., 2022). The PPP is therefore a foundation principle of environmental policy that guides sustainable development. The main idea of the theory is that, each polluter is expected to achieve both production and pollution. This implies that, the polluter should not only benefit from the activity causing the pollution, but also bear the consequences of the harms imposed on others or the environment as a result of his activities. Therefore, in adopting the PPP, the strategy is to ensure that those who produce waste are responsible for recycling and disposing the waste.

Over the years, the PPP is believed to have helped to some extent in mitigating the damage caused to the environment. Despite the efficacy of the principle, it has some set back especially in developing nations. Firstly, most of the developing nations are yet to sign the principle as a main environmental policy guideline (Gaur et al., 2022). Secondly, there is persistent ambiguity in identifying the actual polluter who is expected to bear the cost. Thirdly, the polluter may be poor household, an informal sector firm or a mid-size formal sector firms, hence, it will be difficult to impose the liability on such category of polluters. Despite the aforementioned lapses of the principle, it is nowadays used as a strong

administrative, legal and economic tool for restraining pollution problems. It is also used as tool for preventing and remedying the environmental damages as well as protects the species and natural habitats including the soil and water. Hence, the polluter pays principle is part of a set of broader principles to guide sustainable development worldwide.

**2.8.2 Pigouvian Tax Theory**

Pigouvian tax theory is a theory that is named after a British economist Arthur C. Pigou. He was the first person to study the theoretical issues concerning environment and taxation (Efunade et al., 2023). The theory has received increased attention in recent years because of the concern with environmental issues. The main purpose of the theory is to oppose market inefficiencies by increasing the marginal private cost by the amount generated by the negative externality. In such situation, the final cost will reflect the full social cost of the economic activity. In so doing, the negative externality will be internalized. Pigouvian tax theory emphasize on specific rate of taxes on units of emissions or environmental damages. Specifically, the theory affirms that, the rate of tax is equal to marginal social cost at the socially efficient level of environmental damages. The socially efficient level of environmental damages occurs where the marginal benefit to firms from wastes or emissions equals the marginal social cost of those environmental costs. This implies that, by raising the price of polluting to reflect social cost, the polluters face the private and social costs of their actions. They take the responsibility of the cost of their negative externalities instead of the society. This can be achieved by imposing tax on the producer of goods and services that create the adverse side effects for the society. Essentially, Pigouvian tax theory discourages activities that impose a cost of production on third parties and the society as a whole. The theory is effective in dealing with the problem of negative externalities such as environmental pollutions and other environmental damages

**2.9 Research Framework**

This study's research model is developed to determine the perception of policy makers, tax authorities, tax payers and the judiciary on the adoption of environmental taxation. The conceptual model assumes that the adoption of environmental tax is a function of the effectiveness of the policy makers, tax authorities, tax payers and the judiciary. This assumption is reasonable because the stakeholders are those that contribute to and derive benefits from the country's tax system. Hence, they have significant impact on the adoption of a functional environmental tax regime in the country. Accordingly, adoption of environmental taxation is the dependent variable in the study. The independent variables are policy makers, tax authorities, tax payers and the judiciary. Thus, the research model is as depicted in Figure 1 below.

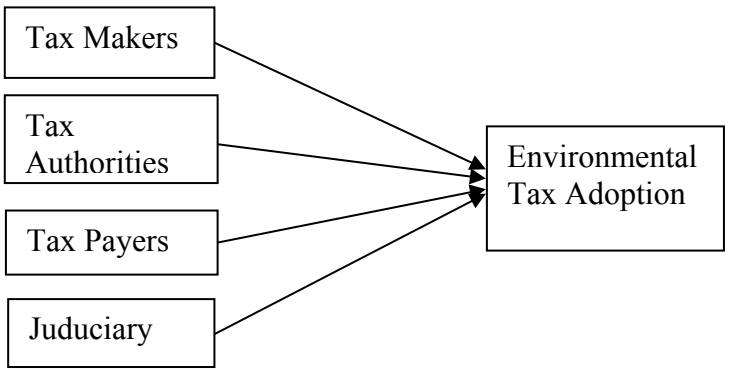


*Figure 1: Research Framework on the Perception of Stakeholders on Adoption of Environmental Taxation in Nigeria*

**3. Methodology**

The aim of this research is to examine the perception of stakeholders on the adoption of environmental taxation in Nigeria. To achieve the research objective, a survey research design was adopted. Accordingly, survey questionnaires were used to collect the data. The targeted respondents are policy makers, tax authorities, tax payers and the judiciary. The targeted population

of the study is the staff of the selected sectors of the economy. Besides, there are 37 states in Nigeria including the federal capital territory. The states are grouped under six (6) geo-political zones. Therefore, considering the fact that collecting data from all the members of the population is not feasible, this study targets three geopolitical zone of the country; the north central, north east and northwest. One state was selected from each geopolitical zone. Specifically, in the north east geo-political zone, Bauchi state was selected. In the North central, Plateau state was chosen and in the north-west zone, Kano state was adopted. A purposive sampling technique was used in selecting a representative sample from the total population. According to the data available to the researchers from various sources suggested that the targeted population exceeds 20,000 persons. Thus, the study draws its sample size based on Krejcie and Morgan (1970) sample formula. According to Krejcie and Morgan (1970), for a population exceeding 20,000 elements, a minimum sample size of 377 elements is enough. Therefore, the study adopts Krejcie and Morgan (1970)'s suggestion. The total number of respondents in the selected sectors is approximately 20,000. Therefore, in each selected state, 150 questionnaires were distributed making it a total of 450 questionnaires. The questionnaire was adopted from Okafor and Igbinovia (2017). A sample of the questionnaire is attached in appendix I

To test the hypotheses postulated in the study, a model specification is developed to test the impact of the independent variables on the dependent variable. Model specification refers to the description of the process by which the dependent variable is generated from independent variables. Thus, it encompasses the choice of independent and dependent variables, as well as the functional form connecting the independent variables to the dependent variables. The dependent variable in this study is the environmental tax adoption in Nigeria, while the independent variables include: policy makers, tax authorities, taxpayers and judiciary. The model is as estimated below.

$ETA_i = \beta_{0i} + \beta_1 PLM_i + \beta_2 TAU_i + \beta_3 TPY_i + \beta_4 JRYi + \mu_i$ … … (1)

Where:

ETA = Environmental Tax Adoption
PLM = Policy Makers
TAU = Tax Authorities
TPY = Tax Payers
JRY = Judiciary

$\beta 0$ = Constant

$\beta_1 - \beta_4$ = Coefficient of the slope parameters

$\mu$ = Error term

## 4. Results and Discussions

This section deals with the analysis of data using descriptive statistics and inferential analysis. This includes presentation and discussion of the descriptive statistics of all the variables considered for the study as well as the regression analysis for the purpose of estimating the model used in this study.

### 4.1 Descriptive Analysis

A total of four hundred and fifty (450) questionnaires were equally distributed to respondents in the three selected states in three geo-political zones. A total of 403 questionnaires were successfully retrieved. However, 47 of the questionnaires were not retrieved, while 14 were discarded during data screening. Hence, all the analysis was based on the 389 questionnaires retrieved. Therefore, the retrieved responses (389) are adequate because the analysis technique tolerate minimum sample size of 377. For the analysis of the data collected, Table 4.1 present the distribution of the respondents based on the selected sectors. Accordingly, 83 respondents representing 21.3% of the respondents are policy makers, 98 respondents accounting for 25.2% are staff of tax authorities. While, 165 respondents

are tax payers representing 42.4% of the respondents, 43 respondents are staff of the judiciary thereby accounting for 11.1% of the respondents. Therefore, the majority of the respondents are tax payers.

**Table 4.1: Descriptive Analysis**

| Category | Frequency | Percentage |
|---|---|---|
| Policy makers | 83 | 21.3 |
| Tax authorities | 98 | 25.2 |
| Tax payers | 165 | 42.4 |
| Judiciary | 43 | 11.1 |
| **Total** | **389** | **100** |

**Source:** Field Survey, 2023.

### 4.2 Correlation Analysis

The result of the correlation analyses for the perception of stakeholders on the environmental tax adoption is as presented in Table 4.2. The correlation analysis was conducted using Statistical Package of Social Science (SPSS) version 23. Environmental Tax Adoption (ETA) is the dependent variable; Policy Makers (PLM), Tax Authorities (TAU), Tax Payers (TPY) and Judiciary (JRY) are the independent variables. As depicted in Table 4.2, there is perfect positive correlation (association) between Environmental Tax Adoption (ETA) and three of the four independent variables namely; Policy Makers (PLM), Tax Authorities (TAU) and Tax Payers (TPY) at 1% level of significance. On the other hand, the correlation coefficient between Judiciary (JRY) Environmental Tax Adoption (ETA) is not significant. This suggests that the judiciary do not see the need to adopt environmental tax in Nigeria. Moreover, the correlation matrix in Table 4.2 also presented the extent of relationships among the exogenous and endogenous variables. The result shows that no multicollinearity exist as all the independent variables and the dependent variable scores are less than the cut-off values of 0.9 (Hair et al 2010).

**Table 4.2: Correlation Matrix**

| | ETA | PLM | TAU | TPY | JRY |
|---|---|---|---|---|---|
| **ETA** | 1.0000 | | | | |
| | 0.0000 | | | | |
| **PLM** | 0.2634 | 1.0000 | | | |
| | 0.0000 | 0.0000 | | | |
| **TAU** | 0.2180 | 0.0543 | 1.0000 | | |
| | 0.0000 | 0.0000 | 0.2354 | | |
| **TPY** | 0.2823 | 0.1333 | 0.1870 | 1.0000 | |
| | 0.0000 | 0.0000 | 0.0034 | 0.0000 | |
| **JRY** | 0.0838 | 0.2928 | 0.1468 | 0.0060 | 1.0000 |
| | 0.0838 | 0.0666 | 0.0000 | 0.0013 | 0.8958 |

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

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

Besides, VIF and tolerance tests were conducted to further confirm the presence or otherwise of multicollinearity in the dataset. According to Kline (2005), the acceptable value of VIF is less than 10 and tolerance value is more 0.10. As shown in Table 4.3, all the exogenous variables reported a VIF value of less than 10, while the mean VIF is 1.696. This result suggests non-presence of multicollinearity in the dataset. Accordingly, the research findings can be interpreted with much confidence.

**Table 4.3 Multicollinearity and Variance Inflation Factor (VIF) Test**

| Independent Variables | Tolerance | VIF | Comment |
|---|---|---|---|
| Policy Makers | 0.809 | 2.011 | No existence of Multicollinearity |
| Tax Authorities | 0.777 | 1.991 | No existence of Multicollinearity |
| Tax Payers | 0.980 | 1.087 | No existence of Multicollinearity |
| Judiciary | 0.570 | 1.750 | No existence of Multicollinearity |

**Note: ETA:** Environmental Tax Adoption, **PLM:** Policy Makers, **TAU:** Tax Authorities, **TPY:** Tax Payers, **JRY:** Judiciary

**4.4 Regression Analysis**

The regression result is as presented in Table 4.4. As depicted in the Table, R-square value is 0.2089, which means that 20.9% changes in Environmental Tax Adoption (ETA) can be explained by Policy Makers (PLM), Tax Authorities (TAU), Taxpayers (TPY) and Judiciary (JRY). The value further reduced to 20% when the adjusted R- square value of 0.20 is considered, leaving the rest to other factors not covered in the model. Table 4.4 also indicates that, the model is significantly fit with a significant p-value of 0.000, which is far less than the 0.05 level of significant applied by this study. Table 4.4 further shows that, the regression coefficient of PLM is 0.0036 with a significant value of 0.000. This means there is significant positive relationship between PLM and ETA. This suggests that, policy makers support the adoption of environmental tax in Nigeria. Therefore, this group of stakeholders believes that with the introduction of environmental tax, corporate organization will be more socially responsible and also pays more attention to the need of citizens as well as the environment.

**Table 4.4 Regression analysis**

| Variable | Coefficient | Std. Error | T | Sig. |
|---|---|---|---|---|
| (Constant) | -0.0210 | 0.0154 | -1.370 | 0.1720 |
| **Policy Makers** | 0.0036 | 0.0007 | 5.110 | 0.0000 |
| **Tax Authorities** | 0.0765 | 0.0204 | 3.750 | 0.0000 |
| **Tax Payers** | 0.0630 | 0.0171 | 3.670 | 0.0000 |
| **Judiciary** | 0.0013 | 0.0013 | 0.950 | 0.3430 |
| **R-Square** | | | | **0.2089** |
| **Adjusted $R^2$** | | | | **0.2005** |
| **F-Value** | | | | **0.0000** |

Dependent Variable: Environmental Tax Adoption

A significant positive relationship was observed between Tax Authorities (TAU) and Environmental Tax Adoption (ETA). Specifically, the regression coefficient of TAU is 0.0765 and a P-value of 0.000. This therefore suggests that there is significant positive relationship between TAU and ETA in Nigeria. Accordingly, this group of stakeholders also supports the adoption of environmental tax in Nigeria. They also viewed the adoption of environmental tax as a step toward ensuring that corporate organizations align with the culture of corporate sustainability and reduce their negative activities on the environment. Moreover, the regression coefficient of TPY is 0.0630 and its P-value is 0.000. This implies that, there is significant positive relationship between TPY and ETA in Nigeria. Accordingly, adoption of environmental tax is an endeavour that should be encourage among corporate

organizations in Nigeria. Finally, the relationship between JRY and ETA is found to be insignificant. This suggests that this group of stakeholders do not see the need to adopt environment taxation among corporate organizations in Nigeria. This may perhaps be due to legal implication of the adoption as well as the need to avoid double taxation as some stakeholders viewed environmental taxation as a double taxation on corporate organizations. Based on the foregoing, this study concludes that most of the stakeholders support the need to adopt environmental tax in Nigeria. They are of the view that introduction of environmental tax will help corporate organizations to better understand the consequences of their actions and help them contribute towards sustainable development. Essentially, the adoption of environmental tax is a medium for searching corporate legitimacy and also as an effective means of improving firms' image and reputation.

## 5. Conclusion and Recommendations

The objective of this study is to examine the perception of stakeholders namely policy makers, tax authorities, tax payers and judiciary on the adoption of environmental tax in Nigeria. A survey research design using questionnaire was used. Data was elicited from 389 respondents from one state each in the three geo-political zones in the North. The study found that three group (policy makers, tax authorities and tax payers) support the adoption of environmental taxation in Nigeria. On the other hand, the judiciary does not seem to support the adoption of environmental taxation in Nigeria. Accordingly, this study concludes that most of the stakeholders support the adoption of environmental taxation in Nigeria. Adoption of environmental tax will be beneficial to the government as well as corporate organizations as it will help in environmental conservation. Therefore, it is believed that the responses of the relevant stakeholders will lead to the emergence of environmental taxation in Nigeria specifically in the context of the transformation of Nigerian tax system. Based on the findings, this study makes the following recommendations:

(i) The Nigerian government should strive to provide a reform in the area of environmental sustainability by introduction of environmental tax in order help in conserving the environment and discourage environmental degradation in the county.

(ii) The government should also provide adequate education and enlightenment to the public on the importance of environmental tax in order to reduce environmental pollution and degradation.

(iii) The government is also enjoined to provide allowances for every corporate entity in term of how much environmental degradation it may allowed and exceeding such level could attract penalties in form of environmental taxation.

(iv) The government should also encourage corporate organizations to adopt the usage of new environmentally friendly technologies so as to reduce environmental degradation and to avoid paying tax.

(v) The government should ensure long-term commitment, increase investment, continuous innovation and collaborations with private sector, non-governmental organizations as well as civil society in order to accelerate green transition.

Finally, the government of Nigeria should no longer be a passive player in the issue of environmental sustainability which is a central issue in the country's present and future. This is because; environmental sustainability affects all aspects of human existence and therefore should be considered as central to economic decision-

making at all level of governance in the country. The government most ensures that environmental sustainability is not held back by political, economic or regulatory obstacles. The government most work towards ensuring huge transformation across all sectors of the economy. Essentially, meeting ambitious sustainability targets requires a bold and whole of society approach which must be sustained by long-term government commitment (Atalla et al., 2022). Environmental taxation is one of such targets.

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