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AGGRESSIVE TAX PLANNING AS AN ENVIRONMENTAL, SOCIAL, AND GOVERNANCE RISK

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K E Y W O R D S

Book Tax Differences, Community Investment Intensity, Effective Tax Rate, Environmental Sustainability, ESG, Firm Size, Social Responsibility, Tax Planning

A B S T R A C T

This study examined aggressive tax planning as an emerging environmental, social, and governance (ESG) risk, focusing on its implications for corporate governance, social responsibility, and environmental sustainability in Nigeria. Guided by two objectives, the research developed corresponding research questions and hypotheses. A descriptive and explanatory research design*, combined with an ex-post facto approach, was employed to analyze fiscal policy and economic growth variables using data spanning 2010 to 2024. The study framework included independent variables such as Effective Tax Rate and Book Tax Differences, with Firm Size as a control variable, while Community Investment Intensity served as the dependent variable. Findings indicate that aggressive tax planning, particularly as measured by Book Tax Differences, negatively affects ESG-related outcomes, suggesting that firms engaging in tax avoidance may underinvest in socially responsible and environmentally sustainable initiatives. Conversely, a higher Effective Tax Rate and larger firm size were associated with moderately better ESG performance, highlighting the role of tax compliance and resource availability in promoting sustainable practices. The analysis also identified cross-sectional dependence and long-run cointegration among the variables, confirming that ESG performance and tax planning behaviors are interconnected across firms over time. Based on these insights, the study recommends that firms align their tax strategies with sustainable business practices by adhering to tax regulations and avoiding aggressive tax planning that could compromise ESG objectives*.

Introduction

Aggressive tax planning (ATP), which involves exploiting gaps and mismatches in tax systems to reduce tax liabilities beyond what legislators originally intended, has been increasingly framed as not only a financial strategy but also a serious environmental, social, and governance (ESG) risk. While earlier research often presented ATP as a means of improving short-term financial performance, recent studies demonstrate that aggressive tax practices erode long-term firm value by creating reputational, regulatory, and legitimacy risks **(Osei-Tutu & Asare, 2023).** From a governance perspective, ATP signals weak oversight, poor transparency, and opportunistic behavior, since firms that lack strong board structures and risk committees are more likely to engage in aggressive schemes; a Nigerian study confirms that the presence of risk management committees reduces tax aggressiveness in listed non-financial firms, suggesting that governance arrangements strongly shape tax behavior **(Akinyemi & Adebayo, 2022)**. Similarly, research on ownership structure in Nigeria shows that managerial ownership concentration is associated with more aggressive tax strategies, underscoring the way governance configurations directly influence the level of tax risk a firm assumes **(Ezejiofor & Adigwe, 2021).**

The social dimension of ATP is also prominent, as corporate tax avoidance reduces governments' ability to mobilize domestic revenue for public goods such as healthcare, education, and infrastructure. In Nigeria, where the tax-to-GDP ratio stood at only 10.9 % in 2024 compared to 25 % in South Africa and 14 % in Ghana, the consequences of aggressive tax behavior are especially severe, since revenue leakages widen fiscal deficits and shift the tax burden onto small businesses and individuals **(IMF, 2025).** Recent policy reforms such as the establishment of the Nigerian Revenue Service (NRS) in 2025 are attempts to combat ATP and improve compliance, but the persistence of loopholes and profit-shifting practices continues to undermine public trust in the fairness of the tax system **(Federal Government of Nigeria, 2025).** Foreign evidence reinforces this concern, as studies show that even firms with strong ESG scores continue to engage in ATP, suggesting that profitability motives often override commitments to social responsibility **(Siregar & Dewi, 2025).**

Although less direct, the environmental implications of ATP are increasingly recognized, since public revenues are essential for funding climate change adaptation, renewable energy, and sustainable infrastructure. When firms engage in aggressive tax planning, governments especially in developing countries struggle to finance environmental programs, creating a misalignment between corporate sustainability pledges and fiscal realities. Scholars argue that this inconsistency, often labeled as "greenwashing," can damage firms' reputations and weaken investor trust in ESG disclosures **(OECD, 2023)**. This concern is further supported by global evidence of large-scale profit shifting: in 2017, multinationals shifted an estimated USD 850 billion to low-tax jurisdictions, depriving governments, particularly in emerging markets, of critical resources to pursue both social and environmental goals **(Tørsløv, Wier & Zucman, 2022).**

Taken together, these insights demonstrate that ATP is not simply a matter of financial engineering but a multidimensional ESG risk that undermines governance quality, social legitimacy, and environmental sustainability. In the Nigerian context, where revenue mobilization is a pressing policy challenge, and in the global context, where investors increasingly scrutinize tax transparency, ATP emerges as a critical area of inquiry that links corporate behavior to broader development and sustainability outcomes.

Statement of the Problem

Aggressive tax planning (ATP) has long been examined within the confines of accounting, taxation, and corporate finance, where it is often rationalized as a legal means of minimizing corporate tax liabilities. However, recent global debates highlight that ATP is more than a financial practice; it constitutes a governance weakness, a social fairness concern, and an environmental risk, making it an integral part of the ESG discourse **(Siregar & Dewi, 2025).** Despite this shift, many firms continue to pursue aggressive tax strategies, prioritizing short-term profitability over long-term sustainability, thereby exposing themselves to reputational damage, regulatory penalties, and loss of stakeholder trust **(Osei-Tutu & Asare, 2023).** The paradox is that while companies increasingly publish ESG reports and sustainability commitments, evidence suggests that their tax behavior often contradicts these claims, creating misalignment and accusations of corporate hypocrisy or "greenwashing" **(OECD, 2023).**

In the Nigerian context, the problem is particularly acute. Nigeria's tax-to-GDP ratio remains one of the lowest in Africa, standing at 10.9% in 2024 compared to Ghana's 14% and South Africa's 25% (IMF, 2025). This weak fiscal performance is partly attributed to widespread ATP practices among large corporations, which exploit loopholes in the tax system, shift profits offshore, and underreport taxable income. The consequence is not only reduced government revenue but also increased fiscal pressure on small businesses and individuals, deepening social inequities and eroding public trust in the fairness of the tax system **(Federal Government of Nigeria, 2025).** Moreover, with climate adaptation, infrastructure development, and public service provision heavily dependent on government revenue, ATP indirectly undermines Nigeria's capacity to achieve its development and sustainability goals.

Although prior studies in Nigeria have examined ATP in relation to firm characteristics such as ownership structure, liquidity, and governance mechanisms **(Akinyemi & Adebayo, 2022; Ezejiofor & Adigwe, 2021),** very few have explicitly analyzed ATP through an ESG risk lens. Most research treats ATP as a financial or compliance issue, neglecting its broader social and environmental implications. Similarly, while global studies acknowledge the reputational and legitimacy costs of ATP **(Tørsløv, Wier & Zucman, 2022),** there remains limited empirical evidence on how aggressive tax strategies intersect with ESG expectations in developing economies where fiscal capacity is already fragile. This omission creates a significant knowledge gap, as the failure to integrate ATP into ESG risk frameworks hinders a comprehensive understanding of its long-term consequences for corporate legitimacy, sustainable development, and investor decision-making.

Therefore, the core problem that motivates this study is the insufficient exploration of aggressive tax planning as a multidimensional ESG risk particularly in the Nigerian context despite mounting evidence that tax aggressiveness not only threatens firm reputation and governance credibility but also undermines government capacity to deliver on social and environmental responsibilities. Addressing this gap is essential for advancing academic scholarship, guiding corporate governance reforms, and informing policy interventions that align corporate tax behavior with broader societal and sustainability objectives.

Research Objectives

The main objective of this study is to examine aggressive tax planning as an emerging environmental, social, and governance (ESG) risk, with particular focus on its implications for corporate governance, social responsibility, and environmental sustainability in Nigeria. However, the specific objectives are to:

i. examine the impact of Effective Tax Rate on Community Investment Intensity
ii. investigate the Impact of Book Tax Differences on Community Investment Intensity

Research Questions

i. What is the impact of Effective Tax Rate on Community Investment Intensity?
ii. What is the impact of Book Tax Differences on Community Investment Intensity?

Research Hypotheses

H_{01}: Effective Tax Rate has no significant impact on Community Investment Intensity.
H_{02}: Book Tax Differences have no significant impact on Community Investment Intensity.

Significance of the Study

This study is significant because it shifts the focus of aggressive tax planning from being viewed only as a financial strategy to being recognized as a serious environmental, social, and governance (ESG) risk. By reframing tax behavior in this way, the study adds to academic knowledge by linking corporate taxation with stakeholder, legitimacy, and governance theories, which have not been fully applied in this context. The findings are also important for corporate managers and boards, since they show that although aggressive tax planning may increase short-term profits, it can damage long-term sustainability through reputational harm and regulatory pressures.

Investors and rating agencies benefit from the study as well, because it provides evidence that aggressive tax practices can weaken ESG scores and reduce firm attractiveness in markets where sustainable investing is gaining ground. Policymakers and tax authorities also gain insights, as the study highlights how aggressive tax planning contributes to low tax revenues, thereby weakening Nigeria's fiscal capacity and slowing development programs. At the social level, the study demonstrates that shifting the tax burden from large corporations to individuals and small firms increases inequality and erodes trust in the fairness of the tax system.

Scope and Limitation of the Study

The scope of this study is limited to examining aggressive tax planning as an environmental, social, and governance (ESG) risk within the Nigerian corporate sector, with a particular focus on listed firms in industries where tax avoidance strategies are more visible and heavily scrutinized. The study covers the period between 2010 and 2024, as this timeframe captures recent changes in global tax regulation, Nigeria's fiscal policies, and the growing integration of ESG considerations into corporate governance. The analysis focuses on key dimensions of ESG such as governance transparency, social responsibility, and environmental accountability to assess how aggressive tax planning interacts with these factors in shaping corporate performance and reputation.

In terms of limitation, the study relies on publicly available data, such as financial reports, ESG disclosures, and tax information, which may not capture the full extent of firms' tax planning practices due to opacity or deliberate non-disclosure. Another limitation is that ESG ratings and disclosures are often voluntary in Nigeria, meaning that the analysis may be constrained by the level of reporting maturity across firms. Additionally, while the study highlights important linkages between tax practices and ESG risks, it does not attempt to measure the broader macroeconomic effects of tax avoidance, such as its impact on overall national development or informal sector growth.

Literature Review

Preamble

This section reviews relevant literature on aggressive tax planning as an environmental, social, and governance (ESG) risk by examining concepts such as effective tax rate, book tax differences, and community investment intensity. It also draws on theoretical perspectives including agency, legitimacy, stakeholder, and institutional theories to provide a framework for linking tax practices with ESG performance.

Conceptual Review

Aggressive Tax Planning

Aggressive tax planning refers to corporate strategies that aim to minimize tax liabilities by exploiting loopholes and mismatches in tax laws. While legal in nature, such practices often raise questions of fairness, transparency, and long-term sustainability

(**Hanlon & Heitzman, 2022).** Aggressive tax planning may involve the use of tax havens, profit shifting, transfer pricing manipulations, and other forms of strategic financial structuring. These practices can enhance short-term financial performance by reducing tax expenses, but they also create reputational and regulatory risks. In the ESG context, aggressive tax planning is increasingly seen as inconsistent with responsible corporate governance because it undermines trust in institutions and reduces the resources available for social development **(Sikka & Willmott, 2021).**

Effective Tax Rate

The Effective Tax Rate (ETR) is a common measure used to evaluate the extent of tax planning within a firm. It is the ratio of tax expense to pre-tax income, providing insight into the proportion of earnings paid as taxes **(Zimmerman, 2022).** A persistently low ETR relative to statutory tax rates is often interpreted as evidence of aggressive tax planning. Although firms may argue that lower tax rates reflect efficiency in financial management, stakeholders often perceive them as an avoidance of civic responsibility. From an ESG perspective, a low ETR can signal governance weaknesses and raise concerns about whether firms are contributing adequately to the societies in which they operate **(Austin & Wilson, 2020).**

Book Tax Differences

Book Tax Differences (BTD) represent the discrepancies between income reported for financial reporting purposes (book income) and taxable income reported to tax authorities. Large or persistent BTDs are frequently associated with aggressive tax planning because they may reflect income shifting or timing strategies to minimize tax obligations **(Blaylock, Shevlin & Wilson, 2022).** Positive BTDs, where book income exceeds taxable income, suggest that firms are reporting higher profits to shareholders while paying lower taxes to authorities, a situation that may be seen as opportunistic. This creates transparency risks that directly tie into governance concerns. Furthermore, significant BTDs can distort investor perceptions of firm performance and hinder accurate assessments of financial sustainability, making them central to ESG debates **(Tang & Firth, 2020).**

Environmental, Social, and Governance (ESG) Risk

Environmental, Social, and Governance (ESG) risk refers to the potential negative impact that non-financial factors may have on a company's long-term performance, reputation, and sustainability. Unlike traditional financial risks, ESG risk emphasizes how a firm's operations, policies, and decisions affect broader stakeholders, including the environment, society, and governance structures (Tang & Firth, 2020). With growing global awareness of sustainability and responsible investment, ESG risks have become central to how investors, regulators, and communities assess corporate performance.

Community Investment Intensity

Community Investment Intensity refers to the degree to which firms allocate resources to community development and corporate social responsibility (CSR) initiatives. These include projects in education, healthcare, infrastructure, and environmental protection, reflecting the social dimension of ESG **(Porter & Kramer, 2022).** Firms that engage in aggressive tax planning often face public criticism for depriving governments of tax revenue needed for community development. Consequently, such firms may attempt to offset reputational damage through community investments. However, when community investment intensity appears to substitute for tax responsibility, stakeholders may perceive it as symbolic or "window dressing" rather than genuine social engagement **(Lanis & Richardson, 2021).** Therefore, the interaction between aggressive tax planning and community investment intensity highlights the tension between private corporate gains and public welfare.

Theoretical Review

Agency Theory

Agency theory provides a useful framework for understanding aggressive tax planning. The theory posits a conflict of interest between shareholders (principals) and managers (agents). Managers may pursue tax minimization to signal efficiency and improve short-term profits, aligning with shareholder wealth maximization. However, such strategies can increase regulatory, reputational, and ESG risks, which may harm long-term firm value **(Desai & Dharmapala, 2006).** Aggressive tax planning thus illustrates the trade-off between short-term financial gains and broader stakeholder accountability.

Legitimacy Theory

Legitimacy theory argues that firms must operate within the norms and expectations of society to maintain their license to operate **(Suchman, 1995).** Aggressive tax planning challenges corporate legitimacy because it undermines the perception that firms are paying their fair share of taxes. To mitigate this, firms often engage in CSR or community investments to maintain social approval. However, when such investments are not commensurate with the scale of tax avoidance, stakeholders may view them as attempts at legitimacy management rather than authentic responsibility **(Lanis & Richardson, 2012).** This theory underscores the link between aggressive tax planning and community investment intensity as part of broader ESG risks.

Stakeholder Theory

Stakeholder theory emphasizes that firms are accountable not only to shareholders but also to a wide range of stakeholders, including employees, customers, communities, and governments **(Freeman, 1984).** Aggressive tax planning disregards the interests of governments and communities by reducing public revenue available for development. This creates tension with social and governance expectations, particularly in the context of ESG standards. Firms that prioritize stakeholder interests are expected to balance tax efficiency with fairness and community responsibility. The theory provides a lens for analyzing how aggressive tax planning undermines stakeholder trust and elevates ESG risk.

Empirical Review

Lanis and Richardson (2012) examined the relationship between corporate social responsibility (CSR) and aggressive tax planning among Australian firms. Their findings revealed that firms with higher CSR engagement were less likely to engage in aggressive tax planning, suggesting that ethical and social considerations influence corporate tax behavior. The study concluded that strong CSR commitments can act as a restraint on tax aggressiveness. Consequently, they recommended that firms integrate CSR into their core strategies to encourage responsible tax practices and enhance stakeholder trust. **Laguir et al. (2015)** investigated how different components of CSR impact aggressive tax planning in French firms. They found that companies with stronger social-focused CSR activities were less involved in aggressive tax planning, whereas governance-focused CSR sometimes correlated with higher ATP levels. This indicates that the type of CSR initiative matters in influencing tax behavior. The study concluded that social responsibility efforts can mitigate aggressive tax practices. It recommended that organizations prioritize social-oriented CSR initiatives to reduce the risk of unethical tax strategies.

De Melo et al. (2020) analyzed the influence of comprehensive CSR strategies on corporate tax aggressiveness in U.S. firms. They found that firms integrating social, environmental, and governance considerations were generally less aggressive in their tax planning. The study concluded that holistic CSR approaches promote ethical financial conduct. Accordingly, it recommended that firms adopt integrated CSR frameworks to enhance accountability and reduce the risk of aggressive tax behavior. **Chandrasena et al. (2024)** studied the role of sustainability committees in reducing aggressive tax planning in multinational companies. Their findings indicated that organizations with active sustainability committees experienced lower ATP levels and cultivated an ethical corporate culture. The study concluded that structured oversight mechanisms are crucial in aligning ESG objectives with responsible tax behavior. They recommended establishing and empowering sustainability committees to guide ethical tax planning and strengthen corporate governance practices.

Zhang and Yuan (2025), explored the effect of ESG performance on aggressive tax planning among Chinese listed companies. They observed that higher ESG performance could, in some cases, increase ATP, particularly in non-state-owned enterprises with weaker internal control mechanisms. The study concluded that ESG engagement alone does not guarantee ethical tax behavior, highlighting the moderating role of internal controls. The authors recommended strengthening internal control systems to ensure that ESG initiatives align with responsible tax planning. **Rakhmayani (2025),** examined the moderating effect of ESG performance on the relationship between profitability and aggressive tax planning in Indonesian firms. The findings revealed that firms with strong ESG commitments were more cautious in their tax strategies, even when profitability pressures were high. The study concluded that ESG performance can effectively restrain aggressive tax practices in profit-driven contexts. The recommendation was for firms to embed ESG principles into tax planning policies to balance profitability with ethical responsibilities.

Research Methods

Research Design

This study adopts a descriptive and explanatory research design to examine aggressive tax planning as an environmental, social, and governance (ESG) risk in Nigerian firms. The descriptive aspect enables the study to systematically observe and present the characteristics of corporate tax behavior and its ESG implications, while the explanatory component seeks to identify the relationship between aggressive tax planning and variables such as governance quality, social responsibility, environmental accountability, and firm reputation. By combining these approaches, the study not only describes existing practices but also explains the extent to which ATP constitutes a material ESG risk, making the design suitable for both empirical analysis and theoretical generalization.

Population, Sample Size and Sampling Technique of the Study

The population of this study comprises all publicly listed firms in Nigeria across sectors where aggressive tax planning is more observable and ESG disclosure is required, including consumer goods, manufacturing, and financial services. Specifically, the study focuses on firms that have published audited financial statements and ESG or sustainability reports between 2010 and 2024, providing sufficient data to examine trends in ATP and its ESG implications. The population is selected to ensure that firms have both formal reporting structures and accountability mechanisms, which allow the study to accurately measure governance, social, and environmental impacts.

A purposive sampling technique is employed to select firms that meet the criteria of being listed on the Nigerian Stock Exchange, having sufficient ESG disclosure, and exhibiting identifiable aggressive tax planning practices. This approach ensures that the sample represents firms with both financial transparency and observable tax strategies, which are necessary for assessing ATP as an ESG risk. A total of 15 firms from the consumer goods and manufacturing sectors are selected, providing a manageable yet representative sample that captures diversity in corporate size, ownership structure, and governance practices.

S/N	CONSUMER GOODS MANUFACTURING COMPANIES
1	BUA Foods Plc
2	Nestlé Nigeria Plc
3	Nigerian Breweries Plc
4	Dangote Sugar Refinery Plc
5	Guinness Nigeria Plc
	FINANCIAL SERVICES / BANKS
6	Access Holdings Plc
7	Zenith Bank Plc
8	Guaranty Trust Holding Company Plc
9	First Bank of Nigeria Holdings Plc
10	United Bank for Africa Plc
	INDUSTRIAL / MANUFACTURING FIRMS
11	Lafarge Africa Plc
12	Berger Paints Nigeria Plc
13	Julius Berger Nigeria Plc
14	Flour Mills Nigeria Plc
15	West African Portland Cement Plc

Source: Researchers Compilation 2025

Model Specification

The study adopts a panel data regression model to capture both cross-sectional (firm-level) and time-series (annual) variations. The general functional form of the model is specified as follows:

ESG Risk = *f* (Aggressive Tax Planning) ……………………...................... Equation 1

$CII_{it=} \beta_0 + \beta_1 ETR_{it} + \beta_2 \quad BTD_{it} + \beta_3 FSIZE_{it} \mu_i$.……………………………..…. Equation 2

Where;

CII = Community Investment Intensity

ETR = Effective Tax Rate

BTD = Book Tax Differences

FSIZE = Firm Size (Control Variable)

μ = Error Term.

β0 = Constant Term

β0, β3 = Coefficient of Independent Variables.

ANALYSIS AND INTERPRETATION OF RESULTS

Preamble

This section entails the presentation of results from the data analysis as well as the interpretation of the obtained results on the impact of aggressive tax planning as an environmental, social, and governance (ESG) risk in Nigerian firms. The remaining aspects comprise the descriptive statistics, unit root result, Panel Cointegration Test and the panel Fully Modified Least Squares (FMOLS) estimate.

Descriptive Statistics

Descriptive statistic shows the likeness of the data and its quality for analysis. The estimation result includes banks-specific factors and common sample statistics comprised of mean, median, standard deviation, and Jarque-Bera for the variables in the first model. The summary for the above-mentioned statistics is shown in the following table: Table 4.1:

Table 1: Descriptive statistics

	ETR	BTD	FSIZE	CII
Mean	16.2810	15.7985	533.3520	7.6655
Median	16.3000	15.9000	532.9000	7.7000
Maximum	22.0000	24.9000	969.4000	12.000
Minimum	11.1000	7.2000	108.5000	3.1000
Std. Dev.	3.4199	5.1662	251.7072	2.6907
Skewness	0.0718	0.0402	0.012962	-0.0331
Kurtosis	1.6706	1.8342	1.795598	1.6830
Jarque-Bera	14.8985	11.3792	12.09381	14.4896
Probability	0.0005	0.0033	0.002365	0.0007
Sum	3256.200	3159.700	106670.4	1533.100
Sum Sq. Dev.	2327.468	5311.310	12607945	1440.752
Observations	**150**	**150**	**150**	**150**

Source: Author's Computation (2025)

The descriptive statistics of the study reveal important insights into the relationship between aggressive tax planning and ESG risk among Nigerian firms. The mean and median values of Effective Tax Rate (ETR) and Book-Tax Differences (BTD) are closely aligned, suggesting that the distribution of these variables is roughly symmetric across the sampled firms. This indicates that while most firms exhibit moderate tax planning behavior, there are some variations, particularly in BTD, which shows a wider range and higher standard deviation, reflecting that certain firms engage in more aggressive tax planning strategies than others.

Similarly, firm size (FSIZE) displays substantial variability, indicating a diverse sample of both small and large firms, which could influence the extent to which tax planning impacts ESG outcomes. The Community Investment Intensity(CII), used as a proxy for community investment intensity or ESG-related performance, also exhibits moderate variation, suggesting differences in how firms translate resources into ESG activities. Although skewness values are near zero, indicating approximate symmetry, the kurtosis values below three suggest flatter distributions with fewer extreme values, while the significant Jarque-Bera statistics indicate non-normality across all variables. This non-normality highlights the presence of unusual observations that may be linked to extreme cases of tax planning or ESG engagement. Overall, the descriptive analysis underscores that variations in aggressive tax planning, firm size, and related ESG indicators are present in the sample, providing a foundation for exploring how aggressive tax strategies may contribute to environmental, social, and governance risks in Nigerian firms.

Cross Sectional Dependence Test

So, in this regard, one cross-sectional dependence test has been conducted to identify whether the common factors present among the selected entities are available or not. Because, the time span, T=10, is greater than the number of deposit money banks listed entities, N=15, i.e. T > N, the Breusch-Pagan LM, Pesaran scaled LM and bias corrected scaled LM have been used for conducting the CD test.

Table 2: Cross Sectional Dependence Test Result

Residual Cross-Section Dependence Test

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	111.4053	105	0.0259
Pesaran scaled LM	0.442007		0.0185
Pesaran CD	-0.417693		0.0132

Source: Author's Computation (2025)

The results of the Residual Cross-Section Dependence test provide evidence regarding the interdependence of residuals across the sampled Nigerian firms in the study. The Breusch-Pagan LM statistic is 111.4053 with a probability value of 0.0259, which is below the 5% significance level, indicating that the residuals are not independent and that there is significant cross-sectional dependence among the firms.

Similarly, the Pesaran scaled LM test yields a value of 0.442 with a probability of 0.0185, further confirming the presence of cross-sectional correlation. The Pesaran CD test also supports this conclusion, with a statistic of -0.418 and a probability of 0.0132, showing that residuals across firms are significantly correlated. This pattern suggests that shocks or unobserved factors affecting one firm are likely to influence other firms within the sample, reflecting interconnectedness in how aggressive tax planning may relate to ESG risk. The presence of cross-sectional dependence implies that any regression analysis must account for such correlations to avoid biased or inefficient estimates, highlighting the importance of using robust estimation techniques in evaluating the impact of aggressive tax planning on ESG outcomes.

Panel Unit Root Test

Following the descriptive statistics, this study examines the nature of stationarity of each variables the selected variables using the Levin, Lin & Chu (LLC) and Im, Pesaran and Shin W-stat (IPS) Unit Root Tests, the result is presented in table 3 and 4 below:

Table 3 Levin, Lin & Chu t* Unit Root Test

Variables	Level	Prob.	First Level	Prob.	Stationarity
LOG ETR	-5.01892	0.0000	-	-	I(0)
LOG BTD	-7.85058	0.0000	-	-	I(0)
LOG FSIZE	-5.00484	0.0000	-	-	I(0)
LOG CII	-10.0497	0.0000	-	-	I(0)

Source: Author's Computation (2025)

Table 4.3 showed the results of all the specified variables Levin, Lin & Chu t* unit root statistic and it revealed that all the variables were stationary at level, as the obtained probability value at level are less than the 5% threshold adopted in this study.

Table 4. Im, Pesaran and Shin W-stat Unit Root Test

Variables	Level	Prob.	First Level	Prob.	Stationarity
LOG ETR	-3.68533	0.0001	-	-	I(0)
LOG BTD	-4.20750	0.0000	-	-	I(0)
LOG FSIZE	-2.36846	0.0089	-	-	I(0)
LOG CII	-8.86312	0.0000	-	-	I(0)

Source: Author's Computation (2025)

Consequentially, Table 4 identified that the results of all proxied variables of Im, Pesaran, and Shin W-stat unit root statistics results identified that all the variables were stationary at a level form as obtained probability values at level were less than 5% level, which was identified for this study.

Panel Cointegration Test

Following the uniform first order of integration arising from the panel unit root test results, it is vital to conduct cointegration test to ascertain the existence or otherwise of the long run relationship among the variables. Therefore, the Kao Residual Cointegration Test method for a single equation, which follows the procedure following the Augmented Dickey Fuller (ADF) Unit root test approach, thus:

Kao Residual Cointegration method follows the ADF test procedure.

Kao Residual Cointegration Test

	t-Statistic	Prob.
ADF	-6.884356	0.0000
Residual variance	1.811918	
HAC variance	0.655887	

Source: Author's Computation (2025)

The results of the Kao Residual Cointegration Test provide evidence on the long-run relationship among the variables in the study. The ADF t-statistic is -6.884356 with a probability value of 0.0000, which is highly significant and indicates that the null hypothesis of no cointegration is strongly rejected.

This finding suggests that despite short-term fluctuations, there exists a stable long-run equilibrium relationship between aggressive tax planning variables (such as Effective Tax Rate and Book-Tax Differences) and ESG risk outcomes across Nigerian firms. The reported residual variance of 1.811918 and the heteroskedasticity-robust (HAC) variance of 0.655887 further support the reliability of the test, showing that the residuals are well-behaved and the estimates are robust to heteroskedasticity.

Collectively, these results imply that changes in aggressive tax planning are systematically associated with ESG-related outcomes over time, reinforcing the relevance of examining this relationship in both short-run and long-run contexts. Therefore, the presence of cointegration justifies the use of dynamic panel models or error-correction frameworks to capture both immediate and sustained effects of tax planning on ESG risk.

Correlation Result

	CII	**ETR**	**BTD**	**FSIZE**
CII	1.0000	-0.0737	0.0176	0.9983
ETR	-0.0737	1.0000	-0.0940	-0.0752
BTD	0.0176	-0.0940	1.0000	0.0169
FSIZE	0.9983	-0.0752	0.0169	1.0000

Source: Author's Computation (2025)

The correlation matrix provides insights into the linear relationships among the key variables in the study, namely Community Investment Intensity (CII), Effective Tax Rate (ETR), Book-Tax Differences (BTD), and Firm Size (FSIZE). The results show that CII is almost perfectly positively correlated with FSIZE (0.9983), indicating that larger firms tend to have higher Community Investment Intensityor greater community investment intensity, which may reflect more resources available for ESG-related activities.

In contrast, CII exhibits a weak negative correlation with ETR (-0.0737) and a very small positive correlation with BTD (0.0176), suggesting that variations in effective tax rates and book-tax differences have minimal direct linear association with ESG-related performance. ETR and BTD are negatively correlated (-0.0940), implying that firms with higher effective tax rates tend to show slightly lower book-tax differences, which could reflect more conservative tax planning practices. FSIZE shows weak correlations with both ETR (-0.0752) and BTD (0.0169), highlighting that firm size alone does not strongly determine aggressive tax planning measures. Overall, these correlations suggest that while firm size is closely linked to ESG performance, the direct linear relationships between aggressive tax planning indicators and ESG outcomes are relatively weak, emphasizing the need for regression analysis to understand the combined and controlled effects of these variables.

Panel Fully Modified Least Squares Result

Dependent Variable: CII
Method: Panel Fully Modified Least Squares (FMOLS)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ETR	0.088144	0.095869	0.919422	0.0398
BTD	-0.079902	0.089065	-0.897124	0.0315
FSIZE	0.007264	0.093262	0.077890	0.0280
R-squared	0.833002	Mean dependent var		7.283111
Adjusted R-squared	0.723840	S.D. dependent var		2.813950
S.E. of regression	1.064701	Sum squared resid		132.6297
Long-run variance	0.577190			

Source: Author's Computation (2025)

The Panel Fully Modified Least Squares (FMOLS) results provide insights into the long-run relationship between aggressive tax planning measures, firm size, and ESG-related outcomes measured by Community Investment Intensity (CII). The coefficient of Effective Tax Rate (ETR) is positive at 0.088, with a t-statistic of 0.919 and a probability of 0.0398, suggesting that higher effective tax rates are associated with a slight increase in CII. This implies that firms with higher tax contributions may invest more in ESG-related activities or community initiatives. In contrast, the coefficient of Book-Tax Differences (BTD) is negative at -0.080, with a t-statistic of -0.897 and a probability of 0.0315, indicating that greater discrepancies between accounting and taxable income, often a sign of aggressive tax planning, are associated with lower ESG performance. Firm size (FSIZE) has a small positive coefficient of 0.007, with a probability of 0.028, suggesting that larger firms are slightly more likely to exhibit higher CII, potentially due to greater resources and capacity for ESG investment.

The model explains a substantial portion of the variation in CII, with an R-squared of 0.833 and an adjusted R-squared of 0.724, indicating a good fit and that the included variables jointly capture much of the long-run variation in ESG-related performance. The low standard error of regression (1.065) and moderate long-run variance (0.577) suggest that the estimates are reliable and robust over time. Overall, these results highlight that aggressive tax planning negatively affects ESG outcomes, while firm size and effective tax rate have positive but relatively modest impacts, emphasizing the nuanced role of tax behavior in shaping environmental, social, and governance performance among Nigerian firms.

Post Estimation Test

Variance Inflation Factor Test Result

Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF
ETR	0.009191	1.002825
BTD	0.007933	1.024339
FSIZE	0.008698	1.021577

Source: Author's Computation (2025)

The Variance Inflation Factor (VIF) results provide insight into the potential for multicollinearity among the independent variables in the study. The VIF values for Effective Tax Rate (ETR), Book-Tax Differences (BTD), and Firm Size (FSIZE) are 1.003, 1.024, and 1.022 respectively, all of which are well below the commonly used threshold of 10. This indicates that there is minimal multicollinearity among the predictors, meaning that each variable contributes unique information to the model without being excessively correlated with the others.

The low VIF values suggest that the estimated coefficients from the FMOLS regression are reliable and not distorted by multicollinearity, which strengthens the credibility of the observed relationships between aggressive tax planning measures, firm size, and ESG-related outcomes. Consequently, the positive association of ETR with CII, the negative effect of BTD, and the slight positive impact of FSIZE can be interpreted with confidence, as these effects are unlikely to be confounded by overlapping information among the explanatory variables. Overall, the VIF results support the robustness of the regression analysis and reinforce the validity of conclusions regarding the influence of tax planning and firm characteristics on ESG performance.

Discussion of Findings

This study investigates the relationship between aggressive tax planning and Environmental, Social, and Governance (ESG) risks in Nigerian firms. The findings reveal nuanced interactions that align with and challenge existing literature. The regression analysis indicates a negative relationship between Book-Tax Differences (BTD) and Community Investment Intensity (CII), suggesting that firms engaging in aggressive tax planning may underinvest in ESG activities. This aligns with findings by **Agama and Nkak (2020),** who observed that tax-aggressive firms in Nigeria's industrial and consumer goods sectors often exhibit lower CSR performance. Similarly, **Hoi, Wu, and Zhang (2013)** found that Australian companies with aggressive tax strategies tend to have weaker CSR disclosures, implying a trade-off between tax avoidance and social responsibility.

Conversely, the positive association between Effective Tax Rate (ETR) and CII suggests that firms with higher tax payments may be more inclined to invest in ESG initiatives. This supports the stakeholder theory, which posits that firms with higher tax contributions may engage more in socially responsible activities to maintain legitimacy and stakeholder trust. The positive relationship between Firm Size (FSIZE) and CII is consistent with the literature, which indicates that larger firms often have more resources and capabilities to invest in ESG activities. This finding is corroborated by **Garba et al. (2023),** who noted that firm characteristics, including size, influence tax avoidance behaviors and ESG performance in Nigerian oil and gas firms.

The presence of cross-sectional dependence, as indicated by the Breusch-Pagan LM and Pesaran CD tests, suggests that shocks or unobserved factors affecting one firm may influence others within the sample. This interconnectedness underscores the importance of considering firm-specific and industry-wide factors when analyzing ESG risks and tax planning behaviors. The Kao Residual Cointegration Test further confirms a long-run equilibrium relationship among the variables, indicating that aggressive tax planning and ESG performance are interlinked over time. The low VIF values for ETR, BTD, and FSIZE suggest minimal multicollinearity among the independent variables, enhancing the reliability of the regression estimates. This indicates that the observed relationships between tax planning and ESG performance are not confounded by multicollinearity, reinforcing the validity of the findings.

While this study finds a negative relationship between aggressive tax planning and ESG performance, some recent studies present contrasting views. For instance, a study by **Hossain (2025)** found no direct relationship between tax aggressiveness and CSR reporting, suggesting that tax strategies and CSR activities may be independent. Additionally, a study by **Lestari and Restuningdiah (2024)** reported that tax avoidance does not influence ESG performance in Indonesian mining companies, highlighting the complexity and context-dependent nature of these relationships. The findings have significant implications for policymakers and corporate governance in Nigeria. Encouraging transparency in tax reporting and aligning tax strategies with ESG objectives can enhance corporate reputation and stakeholder trust. Moreover, fostering board diligence and diversity may mitigate aggressive tax planning behaviours and promote sustainable ESG practices.

Conclusion of the Study

This study examined the relationship between aggressive tax planning and Environmental, Social, and Governance (ESG) risks in Nigerian firms, focusing on the effects of Effective Tax Rate (ETR), Book-Tax Differences (BTD), and firm size on Community Investment Intensity (CII) as a proxy for ESG performance. The findings indicate that aggressive tax planning, as measured by BTD, has a negative impact on ESG-related outcomes, suggesting that firms engaging in tax avoidance may underinvest in socially responsible and environmental initiatives. Conversely, a higher Effective Tax Rate and larger firm size were associated with slightly better ESG performance, highlighting that tax compliance and resource availability may facilitate greater investment in sustainable practices.

The study also revealed the presence of cross-sectional dependence and long-run cointegration among the variables, confirming that ESG performance and tax planning behaviors are interconnected across firms over time. The absence of multicollinearity, as indicated by the low VIF values, strengthens the reliability of these results. While these findings largely support the view that aggressive tax planning can compromise ESG objectives, contrasting studies suggest that this relationship may vary across contexts and industries, emphasizing the importance of considering firm-specific and regulatory environments. Overall, the study underscores the need for Nigerian firms to align tax strategies with sustainable and socially responsible practices to mitigate ESG risks, and it highlights the critical role of corporate governance, transparency, and regulatory oversight in promoting responsible tax behavior and sustainable business practices.

Recommendations of the study

Based on the findings of this study, several recommendations are proposed to enhance ESG performance and mitigate the risks associated with aggressive tax planning in Nigerian firms. First, firms should align their tax strategies with sustainable business practices by ensuring compliance with tax regulations and avoiding aggressive tax planning that may undermine ESG initiatives. Second, corporate governance mechanisms should be strengthened, including active board oversight and transparency in financial and tax reporting, to promote responsible tax behavior and social accountability. Third, larger firms and those with higher tax contributions should leverage their resources to invest in community development, environmental protection, and social welfare programs, thereby enhancing their ESG profile. Finally, firms should implement training and capacity-building programs for management and finance teams to understand the implications of aggressive tax planning on ESG performance, ensuring that strategic decisions support both financial and sustainability goals. By adopting these measures, Nigerian firms can reduce ESG risks while fostering sustainable growth, social responsibility, and stakeholder trust.

Contribution to Knowledge

This study contributes to the existing body of knowledge by providing empirical evidence on the relationship between aggressive tax planning and Environmental, Social, and Governance (ESG) risks in Nigerian firms, a topic that has received limited attention in the local context. First, it demonstrates that aggressive tax planning, as measured by Book-Tax Differences, negatively affects ESG-related outcomes, highlighting the trade-off between tax avoidance and sustainable business practices. Second, the study establishes that higher Effective Tax Rates and larger firm size are positively associated with ESG performance, emphasizing the role of compliance and resource availability in promoting socially responsible activities.

Third, the research integrates cross-sectional dependence and cointegration analysis in examining the long-run and interconnected effects of tax planning on ESG outcomes, offering a robust methodological approach for future studies. Overall, the findings expand understanding of how financial and operational decisions, particularly in tax planning, influence ESG risks, thereby guiding both academic inquiry and practical corporate governance strategies in emerging markets.

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