

Tax Avoidance and Earnings Management of Listed Consumer Goods Firms in Nigeria

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ABSTRACT

This study examined the relationship between tax avoidance and earnings management among listed consumer goods firms in Nigeria. Five tax-avoidance proxies were employed: effective tax rate (ETR), cash effective tax rate (CETR), book-tax difference (BTD), debt tax shield (DTS), and non-debt tax shield (NDTS); earnings management was proxied by scaled discretionary accruals derived as the difference between profit after tax and net operating cash flow, divided by total assets. The study adopted an ex-post facto research design, drawing audited annual report data from 12 listed consumer goods firms for 2016–2025, yielding a balanced panel of 120 firm-year observations. The study drew on Agency Theory, Positive Accounting Theory, and Signalling Theory. We used panel least squares regression, supported by Spearman rank correlation, variance inflation factors, and Breusch-Pagan-Godfrey heteroscedasticity diagnostics, in EViews 10.0. Results show that ETR had a negative and insignificant relationship with discretionary accruals ($\beta = -0.0031$; $p = 0.4226$); CETR had a positive and insignificant relationship ($\beta = 0.0044$; $p = 0.8479$); BTD had a positive and insignificant relationship ($\beta = 0.7177$; $p = 0.0880$); DTS had a negative and insignificant relationship ($\beta = -0.0122$; $p = 0.3431$); and NDTS had a negative and statistically significant relationship with discretionary accruals ($\beta = -1.5793$; $p = 0.0484$). Only the non-debt tax shield independently constrains discretionary accruals at the 5% significance level. The study recommends stronger disclosure of tax reconciliations and depreciation policies, closer review of book-tax differences by regulators and auditors, and a multi-indicator approach to tax-risk assessment by the Federal Inland Revenue Service.

Keywords: tax avoidance; earnings management; discretionary accruals; effective tax rate; non-debt tax shield; consumer goods.

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1. INTRODUCTION

The growing complexity of multinational operations, digital commerce, and cross-border financing has intensified corporate tax planning in developing economies, including Nigeria. Tax planning involves making conscious efforts to consider the tax a taxpayer will pay in the future and how to minimise it. It involves anticipating circumstances and identifying opportunities to minimise or defer tax liabilities within the law. It involves arranging affairs to ensure that the maximum allowances, exemptions and reliefs are enjoyed (Akpanowo *et al*, 2024). Tax avoidance, an aspect of tax planning, is the legal structuring of financial affairs to minimise tax liability without violating applicable law; it occupies a contested space between legitimate fiscal efficiency and aggressive exploitation of regulatory gaps

(Paulus & Tarmidi, 2025; Ustadza & Firmansyah, 2023). Listed consumer goods firms in Nigeria face simultaneous pressure to remain price-competitive amid inflation and currency volatility, and to meet investor expectations regarding reported earnings. These dual pressures create conditions under which tax planning and earnings management may interact systematically, as both practices draw on the same reservoir of managerial discretion over financial reporting outcomes (Sharaf *et al.*, 2026; Nugrahani *et al.*, 2025).

Earnings management is conceptually defined as the intentional exercise of managerial judgment in the preparation of financial reports to influence reported earnings, typically in pursuit of specific performance, contractual, or market-related objectives. It arises

whenever managers exercise discretion over accounting estimates, accrual recognition, or the timing and structuring of real business activities in ways that alter financial outcomes without necessarily breaching formal accounting standards. Earnings management encompasses activities carried out with the intent to mislead stakeholders about a firm's true underlying economic performance, a definition that emphasises the practice's deceptive or opportunistic dimension rather than treating it as a neutral exercise of legitimate managerial judgment (Delgado *et al.*, 2023; Sadjarto *et al.*, 2024). Where governance monitoring is weak and regulatory enforcement is inconsistent, characteristics broadly documented in the Nigerian corporate environment, the opportunity for tax avoidance and earnings management to reinforce each other is enhanced (Egbadju, 2024; Efenyumi & Nworie, 2025; Ndum, 2020; Akpan *et al.*, 2025).

While managerial discretion in financial reporting is sometimes framed positively, as a mechanism that enhances the flexibility and informativeness of financial reports, the dominant view within the literature associates such discretion with reduced transparency and diminished financial reporting quality (Gündüz, 2025). Earnings management has consequently become a central concern in contemporary discussions of corporate governance, managerial accountability, and investor protection, given its potential to distort the information available to capital market participants (Uwah & Akpan, 2019; Maqsood *et al.*, 2024). Nigeria is estimated to lose approximately \$2.9 billion annually to corporate tax avoidance,

reinforcing the need for evidence-based regulatory responses (Ali *et al.*, 2024). Despite this, the Nigerian literature lacks empirical evidence on the specific relationship between tax avoidance and earnings management within the consumer goods sector, a sector central to domestic consumption, employment, and non-oil tax revenue.

Existing Nigerian studies examine tax planning across diversified or banking samples (Egbadju, 2024; Ndum, 2020; Kadir, 2025) or focus on manufacturing firms with narrow samples (Okeke, 2022). No dedicated study has jointly examined five complementary tax-avoidance measures alongside earnings management specifically for listed consumer goods firms in Nigeria. This study addresses that gap. The main objective is to determine the relationship between tax avoidance, proxied by effective tax rate (ETR), cash effective tax rate (CETR), book-tax difference (BTD), debt tax shield (DTS), and non-debt tax shield (NDTS), and earnings management, proxied by discretionary accruals, over the period 2016–2025. Five null hypotheses are tested. The findings provide sector-specific evidence for the Financial Reporting Council of Nigeria, the Securities and Exchange Commission, the Federal Inland Revenue Service, investors, auditors, and academic researchers.

2. LITERATURE REVIEW

2.1 Conceptual review

The conceptual relationships among the variables are depicted in Figure 1 below;

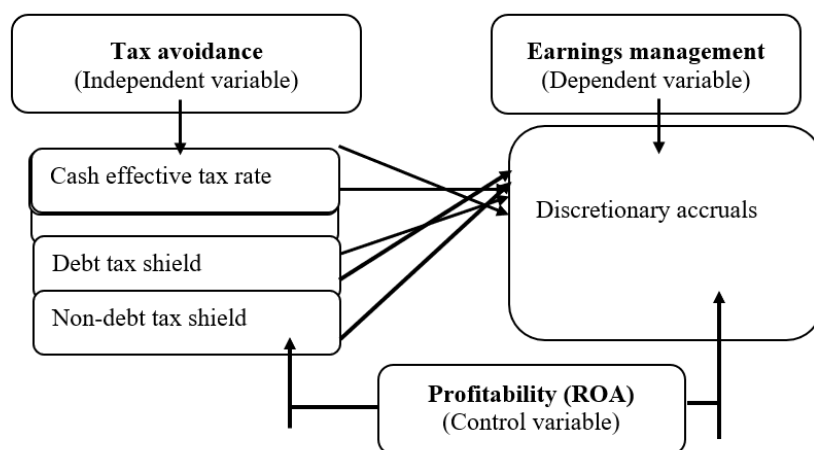


Fig. 1: Conceptual framework of variables
Source: Researcher's compilation (2026)

2.1.1 Tax avoidance and its measurement

Tax avoidance is the deliberate structuring of a firm's financial and operational affairs to reduce tax liability within the law. While distinct from illegal tax evasion, aggressive tax avoidance can stretch the intent of legislation and generate reputational and governance risks (Paulus & Tarmidi, 2025; Delgado *et al.*, 2023).

Because tax avoidance encompasses a spectrum of strategies, from straightforward exploitation of incentives to complex intra-group financing and depreciation policy choices, no single proxy can adequately capture its full scope (Ustadza & Firmansyah, 2023; Nugrahani *et al.*, 2025). This study employs five complementary measures.

The effective tax rate (ETR), calculated as tax expense divided by pre-tax accounting income, is the most widely applied proxy. A lower ETR signals greater tax avoidance, since it reflects a smaller actual tax burden relative to reported profit (Amelinda & Kuntadi, 2025; Maqsood *et al.*, 2024; Owusu *et al.*, 2023). The cash effective tax rate (CETR) excludes deferred tax expense and captures only taxes actually paid in cash; persistently low CETR over multiple periods is more indicative of deliberate avoidance than transient timing differences (Sharaf *et al.*, 2026; Siska *et al.*, 2024; Elisa *et al.*, 2025). Book-tax difference (BTD) measures the divergence between accounting profit and taxable income, capturing both temporary differences that reverse over time and permanent differences associated with aggressive tax positioning (Efenyumi & Nworie, 2025; Sharaf *et al.*, 2026; Agustin *et al.*, 2025). Debt tax shield (DTS), measured as the ratio of interest expense to earnings before interest and tax (EBIT), reflects the tax saving derived from the deductibility of interest on debt, consistent with the capital structure proposition of Modigliani and Miller (1963), as operationalised in the literature (Gabrielli, 2023; Ujah *et al.*, 2026; Omogor & Jeroh, 2025). Non-debt tax shield (NDTS) captures the tax benefit derived from depreciation, amortisation, and related non-interest deductions relative to total assets, providing an alternative tax shelter that does not require additional leverage (DeAngelo & Masulis, 1980; Gao, 2021; Susilawaty, 2021).

2.1.2 Earnings management and discretionary accruals

Earnings management is the intentional use of managerial judgment to alter reported financial outcomes to meet performance, contractual, or market objectives, either through accrual-based adjustments or by manipulating real business activities (Delgado *et al.*, 2023; Efenyumi & Nworie, 2025). Accrual-based earnings management, the primary focus of this study, operates through discretionary adjustments to provisions, depreciation, revenue recognition, and other estimates without altering underlying business operations. Discretionary accruals, estimated as the residual of a regression of total accruals on non-discretionary drivers, represent the component of reported earnings most susceptible to managerial opportunism and therefore constitute the dominant proxy for accrual-based earnings management in the empirical literature (Paulus & Tarmidi, 2025; Sadjarto *et al.*, 2024; Delgado *et al.*, 2023). This study measures discretionary accruals as profit after tax minus net operating cash flow, scaled by total assets, following the scaled approach adopted by Egbadju (2024) and Sadjarto *et al.* (2024) for emerging-market panel studies.

2.2 Theoretical framework

This study is anchored in three complementary theories. Agency Theory (Jensen & Meckling, 1976) provides the primary explanatory framework. The separation of ownership from control creates information

asymmetry between shareholders and managers, generating incentives for self-serving behaviour. In the context of this study, aggressive tax planning arrangements, including the use of debt tax shields, non-debt tax shields, and book-tax differences, can provide financial camouflage under which managers simultaneously reduce tax obligations and manipulate reported earnings to secure bonus targets or meet investor expectations (Egbadju, 2024; Okeke, 2022). Agency Theory therefore predicts that the five tax-avoidance proxies will be positively associated with discretionary accruals in governance-constrained environments such as Nigeria's consumer goods sector.

Positive Accounting Theory (Watts & Zimmerman, 1978) complements Agency Theory by identifying specific contractual incentives that drive accounting choices. Its bonus plan hypothesis predicts that managers whose compensation is tied to reported earnings will select income-increasing accrual policies; the debt covenant hypothesis predicts that firms approaching covenant thresholds will manage earnings to avoid technical default and protect the tax advantages associated with their debt position. These hypotheses explain why DTS and NDTS, both of which create earnings-reporting pressures through their effects on leverage and asset policy, are expected to relate to discretionary accruals (Kadir, 2025; Ujah *et al.*, 2026).

Signalling Theory (Spence, 1973) provides a counterbalancing perspective, recognising that some tax and reporting disclosures serve communicative rather than opportunistic purposes. Firms may use non-debt tax shields and deferred tax assets as credible signals of long-term financial sustainability, reducing information asymmetry rather than exploiting it. This view is consistent with evidence that firms possessing substantial, legitimate asset-based deductions face less need to supplement tax efficiency through accrual manipulation, and that heightened external scrutiny of large, asset-intensive firms further constrains discretionary reporting (Ali *et al.*, 2024; Okeke, 2022; Anderson & Rahiminejad, 2025). Together, the three theories support a differentiated set of predictions for the five tax-avoidance proxies.

2.3 Empirical review and hypotheses development

Effective tax rate and discretionary accruals.

Lower ETRs are broadly associated with higher discretionary accruals across diverse markets, as managers use accrual adjustments to align reported profits with tax-minimisation goals (Besoain & Sepulveda-Velasquez, 2025; Delgado *et al.*, 2023; Owusu *et al.*, 2023). In Nigeria, Yobo and Maisara (2025) found that earnings management significantly reduces the ETR of listed manufacturing firms, while Efenyumi and Nworie (2025) confirmed a significant negative effect of ETR on shareholder returns in listed banks. Dinata and Asqolani (2024), however, found no significant direct effect of tax avoidance on earnings

management. Given the varied ETR outcomes expected among consumer goods firms facing loss years, minimum tax, and deferred tax liabilities during the study period, **H₀₁** states that ETR has no significant relationship with discretionary accruals of listed consumer goods firms in Nigeria.

Cash effective tax rate and discretionary accruals. Firms with lower CETR are theorised to use accrual adjustments to control income and expense timing in ways that reduce cash tax payments, particularly in emerging markets where governance gaps enlarge managerial latitude (Sharaf *et al.*, 2026; Siska *et al.*, 2024; Agustin *et al.*, 2025). Kadir (2025) found that CETR significantly and positively influenced earnings management among listed Nigerian conglomerates, while Egbadju (2024) found that CETR was not statistically significant among a broader sample of non-financial Nigerian firms. **H₀₂**: CETR has no significant relationship with discretionary accruals of listed consumer goods firms in Nigeria.

Book-tax difference and discretionary accruals. Large BTDs are often associated with higher discretionary accruals, as managers report favourable income to shareholders while simultaneously minimising taxable income reported to authorities (Sharaf *et al.*, 2026; Anderson & Rahiminejad, 2025). Liao and Fu (2021) confirmed a positive correlation between BTD and earnings management in Chinese listed firms; Sibirian and Sarumpaet (2023) found that both large positive and large negative BTDs significantly explain earnings management in Indonesian manufacturers; and Delgado *et al.* (2023), using neural network regressions for five EU economies, established a positive relationship between ETR-based proxies and discretionary accruals but no significant BTD effect. **H₀₃**: BTD has no significant relationship with discretionary accruals of listed consumer goods firms in Nigeria.

Debt tax shield and discretionary accruals. Debt financing creates both a tax-efficiency incentive and an earnings-management pressure: the Debt Covenant Pressure Hypothesis predicts that leveraged firms manage earnings upward to avoid covenant violations and protect debt-shielding benefits, while the Debt Monitoring Hypothesis predicts that creditor scrutiny constrains managerial discretion (Kadir, 2025; Michalkova *et al.*, 2021). In Nigeria, Ujah *et al.* (2026) found that DTS has a positive and significant effect on real earnings management, while Ndum (2020) and Okeke (2022) reported mixed debt-leverage effects on accrual-based earnings management in banks and

manufacturing firms respectively. **H₀₄**: DTS has no significant relationship with discretionary accruals of listed consumer goods firms in Nigeria.

Non-debt tax shield and discretionary accruals. NDTS embeds substantial managerial judgment through depreciation method choices, asset useful-life estimates, and amortisation schedules, which firms can exploit to adjust book income upward or downward (Anderson & Rahiminejad, 2025; Kadir, 2025). Agency Theory predicts a positive relationship because complex NDTS arrangements create financial opacity; the deterrent view predicts a negative relationship because firms with legitimate asset-based deductions need less additional accrual manipulation (Ali *et al.*, 2024; Okeke, 2022). Okeke (2022) found a significant negative effect of NDTS on discretionary accruals in Nigerian manufacturing firms, while Saheed and Alagbe (2023) and Okeke (2024) found positive significant effects in non-financial and banking firms, respectively. **H₀₅**: NDTS has no significant relationship with discretionary accruals of listed consumer goods firms in Nigeria.

3. METHODOLOGY

3.1 Research design, population, and sample

The study adopted an ex-post facto research design because it relies on historical financial data beyond the researcher's control. The population comprised 18 firms listed under the Consumer Goods sector of the Nigerian Exchange Group (NGX) as at 31 December 2025. A purposive sampling technique was applied, excluding firms listed after 2016 (BUA Foods Plc, listed January 2022, excluded to maintain a complete ten-year panel), firms with regulatory watchlist flags indicating unreliable disclosures (Golden Guinea Breweries Plc; Multi-Trex Integrated Foods Plc), and firms with insufficient disclosure histories (Nigerian Enamelware Plc; Union Dicon Salt Plc). The final sample comprised 12 firms: Cadbury Nigeria Plc, Champion Breweries Plc, Dangote Sugar Refinery Plc, Guinness Nigeria Plc, Honeywell Flour Mill Plc, International Breweries Plc, Nascon Allied Industries Plc, Nestlé Nigeria Plc, Nigerian Breweries Plc, PZ Cussons Nigeria Plc, Unilever Nigeria Plc, and Vitafoam Nigeria Plc. Audited annual reports were the sole data source; we used group figures where consolidated accounts existed. The 12 firms observed over 10 years (2016–2025) produced a balanced panel of 120 firm-year observations.

3.2 Variable measurement

Table 1: Operationalisation of variables

Concept	Proxy	Symbol	Measurement	Source
Tax avoidance (IV)	Effective Tax Rate	ETR	Tax expense / Pre-tax income	Agustin <i>et al.</i> (2025); Elisa <i>et al.</i> (2025)
	Cash Effective Tax Rate	CETR	Cash taxes paid / Pre-tax income	Agustin <i>et al.</i> (2025); Elisa <i>et al.</i> (2025)

Concept	Proxy	Symbol	Measurement	Source
Earnings management (DV)	Book-Tax Difference	BTD	Accounting income minus taxable income proxy	Agustin <i>et al.</i> (2025); Sharaf <i>et al.</i> (2026)
	Debt Tax Shield	DTS	Interest expense / EBIT	Gabrielli (2023); Ujah <i>et al.</i> (2026)
	Non-Debt Tax Shield	NDTS	Depreciation and amortisation / Total assets	Okeke (2024); Ofurum <i>et al.</i> (2021)
	Discretionary Accruals	DA	(Profit after tax – Operating cash flow) / Total assets	Sadjiarto <i>et al.</i> (2024); Delgado <i>et al.</i> (2023)
	Profitability (CV)	ROA	Profit after tax / Total assets	Besoain & Sepulveda-Velasquez (2025); Nugrahani <i>et al.</i> (2025)

Source: Author's Compilation (2026)

3.3 Model specification

The following panel multiple regression model was estimated:

$$DA_{it} = \beta_0 + \beta_1 ETR_{it} + \beta_2 CETR_{it} + \beta_3 BTD_{it} + \beta_4 DTS_{it} + \beta_5 NDTS_{it} + \beta_6 ROA_{it} + \mu_{it} \dots (1)$$

Where:

DA = discretionary accruals;

ETR = effective tax rate;

CETR = cash effective tax rate;

BTD = book-tax difference;

DTS = debt tax shield;

NDTS = non-debt tax shield;

ROA = return on assets (control);

β_0 = intercept;

β_1 – β_5 = estimated coefficients;

μ = stochastic error term;

i = firm;

t = year.

Model diagnostics included residual normality (Jarque-Bera), Spearman rank correlation and variance inflation factors for multicollinearity, the Breusch-Pagan-Godfrey test for heteroscedasticity, the Ramsey RESET test for functional form, and the Durbin-Watson statistic for residual independence. We tested null hypotheses at the 5% significance level and rejected them when $p < 0.05$.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Table 2: Descriptive Statistics (N = 120)

Statistic	DA	ETR	CETR	BTD	DTS	NDTS	ROA
Mean	-0.1017	-0.0972	0.2388	-0.0201	0.5556	0.0453	0.0313
Median	-0.0801	0.3114	0.1122	-0.0118	0.1594	0.0378	0.0374
Maximum	0.1749	8.0419	7.6249	0.1311	9.9158	0.0965	0.3327
Minimum	-1.6790	-55.6839	-1.1495	-0.2160	-0.9234	0.0118	-0.5751
Std. Dev.	0.1961	5.1723	0.8175	0.0465	1.4403	0.0233	0.1189
Skewness	-4.5803	-10.5733	6.8244	-1.3134	4.4791	0.6429	-1.3656
Kurtosis	37.8346	117.8737	61.1706	7.8353	26.5935	2.2544	8.6924
Jarque-Bera	5970.37	62782.77	16434.77	138.83	2938.77	10.98	182.62
Probability	0.0000	0.0000	0.0000	0.0000	0.0000	0.0041	0.0000
Observations	120	120	120	120	120	120	120

Source: EViews 10.0 Output (2026)

Discretionary accruals averaged -0.1017 (median -0.0801), indicating that, on average, operating cash generation exceeded accounting profit after scaling. The negative mean reflects the elevated operating cash-flow profile of consumer goods manufacturers relative to their recognised accounting income. ETR averaged -0.0972 with a median of 0.3114, close to Nigeria's 30% statutory rate; the negative mean was driven by loss-making years and tax-credit positions. CETR averaged 0.2388, with its wide range reflecting cash tax

settlements in periods of small pre-tax profit. BTD averaged approximately -0.0201 of assets, with NDTS averaging 4.53% of total assets. The Jarque-Bera statistics reject normality for all variables, driven by loss years, foreign-exchange shocks, and operating cash-flow extremes. Regression inference therefore employs robust standard errors (White cross-section covariance) as a supplementary check, confirming all five-per cent decisions.

4.2 Diagnostic tests

Table 3: Spearman Rank Correlation Matrix

Variable	DA	ETR	CETR	BTD	DTS	NDTS	ROA
DA	1.0000	0.1151	0.1778	0.1976	-0.0871	-0.2634	0.2855
ETR		1.0000	0.2109	-0.2778	0.1259	-0.0989	0.2894
CETR			1.0000	0.2366	0.0544	-0.1211	0.4826
BTD				1.0000	0.0090	0.0349	0.0648
DTS					1.0000	-0.1678	-0.2291
NDTS						1.0000	-0.1383
ROA							1.0000

Source: EViews 10.0 Output (2026)

Table 4: Variance Inflation Factors

Variable	Coefficient Variance	Centred VIF	Tolerance
ETR	0.00001475	1.2488	0.8008
CETR	0.00051911	1.0982	0.9106
BTD	0.18149087	1.2444	0.8036
DTS	0.00020018	1.3145	0.7607
NDTS	0.63051072	1.0804	0.9256
ROA	0.02838345	1.2706	0.7871

Source: EViews 10.0 Output (2026)

Table 5: Breusch-Pagan-Godfrey Heteroscedasticity Test

Statistic	Value	Probability
F-statistic (5, 114)	0.0659	0.9970
Obs*R-squared	0.3459	0.9967
Scaled explained SS	2.8237	0.7270

Null hypothesis: Homoscedasticity.

Source: EViews 10.0 Output (2026)

The highest inter-predictor Spearman correlation was 0.2778 between ETR and BTD, well below the 0.80 multicollinearity threshold. All centred VIF values were below 1.40, and all tolerance values exceeded 0.76, confirming no harmful multicollinearity. The Breusch-Pagan-Godfrey F-statistic probability of 0.9970 did not reject the null of homoscedasticity, establishing constant residual variance. The residual Jarque-Bera statistic (7,355.48; $p = 0.0000$) rejected

normality, driven by a small number of loss-year outliers; however, the White cross-section covariance robustness check produced identical five-per cent decisions for all explanatory variables. The RESET probability of 0.9815 confirmed functional-form adequacy, and the Durbin-Watson statistic of 1.7479 confirmed acceptable residual independence.

4.3 Regression Results and Hypothesis Tests

Table 6: Panel Least Squares Regression — Main Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.010382	0.044400	-0.233840	0.8155
ETR	-0.003102	0.003854	-0.804905	0.4226
CETR	0.004391	0.022849	0.192190	0.8479
BTD	0.717690	0.417027	1.720967	0.0880
DTS	-0.012181	0.012796	-0.951936	0.3431
NDTS	-1.579264	0.791591	-1.995051	0.0484 *
R ² = 0.0561	Adj. R ² = 0.0147	F-stat = 1.3549	DW = 1.7479	Obs = 120

Dependent variable: DA. * Significant at 5%.

Source: EViews 10.0 Output (2026)

Table 7: Control Model with ROA (White Cross-Section Robust Standard Errors)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.030241	0.034119	-0.886342	0.3944
ETR	-0.002982	0.001646	-1.811185	0.0975
CETR	0.003033	0.009008	0.336730	0.7427

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BTD	0.588843	0.355958	1.654250	0.1263
DTS	-0.003793	0.019202	-0.197512	0.8470
NDTS	-1.452359	0.515796	-2.815760	0.0168 *
ROA	0.230201	0.197095	1.167967	0.2675
R² = 0.0714	Adj. R ² = 0.0221	F-stat = 1.4489	DW = 1.7371	Obs = 120
(p = 0.2023)				

Dependent variable: DA. * Significant at 5%.

Source: EViews 10.0 Output (2026)

Table 8: Summary of Hypothesis Testing

Hypothesis	Variable	β	t-Statistic	p-Value	Decision
H₀₁	ETR	-0.0031	-0.8049	0.4226	Not Rejected
H₀₂	CETR	0.0044	0.1922	0.8479	Not Rejected
H₀₃	BTD	0.7177	1.7210	0.0880	Not Rejected
H₀₄	DTS	-0.0122	-0.9519	0.3431	Not Rejected
H₀₅	NDTS	-1.5793	-1.9951	0.0484	Rejected

Source: Author's Compilation (2026)

ETR (H₀₁).

ETR recorded a coefficient of -0.0031 and p = 0.4226, confirming a negative but statistically insignificant relationship with discretionary accruals; H₀₁ is not rejected. The negative sign indicates that lower ETRs (greater avoidance) are directionally associated with higher discretionary accruals, consistent with the Agency Theory prediction and with Besoain and Sepulveda-Velasquez (2025) and Delgado *et al.* (2023). However, the relationship was not significant, consistent with Dinata and Asqolani (2024), who similarly found no significant direct effect of tax avoidance on earnings management. In the present panel, wide ETR dispersion driven by loss years, minimum-tax positions, tax credits, and foreign-exchange losses precluded a statistically reliable same-year association between ETR and discretionary accruals.

CETR (H₀₂).

CETR recorded a positive but insignificant coefficient of 0.0044 (p = 0.8479); H₀₂ is not rejected. The positive direction was unexpected under the standard hypothesis that lower cash-tax payments signal greater avoidance and higher manipulation, but the probability value is far from significance, preventing any directional inference. Cash tax payments in the panel included prior-year settlements, withholding-tax credits, minimum tax, and loss-year payments that weakened the contemporaneous relationship with accruals. This finding is consistent with Egbadju (2024), who found CETR statistically insignificant among listed Nigerian non-financial firms, and extends Agustin *et al.* (2025), who noted that strict regulatory oversight and investor focus on business fundamentals can attenuate the accrual-cash-tax nexus.

BTD (H₀₃).

BTD had a positive but insignificant relationship with discretionary accruals (coefficient = 0.7177; p = 0.0880); we do not reject H₀₃. The positive coefficient confirms the theoretical direction: wider

divergences between accounting profit and taxable income co-occur with higher discretionary accruals, consistent with Sharaf *et al.* (2026) and Liao and Fu (2021). The p-value of 0.0880 falls narrowly outside the 5% threshold. This borderline result may reflect the aggregate nature of BTD, which combines both unavoidable accounting–tax rule differences and deliberate managerial positioning; the former dilutes the signal from the latter, preventing significance at 5%. The finding aligns with Delgado *et al.* (2023), who found no significant BTD–discretionary accrual relationship using neural network regressions for EU economies.

DTS (H₀₄).

DTS had a negative and insignificant relationship with discretionary accruals (coefficient = -0.0122; p = 0.3431); H₀₄ is not rejected. This negative direction is consistent with the Debt Monitoring Hypothesis: creditor oversight associated with higher interest-bearing obligations may restrain, rather than facilitate, accrual manipulation. This finding is consistent with Michalkova *et al.* (2021), who documented an inverse relationship between debt and earnings management in Czech and Slovak firms, and with Okeke (2022), who found a significant negative effect of DTS on discretionary accruals in Nigerian manufacturing firms. This contrasts with Ujah *et al.* (2026) and Kadir (2025), who documented positive debt-tax-shield effects on reporting behaviour in Nigerian firms. The sampled firms combined lease liabilities, trade-finance arrangements, and periods of negative EBIT that prevented DTS from exerting a uniform directional effect.

NDTS (H₀₅).

NDTS was the only variable with a statistically significant relationship with discretionary accruals: coefficient = -1.5793 (p = 0.0484), and it remained significant at -1.4524 (p = 0.0168) in the White-robust control model. H₀₅ is rejected. The negative coefficient indicates that higher depreciation and amortisation

relative to total assets reduce discretionary accruals, controlling for other tax-avoidance measures. This is consistent with the substitution position of DeAngelo and Masulis (1980) and the deterrent view of Okeke (2022), where firms with substantial legitimate asset-based deductions face both a reduced incentive to supplement tax efficiency through accrual manipulation and heightened external scrutiny from creditors and analysts. The finding differs from the positive NDTs effects reported by Saheed and Alagbe (2023) and Okeke (2024) in banking and non-financial Nigerian sectors, suggesting that sector-specific asset intensity and governance quality modulate the direction of this relationship. Among capital-intensive consumer goods manufacturers, the tax relief already embedded in high depreciation charges appears to remove rather than create the incentive for additional accrual adjustment.

ROA (control).

ROA had a positive but insignificant coefficient of 0.2302 ($p = 0.2675$), consistent with the direction documented by Besoain and Sepulveda-Velasquez (2025) and Nugrahani *et al.* (2025) but not significant in this panel. Importantly, including ROA did not change the significance of any of the five tax-avoidance measures, confirming that the significant negative effect of NDTs is not explained by cross-sectional profitability differences.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Summary and conclusion

This study examined the relationship between five tax-avoidance measures and discretionary-accruals earnings management among 12 listed consumer goods firms in Nigeria from 2016 to 2025. ETR (H_{01}), CETR (H_{02}), BTd (H_{03}), and DTS (H_{04}) did not independently explain discretionary accruals at the 5% significance level, establishing that these measures of accrual-based tax incidence, cash-tax payment, accounting-tax divergence, and financing-driven tax shielding were insufficient individually to predict earnings-management behaviour in this sector over the study period. NDTs (H_{05}) was the sole tax-avoidance component with a statistically significant relationship: its negative coefficient establishes that depreciation and amortisation charges constrain rather than facilitate discretionary accruals among listed consumer goods firms, consistent with the substitution logic of capital structure theory and the deterrent view of tax-efficiency literature.

The study contributes to the literature in three respects. First, it provides ten-year, firm-level panel evidence specifically for the Nigerian consumer goods sector, where empirical analysis at this intersection was previously absent. Second, it demonstrates that the five tax-avoidance channels yield materially different relationships with discretionary accruals, confirming that treating tax avoidance as a single homogeneous construct is methodologically inadequate. Third, it establishes a significant negative NDTs–discretionary accruals

relationship in this sector, adding to the growing body of sector-specific evidence on the direction of this relationship in Nigeria. The study is limited by its reliance on financial report data and a perceptual/proxy-based earnings-management measure; its cross-sectional scope within one sector and country limits generalisability.

5.2 RECOMMENDATIONS

1. The Financial Reporting Council of Nigeria and NGX Regulation should require listed consumer goods firms to provide transparent reconciliations of statutory, effective, and cash tax rates, with separate explanations for loss years, tax credits, minimum tax, and prior-year settlements, to improve the analytical utility of ETR and CETR as regulatory signals.
2. Audit committees and external auditors should subject unusually large book-tax differences to detailed qualitative review, distinguishing accounting-standard-driven permanent differences, timing reversals, and management-controlled adjustments before concluding on earnings quality.
3. The Federal Inland Revenue Service should combine ETR and CETR with BTd, DTS, and NDTs when selecting firms for tax-risk review, since no single measure independently explained discretionary accruals; a composite tax-risk score would improve targeting efficiency.
4. Boards and management should maintain consistent depreciation and amortisation policies, fully document changes in asset useful lives and residual values, and disclose the tax effect of material re-estimations, given that NDTs was the only significant predictor of discretionary accruals in this study.
5. Future research should estimate discretionary accruals using the modified Jones model and compare results with the cash-flow-based specification used here; should extend the analysis to real earnings management through abnormal operating cash flow and production costs; and should incorporate corporate governance quality and audit firm characteristics as potential moderators of the tax-avoidance–earnings-management relationship.

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