ADMINISTRATIVE PENALTIES AS MODERATOR BETWEEN TAX AUDIT AND TAX COMPLIANCE: INSIGHTS FROM TAX PRACTITIONERS IN NORTHEAST NIGERIA

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Abstract

This study investigates how tax practitioners in Northeast Nigeria perceive administrative penalties as moderating the relationship between tax audits and tax compliance. Survey data were collected from a sample of 104 tax practitioners from six Government Business Tax Offices (GBTOs) and seven Micro and Small Tax Offices (MSTOs) in the region. Descriptive data were analysed using JASP, while hypotheses were tested using PLS-SEM in SmartPLS. The results show that administrative penalties have a significant positive impact on tax compliance ($\beta = 0.561$, SD = 0.086, $t = 6.498$, $p < 0.001$). However, none of the tax audit types (back duty audit, desk audit, field audit, and registration audit) have a significant impact on tax compliance. Surprisingly, the interaction between back duty audit and administrative penalties has a significant negative impact on tax compliance ($\beta = -0.464$, SD = 0.214, $t = 2.172$, $p = 0.030$). The study's findings suggest to tax authorities that administrative penalties jointly with back duty audit may be an effective strategy to improve tax compliance, but their use in conjunction with back duty audits may require careful consideration. The study contributes to the existing literature on tax compliance and provides insights into the specific context of Northeast Nigeria.

Keywords: *Tax Compliance, Tax Audits, Administrative Penalties, Tax Practitioners, Nigeria.*

Introduction

Tax compliance, the cornerstone of a healthy economy (Nikolova, 2023), hinges on the timely and accurate payment of taxes by individuals and businesses (Adesemowo *et al.*, 2024). To ensure this vital revenue stream, tax authorities utilise various strategies to create and sustain high compliance morale among tax payers (Okonye and Akujor, 2023). Tax audit is a prominent mechanism employed by tax authorities in generating sustainable tax compliance behaviours (Olaoye and Ekundayo, 2019). While the Nigerian tax system is built on the principle of voluntary self-assessment (Ewa, 2021), the use of enforcement tools such as audit and penalties serve to compliment the drive for more accurate self-assessment (Dauda and Oyedokun, 2018). Indeed, the deterrence theory (Kogler *et al.*, 2022) suggests that the very existence of different audit types – desk, field, back duty, and registration – discourages non-compliance (Olaoye and Ekundayo, 2019). The audits work by identifying errors in tax filings, prompting corrections, and serving as a deterrent against future mistakes (Advani *et al.*, 2023).

However, the effectiveness of tax audit alone might not be sufficient to engender full compliance. Administrative penalties, in the form of fines and interest, can further incentivise compliance by increasing the cost of tax evasion (Okonye and Akujor, 2023). A system with harsher penalties and a high likelihood of enforcement is likely to create a more significant deterrent alongside tax audit, ultimately promoting higher tax compliance (Hebous *et al.*, 2023; Rahmayanti *et al.*, 2020). Also, the impact of different audit types and penalties may not be uniform across all taxpayer groups (Advani *et al.*, 2023). For example, small businesses with limited resources might be more susceptible to the disruption of a field audit compared to large corporations with dedicated accounting teams (Muhwa and Achoki, 2023). Similarly, penalty severity might have a varying influence depending on the taxpayer segment (Surbakti *et al.*, 2024). However, the extant literature seems to overlook the significance of the moderating impact of administrative penalties in tax compliance.

This study surveys these complexities from the viewpoints of tax practitioners operating within the context of Northeast Nigeria. This region faces ongoing insurgency, which may disrupt economic activity and potentially weaken tax administration infrastructures (Mustapha *et al.*, 2017). To understand how tax audit and administrative penalties interact to influence tax compliance in this specific environment, the study leverages the practical knowledge of tax practitioners in-situ who possess first-hand knowledge of taxpayer behaviour and the region's administrative practices.

At the backdrop of these issues, the researchers raised two patent questions to address the issues of the objectives of the study:

1. How do different tax audit types (desk, field, back duty, registration) influence tax compliance in Northeast Nigeria?
2. Do administrative penalties moderate the relationship between tax audit and tax compliance?

It is against this conflicting and inconsistent empirical evidence that the researchers put forward the following hypothesis:

H_1: Desk audit influences tax compliance in Northeast Nigeria.
H_2: Field audit influences tax compliance in Northeast Nigeria.
H_3: Back duty audit influences tax compliance in Northeast Nigeria.
H_4: Registration audit influences tax compliance in Northeast Nigeria.
H_5: Administrative penalties moderate the desk audit–tax compliance relationship in Northeast Nigeria.
H_6: Administrative penalties moderate the field audit–tax compliance relationship in Northeast Nigeria.
H_7: Administrative penalties moderate the back duty audit–tax compliance relationship in Northeast Nigeria.
H_8: Administrative penalties moderate the registration audit–tax compliance relationship in Northeast Nigeria.

The remaining parts of this study was therefore arranged as follows; Review of related literature, Theoretical framework, Empirical reviews, Methodology, Results and Discussions and finally Conclusion and Recommendation.

Theoretical Framework

This study explores the interplay between tax audits, administrative penalties, and tax compliance as perceived by tax practitioners in Northeast Nigeria. Deterrence theory, employed as the overall theoretical framework (Kogler *et al.*, 2022), suggests that the existence of various tax audits (e.g., desk, field, back duty, registration) encourages compliance among taxpayers (Olaoye and Ekundayo, 2019). Audits can directly improve compliance by identifying and rectifying errors (Alm *et al.*, 2023). Administrative penalties, in the form of fines and interest, further deter non-compliance by increasing the cost of tax evasion (Olaoye and Ekundayo, 2019). However, the severity and certainty of the penalties might moderate the effectiveness of this combined approach (Hebous *et al.*, 2023;

Rahmayanti *et al.*, 2020). Furthermore, the impact of different audit types, along with penalties, may vary depending on the taxpayer segment (e.g., small businesses vs. large corporations) (Advani *et al.*, 2023). It is against the backdrop that the current study seeks to explore how these factors interact by analysing how different audit types influence compliance, whether administrative penalties moderate this relationship, and if this moderation is stronger for specific audits. The resultant research model is depicted in Figure 1.

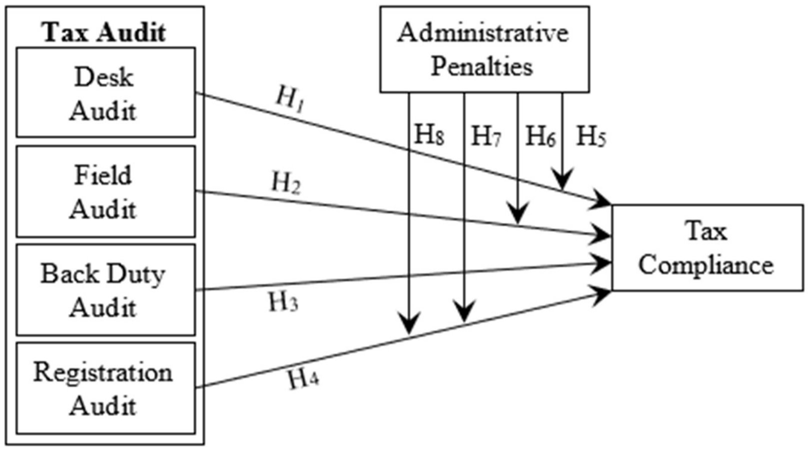


Figure 1. Research Model

Desk Audit and Tax Compliance

Desk audit is a structured review process involving the examination of taxpayer's records, performance, or compliance information without the need for an on-site visit (Kasper and Alm, 2022). Empirical evidence, consistent with the deterrence theory (Abdulrasaq and Babatunde, 2024; Muhammad *et al.*, 2023), suggest that desk audits act as a strong deterrent against non-compliance, leading to higher overall tax compliance (ThankGod and Ajinwo, 2020). However, this effect may not be universal (Manhire, 2014), but audits demonstrably influence taxpayer behaviour towards better compliance (Mebratu, 2016). Conversely, research has also shown that over-reliance on desk audit may undermine self-assessment principles (Okello, 2014), and could backfire on voluntary compliance, especially for sophisticated taxpayers or those with fluctuating income, who may revert to non-compliant behaviour after a tax audit (DeBacker *et al.*, 2018). Nevertheless, desk audit is reported to influence compliance when employed in combination with other audit mechanisms (D'Agosto *et al.*, 2018). This overall unsettled science on the desk audit–tax compliance nexus requires further study.

Field Audit and Tax Compliance

A field examining a taxpayer's financial records by tax personnel at the taxpayer's place of business, sometimes unannounced, to ensure accurate tax reporting (Bjørneby *et al.*, 2021). Regular tax audits, encompassing both desk and field audits, are crucial for improving tax compliance rates (ThankGod and Ajinwo, 2020). Field audits, in particular, have been shown to be highly effective in boosting tax remittance and act as a strong predictor of future compliance by taxpayers (Bugaje *et al.*, 2023; Olaoye *et al.*, 2018). This effectiveness stems from the in-depth nature of field audits, which uncover more detailed information and compel taxpayers to provide more comprehensive documentation compared to desk audits (Bugaje *et al.*, 2023; Olaoye and Ekundayo, 2019; Olaoye *et al.*, 2018; ThankGod and Ajinwo, 2020).

Back Duty Audit and Tax Compliance

Back duty audits target suspected tax non-compliance such as suspicion of hidden income, claiming capital allowances twice, or consistently reporting suspiciously low profits (Enofe *et al.*, 2019). Some studies suggest that back duty audits generally increase tax compliance (Hokamp, 2014) and can curb tax evasion (Kastlunger *et al.*, 2009; Olaoye and Ekundayo, 2019). However, other studies (Lederman, 2018; Mendoza *et al.*, 2017) indicate that there is a threshold beyond which increased auditing can decrease compliance. Furthermore, back duty audit negatively correlates with compliance among taxpayers with previous record of non-compliance but positive among compliant taxpayers (Bergman and Nevarez, 2006). Nevertheless, the influence of tax audits may vary depending on the taxpayer's previous experiences (Lederman, 2018), and the specific sub-category of taxpayers (Manhire, 2014).

Registration Audit and Tax Compliance

Tax authorities use registration audit to bring individuals and corporate bodies into the tax net by documenting their tax identities and ensuring compliance with tax laws and regulations (Olaoye and Ekundayo, 2019). Expanding the tax net through taxpayer registration is a critical mechanism in tax administration. But does it yield compliance? Several studies (e.g., Adu and Amponsah, 2020; Efuntade and Efuntade, 2023) indicate that registration audit brings about compliance, especially where the procedure has been greatly simplified (Hellerstein *et al.*, 2018). However, Olaoye *et al.*'s (2023) findings suggest that merely bringing corporate and individuals into the tax net through registrations does not guarantee compliance (filing tax returns). Similar conclusions were reported by Gallien *et al.* (2023) who added that it might skew the tax registry.

Moderating Effects of Administrative Penalties

Administrative penalties are consequences for non-compliance with tax laws and regulations and usually take the form of fines and interests (de Troyer, 2023). The theory of deterrence project penalties and weakening force against non-compliance (Kogler *et al.*, 2022; Smailes and Mcdermott, 2010). Empirically, Oladipupo and Obazee (2016) found a positive but non-significant connection between penalties and compliance. Thus, penalties could potentially serve to either weaken or strengthen the association between desk audit and tax compliance. The threat of associated penalties like fines and interest can incentivise taxpayers to adhere to regulations (Mebratu, 2016). This moderating effect might be stronger depending on the severity and certainty of penalties. For instance, research suggests that harsher penalties (Safiq and Bhisri, 2022) and a high likelihood of enforcement (Abdulrasaq and Babatunde, 2024) could create a more significant deterrent alongside audits, ultimately promoting greater tax compliance. Conversely, Nguyen *et al.* (2020) and Skov (2023) showed that when it is monetarily better to pay administrative penalties than comply, taxpayers are incentivised to default. The reverse could equally be the case. Indeed, Muturi (2021) and Siregar *et al.* (2019) reported tax penalty as a moderator regarding several tax compliance antecedents. Overall, these studies suggest that penalties generally have some attenuating or accentuating effects on tax compliance by influencing taxpayers' attitudes and behaviours, although their effectiveness can vary depending on factors such as the fairness of the tax system, service quality, and the taxpayers' respective income levels.

Methodology

The study was guided by the positivist paradigm. This paradigm allows for quantifying the study variables, thereby facilitating a structured and rigorous examination of their relationships (Park *et al.*, 2020). This is consistent with the survey research design employed in collecting primary evidence from a sample of tax practitioners. Also, a combination of random and purposive sampling techniques were used in selecting the study respondents. Adapted instruments will be utilised in measuring the study variables from Federal Inland Revenue Service's (FIRS) six Government Business Tax Offices (GBTOs) and seven Micro and Small Tax Offices (MSTOs) in Northeast Nigeria.

Study Area

The study was carried out in the six states of Nigeria's Northeast geopolitical zone. The research focuses on tax practitioners' perspectives from specific FIRS's GBTOs and MSTOs, listed in Table 1. It is important to note that GBTOs cater to public entities (government businesses), while MSTOs cater to taxpayers with turnover below NGN200 million. This suggests that the study investigated tax compliance among both public and private sector establishments in Northeast Nigeria.

Table 1: FIRS Tax Offices in Northeast Nigeria

Tax Office Type	**Locations**	**Descriptions**
GBTOs	Adamawa GBTO, Bauch GBTO, Borno GBTO, Gombe GBTO, Taraba GBTO, Yobe GBTO	Public organisations (government businesses)
MSTOs	Azare MSTO, Bauchi MSTO, Damaturu MSTO, Gombe MSTO, Jalingo MSTO, Maiduguri MSTO, Yola MSTO	Taxpayers with turnover below NGN200 million

Source: https://www.firs.gov.ng/office-locator/

Sample, Measures, and Content Validity

Data were collected from a sample of 104 tax practitioners from GBTOs and MSTOs from the Northeast (see Table 1). Equal number of eight respondents were selected from each tax office based on purposive sampling principles (Bakkalbasioglu, 2020).

The scales used in the study are all adapted self-reports. The various tax audit types were adapted from Oghuma (2018) and Olaoye and Ekundayo (2019). Four items each were used in measuring desk, field, back duty, and registration audits. Seven items, adapted from Kirchler and Wahl (2010) and Oghuma (2018), measured tax compliance. Similarly, seven items were used in evaluating administrative penalties, as adapted from Oghuma (2018) and Rasmini and Mimba (2021). All variables were evaluated using Likert's agreement scale. However, to attenuate the possible occurrence of common method bias (Podsakoff *et al.*, 2024), the various audit types were rated using 5-point Likert scale while tax compliance and administrative penalties were anchored using 7-point Likert-like scale.

The adapted measures were validated using Lawshe's (1975) content validity index (CVI). To establish content validity of the adapted measure, a panel of six experts, selected from six higher education institutions in the Northeast, was asked to rate the relevance of the study's constructs (tax audits, administrative penalties, and tax compliance) to the research objectives. The experts rated each construct on a 4-point scale (1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, 4 = very relevant). The results (tax audits: CVI = 0.93, SD = 0.08; administrative penalties: CVI = 0.90, SD = 0.10; tax compliance: CVI = 0.95, SD = 0.05) indicate excellent content validity at the construct level with relatively low SDs indicating consensus among the experts.

Data Analysis

Descriptive statistical tools were used in summarising the central tendencies and variabilities in the data in JASP. Multicollinearity was tested using variance inflation test (VIF) to ensure the data collected are fit for multivariate analysis (Hair *et al.*, 2022). The model was evaluated through measurement and structural analyses using consistent PLS-SEM in SmartPLS (Hair *et al.*, 2022). Finally, the model's overall fit and predictive indices were assessed using R^2, Q^2 (Hair *et al.*, 2022), and $PLS_{predict}$ (Shmueli *et al.*, 2019).

Results

Demographics, Descriptives, and Correlations

Table 2 describes tax practitioners' perceptions in Northeast Nigeria. The average practitioner is 36 years old with 10 years of experience. They view tax compliance and administrative penalties as moderately high, with a few outliers perceiving them much lower or harsher. Desk and field audits are seen as having a slightly larger impact on compliance compared to back duty and registration audits. The data suggests some clustering around the average scores but also some variation in perceptions among the practitioners.

Table 2. Descriptive Statistics

Variables	$\bar{x}$	SE of $\bar{x}$	*SD*	Skew.	Kurt.	Min.	Max.
Age	36.26	0.76	7.75	0.94	0.85	24.00	61.00
Tenure	10.80	0.79	8.07	1.18	1.87	5.00	38.00
Tax Compliance	5.96	0.07	0.69	-3.93	21.31	1.43	6.43
Administrative Penalties	5.56	0.10	1.02	-1.13	1.06	2.43	6.71
Desk Audit	4.56	0.07	0.71	-2.95	11.40	1.00	5.00
Field Audit	4.65	0.06	0.58	-2.28	6.16	2.00	5.00
Back duty Audit	3.44	0.12	1.22	-0.43	-0.81	1.00	5.00
Registration Audit	3.10	0.12	1.19	0.19	-0.94	1.00	5.00

The Spearman's Correlations results in Table 3 show a range of correlations between variables. Age is strongly correlated with tenure (0.908), while tax compliance is moderately correlated with administrative penalties (0.512). Weak positive correlations exist between professional affiliation and tax compliance (0.146), tenure and field audit (0.177), and certain audit types (desk, field, back duty, and registration). On the other hand, weak negative correlations are observed between age and tax compliance (-0.020), age and certain audit types (back duty and registration audits). Most pairs of variables show no significant correlation (rho ≈ 0).

Table 3. Spearman's Correlations

Variable	Age	Edu	Affil.	Tenu.	TCOMP	ATPEN	DAUDT	FAUDT	BAUDT	RAUDT
1. Age	—									
2. Edu	0.054	—								
3. Affil.	0.116	-0.063	—							
4. Tenu.	0.908	0.129	0.044	—						
5. TCOML	-0.020	-0.012	0.146	-0.026	—					
6. ATPEN	0.002	0.017	0.119	0.005	0.512	—				
7. DAUDT	0.102	0.076	-0.041	0.117	0.107	-0.069	—			
8. FAUDT	0.181	-0.018	-0.069	0.177	0.193	0.032	0.234	—		

9. BAUDT	-0.179	-0.028	-0.138	-0.160	-0.001	0.018	0.211	0.025	—	
10. RAUDT	-0.129	-0.073	0.118	-0.178	0.153	-0.008	0.043	0.189	0.203	—

Measurement Model Analysis

Multicollinearity Diagnostics

The Variance Inflation Factor (VIF) statistics in Table 3 show that there is no harmful multicollinearity among the independent variables in the regression analysis. All VIFs are below Sarstedt *et al.*'s (2022) threshold of VIF ≤ 3, indicating that the independent variables are not highly correlated with each other. Specifically, the VIFs range from 1.032 (Administrative Penalties) to 1.166 (Back Duty Audit), suggesting that the regression analysis can proceed without concerns about multicollinearity affecting the results through inflated variance or unstable estimates.

Table 3. Variance Inflation Factor Statistics

Independent Variables	Tax Compliance
Administrative Penalties	1.032
Back Duty Audit	1.166
Desk Audit	1.070
Field Audit	1.091
Registration Audit	1.156

Reliability Analysis

Table 4 assesses the reliability of the survey instruments used in collecting the study data. Individual item loadings show most items effectively measure their intended concepts (e.g., penalties), with a few exceptions in registration and field audits. However, all five constructs achieve good reliability scores above 0.7 in each of the three assessment metrics employed (CA, rho_A, and CR), indicating the survey items for each construct provide consistent measures. This suggests the survey instrument effectively captures tax practitioners' perceptions.

Table 4. Indicator and Construct Reliabilities

Constructs	Items	Loadings	CA	rho_A	CR
Administrative Penalties	ATPEN2	0.813	0.832	0.873	0.884
	ATPEN3	0.911			
	ATPEN5	0.841			
	ATPEN6	0.673			
	ATPEN7	0.621			
Back Duty Audit	BAUDT1	0.919	0.861	0.906	0.902
	BAUDT2	0.911			
	BAUDT3	0.750			
	BAUDT4	0.750			
Desk Audit	DAUDT1	0.806	0.857	0.878	0.903
	DAUDT2	0.817			
	DAUDT3	0.873			
	DAUDT4	0.848			

Constructs	Items	Loadings	CA	rho_A	CR
Field Audit	FAUDT1	0.963	0.858	1.022	0.876
	FAUDT2	0.970			
	FAUDT3	0.591			
	FAUDT4	0.619			
Registration Audit	RAUDT1	0.512	0.893	0.808	0.851
	RAUDT2	0.496			
	RAUDT3	0.993			
	RAUDT4	0.978			
Tax Compliance	TCOMP1	0.771	0.912	0.924	0.929
	TCOMP2	0.849			
	TCOMP3	0.806			
	TCOMP4	0.890			
	TCOMP5	0.837			
	TCOMP6	0.746			
	TCOMP7	0.751			

Validity Analysis

Convergent validity, measured by Average Variance Extracted (AVE), assesses how well survey items capture their intended concepts. All constructs in this study achieved acceptable AVE (>0.5 according to Hair *et al.* (2022), as shown in Table 5. This suggests these measures effectively capture tax practitioners' perceptions. Furthermore, the Fornell and Larcker (1981) criterion statistics indicate strong discriminant validity for the study instrument, as the square roots of the AVE values for each construct—administrative penalties (0.779), back duty audit (0.837), desk audit (0.836), field audit (0.807), registration audit (0.783), and tax compliance (0.809)—are greater than their respective inter-construct correlations. This demonstrates that each construct is distinct and not overly correlated with others, ensuring that the constructs measure different concepts effectively.

Table 5. Convergent (AVE) and Discriminant (Fornell-Larcker Criterion) Validities

	AVE	ATPEN	BAUDT	DAUDT	FAUDT	RAUDT	TCOMP
Administrative Penalties	0.607	**0.779**					
Back Duty Audit	0.700	0.057	**0.837**				
Desk Audit	0.699	0.056	0.192	**0.836**			
Field Audit	0.651	0.157	-0.032	0.138	**0.807**		
Registration Audit	0.613	0.088	0.304	0.008	0.177	**0.783**	
Tax Compliance	0.654	0.576	0.184	0.178	0.117	0.095	**0.809**

The homotrait-monotrait ratio of correlations (HTMT) (Henseler *et al.*, 2015), a more stringent discriminant validity metric, reinforces the positive results from the Fornell-Larcker criterion. According to the results in Table 6, the HTMT ratios for the constructs are all below the acceptable threshold of 0.85, ranging from 0.066 to 0.612. This indicates strong discriminant validity for the study instrument, meaning that each construct is distinct and not overly correlated with others, effectively ensuring that the constructs measure different aspects of the study.

Table 6. The HTMT Ratio of Correlations

	ATPEN	BAUDT	DAUDT	FAUDT	RAUDT	TCOMP
Administrative Penalties	—					
Back Duty Audit	0.118	—				
Desk Audit	0.151	0.239	—			
Field Audit	0.196	0.066	0.150	—		
Registration Audit	0.122	0.258	0.118	0.248	—	
Tax Compliance	0.612	0.193	0.189	0.124	0.110	—

Structural Model Analysis

Analysis of Direct and Moderating Paths

The results in Table 7 revealed a positive and statistically significant relationship (β = 0.561, SD = 0.086, $p < 0.001$) between perceived administrative penalty severity and tax compliance. In other words, for each unit increase in perceived penalty harshness, tax compliance goes up by an average of 0.561 units. There was no statistically significant evidence ($p > 0.05$) to link specific audit types (back duty, desk, field, registration) directly to tax compliance, although the coefficients were all slightly positive. These findings suggest that perceived penalty severity plays a more prominent role in driving tax compliance in Northeast Nigeria compared to the immediate impact of other audit types.

Table 7. Path Coefficients (Direct and Moderated Paths)

				CIBC				
Paths	**β**	**SD**	**t-Stat**	**Bias**	**2.50%**	**97.50%**	**p-Values**	**Comment**
ATPEN → TCOMP	0.561	0.086	6.498	-0.007	0.313	0.680	0.000	Supported
BAUDT → TCOMP	0.130	0.124	1.050	-0.045	-0.168	0.279	0.294	Not Supported
DAUDT → TCOMP	0.119	0.134	0.886	0.021	-0.211	0.345	0.376	Not Supported
FAUDT → TCOMP	0.016	0.093	0.169	0.008	-0.175	0.188	0.866	Not Supported
RAUDT → TCOMP	0.002	0.118	0.016	0.044	-0.201	0.186	0.987	Not Supported
BAUDT×ATPEN → TCOMP	-0.464	0.214	2.172	0.169	-0.699	-0.226	0.030	Supported
DAUDT×ATPEN → TCOMP	0.012	0.187	0.065	-0.070	-0.345	0.326	0.948	Not Supported
FAUDT×ATPEN → TCOMP	0.027	0.101	0.266	0.012	-0.230	0.205	0.791	Not Supported
RAUDT×ATPEN → TCOMP	0.133	0.158	0.840	-0.055	-0.122	0.489	0.401	Not Supported

The results in Table 7 further show the moderated path coefficients of the study hypotheses, examining the interactive effects of various audit types and administrative penalties on tax compliance. Only the interaction between back duty audit and administrative penalties has a significant negative effect on tax compliance (β = -0.464, SD = 0.214, t = 2.172, p = 0.030), indicating that the combination of back duty audit and administrative penalties leads to lower tax compliance. In other words, penalties become less effective in driving compliance when back duty audits are a major concern to taxpayers. However, the interactions between administrative penalties and desk audit (β = 0.012, SD = 0.187, t = 0.065, p = 0.948), field audit (β = 0.027, SD = 0.101, t = 0.266, p = 0.791), and registration audit (β = 0.133, SD = 0.158, t = 0.840, p = 0.401) on tax compliance are not statistically significant. These findings, illustrated in Figure 2, suggest that back duty audits may interact with administrative penalties in a way that reduces their effectiveness in promoting tax compliance.

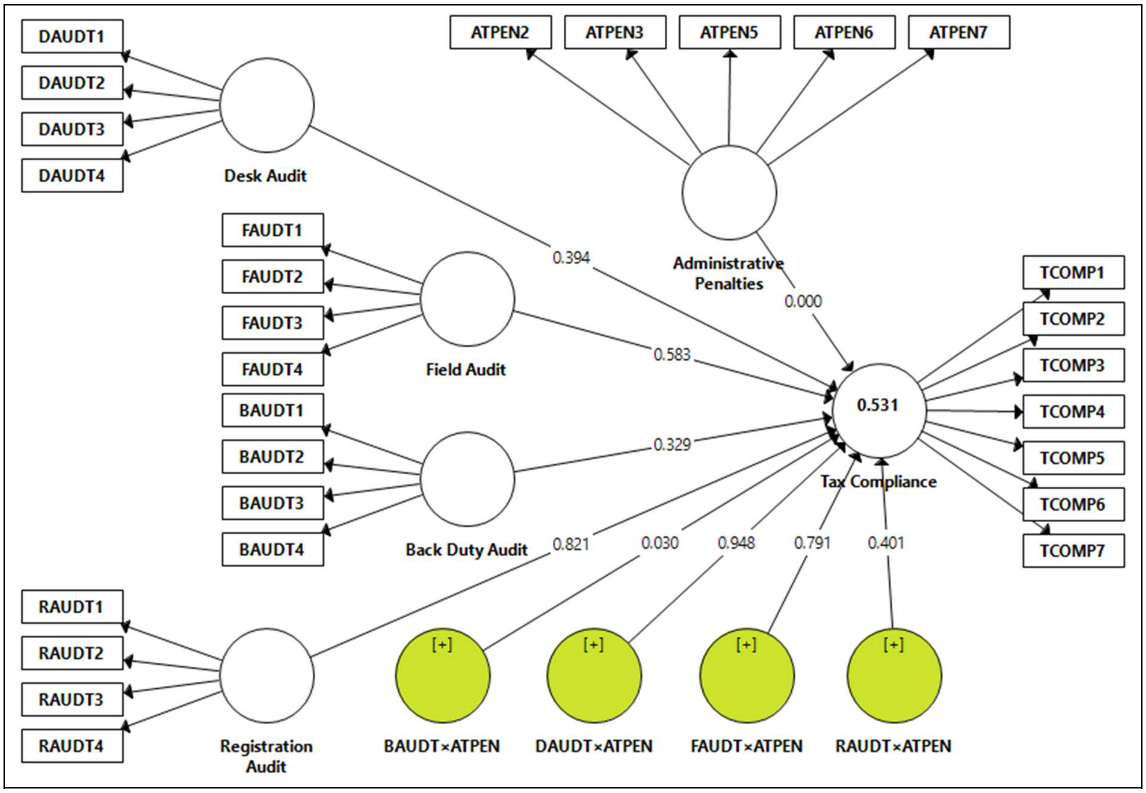
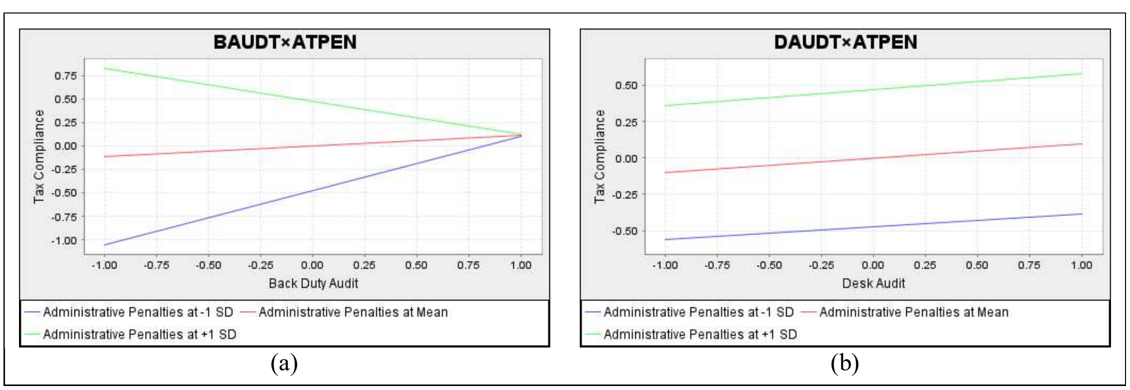


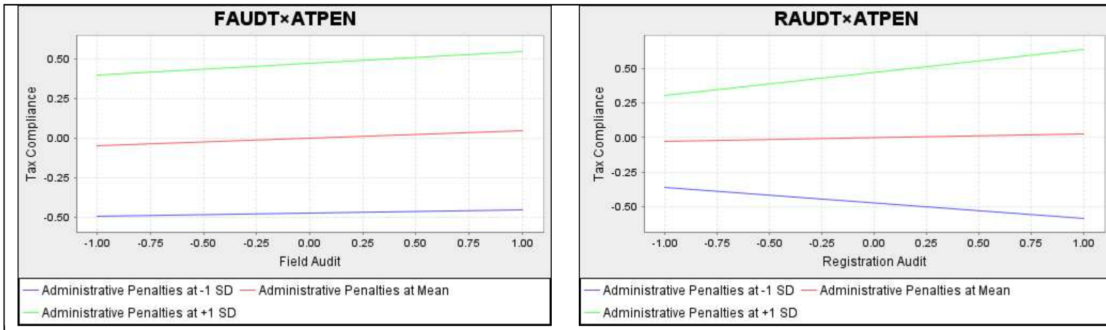
Figure 2. Structural Model

Simple Slope Analysis

The simple slope plot in Figure 3(a) shows that the effect of back duty audit on tax compliance depends on the level of administrative penalties, with a strong negative impact when the penalties are low, a reduced negative impact when they are moderate, and a positive impact when the penalties are high, although still resulting in a net decrease in tax compliance. These findings suggest that back duty audit may not be an effective tool for enhancing tax compliance, particularly when tax penalties are low, and tax authorities may need to consider alternative approaches to improve tax compliance. However, Figure 3(b) indicates no moderation effect from desk audits, implying that desk audits likely have a negligible influence on how administrative penalties affect tax compliance in the Northeast. Similar non-moderated picture is presented in Figure 3(c) for the interaction of field audit and penalties on compliance.



(a) (b)



(c) (d)

Figure 3. Simple Slope Analysis

Nevertheless, Figure 3(d) shows that the effect of registration audit on tax compliance depends on the level of administrative penalties, with a negative impact when penalties are low, no significant impact when penalties are moderate, and a strong positive impact when penalties are high. These findings suggest that registration audit can be an effective tool for enhancing tax compliance, particularly when combined with high administrative penalties, and tax authorities may consider leveraging this approach to improve tax compliance.

Model Fit Analysis

Three metrics were employed in assessing the fitness of the study model: R^2, Q^2, and $PLS_{predict}$. The adjusted $R^2 = 0.531$ indicates that 53.1% of the variance in tax compliance is explained by the independent variables included in the model, such as administrative penalties, different types of audits, and their interactions. This suggests that the model has a significant explanatory power, effectively capturing over half of the variability in tax compliance. While this demonstrates the model's effectiveness and relevance of the predictors, it also indicates that there is still 46.9% of the variance unexplained, which could be due to other factors not considered in the study.

Secondly, based on the Q^2 metric, the study's model demonstrates a moderate ability to predict about 15.6% of the variation in tax compliance ($Q^2 = 0.156$) can be predicted by the model using new, unseen data. Thirdly, the Q^2 outcome was supported by the $PLS_{predict}$ results shown in Table 8. Because the prediction errors were highly symmetrical, the root mean squared error (RMSE) was used in assessing the $Q^2_{predict}$ for all indicators of the measurement model (Shmueli *et al.*, 2019). According to the result in Table 8, the RMSE values of PLS-SEM are lower than those of the naive Linear Model for all indicators in the measurement model. Thus, the study model has high predictive power.

Table 8. MV Prediction Summary

	PLS		**LM**	
	RMSE	**$Q^2_{predict}$**	**RMSE**	**$Q^2_{predict}$**
TCOMP2	0.865	-0.137	0.978	-0.454
TCOMP7	0.925	0.284	1.059	0.063
TCOMP5	0.569	0.052	0.673	-0.328
TCOMP4	1.026	-0.051	1.215	-0.473
TCOMP3	0.699	-0.060	0.838	-0.519
TCOMP6	0.661	0.122	0.841	-0.421
TCOMP1	1.100	0.059	1.243	-0.201

Discussion

The relationship between desk audits and tax compliance, as indicated by the path coefficient $\beta = 0.119$ (SD = 0.134, $t = 0.886$, $p = 0.376$), suggests that desk audits do not have a statistically significant impact on tax compliance in this study. This finding aligns with the mixed empirical evidence and theoretical discussions surrounding the effectiveness of desk audits. Desk audits, which involve a structured review of taxpayer records without on-site visits, are generally considered effective in deterring non-compliance, as per deterrence theory (Abdulrasaq and Babatunde, 2024; Muhammad *et al.*, 2023). They can increase tax compliance by making the probability of detection higher and signalling to taxpayers that their activities are being monitored (ThankGod and Ajinwo, 2020). However, the non-significant result in this study ($p = 0.376$) suggests that this effect might not be universally applicable or sufficiently strong in all contexts.

The variability in the effectiveness of desk audits can be attributed to several factors. Manhire (2014) notes that the deterrent effect of audits is not always consistent across different taxpayer segments. Additionally, Okello (2014) warns that over-reliance on desk audits can undermine self-assessment principles and might not promote long-term voluntary compliance. This is particularly relevant for sophisticated taxpayers or those with irregular incomes, who might revert to non-compliance after the audit process (DeBacker *et al.*, 2018). Mebratu (2016) supports the notion that audits can influence taxpayer behaviour, but this influence is maximized when desk audits are part of a broader mix of audit strategies (D'Agosto *et al.*, 2018).

The result of the second hypothesis test ($\beta = 0.016$, SD = 0.093, $t = 0.169$, $p = 0.866$) suggests that field audits do not have a statistically significant impact on tax compliance in this study. This finding is surprising given the established literature on the effectiveness of field audits. Field audits are considered thorough and effective for ensuring accurate tax reporting (Bjørneby *et al.*, 2021). Field audits signal to taxpayers that their financial activities are being closely monitored (ThankGod and Ajinwo, 2020). Empirical studies have shown that field audits are particularly effective in boosting tax remittance and are strong predictors of future compliance (Bugaje *et al.*, 2023; Olaoye *et al.*, 2018). The in-depth nature of these audits allows for a indepth review of financial records, compelling taxpayers to provide detailed documentation, which is often more extensive than what is required for desk audits (Olaoye and Ekundayo, 2019; Olaoye *et al.*, 2018).

Despite this, the non-significant result in this study ($p = 0.866$) suggests that the effectiveness of field audits in promoting tax compliance may vary depending on the context or the sample of taxpayers examined. This might be due to several reasons. For instance, the deterrent effect of field audits may already be well-established among the studied population, leading to high compliance levels even before the audits are conducted (Umanhonlen, 2022). Alternatively, it could be that the sample includes taxpayers who are already highly compliant, thus diminishing the observable impact of additional audits (Advani *et al.*, 2023). Moreover, field audits are resource-intensive and may not always yield a significant return on investment in terms of improved compliance (Alwi, 2023), particularly if the targeted taxpayers are already adhering to tax regulations. Therefore, while literature supports the notion that field audits generally improve tax compliance, this study's results indicate that their impact may not be universally significant. This underscores the importance of considering contextual factors and the characteristics of the taxpayer population when assessing the effectiveness of field audits.

The test outcome on the third hypothesis was also non-significant ($\beta = 0.130$, SD = 0.124, $t = 1.050$, $p = 0.294$). This suggests that back duty audits do not have a significant impact on tax compliance, contrary to some studies that suggest they increase tax compliance (Hokamp, 2014) and curb tax evasion (Kastlunger *et al.*, 2009; Olaoye and Ekundayo, 2019).

This outcome may be due to the complexities and variations in the relationship between back duty audits and tax compliance, as highlighted in the literature. For instance, there may be a threshold beyond which increased auditing can decrease compliance (Lederman, 2018; Mendoza *et al.*, 2017). Additionally, the influence of tax audits may vary depending on the taxpayer's previous experiences (Lederman, 2018) and the specific sub-category of taxpayers (Manhire, 2014). Furthermore, back duty audits may have a negative correlation with compliance among taxpayers with a previous record of non-compliance, but a positive correlation among compliant taxpayers (Bergman and Nevarez, 2006).

Regarding the registration audit–tax compliance nexus, the findings of the study indicates a non-significant relationship between ($\beta = 0.002$, SD = 0.118, $t = 0.016$, $p = 0.987$). This surprisingly suggests that the registration audit, a crucial mechanism for tax authorities to bring individuals and corporate bodies into the tax net (Olaoye and Ekundayo, 2019), does not have a significant impact on tax compliance. This contradicts the conclusions of some studies (e.g., Adu and Amponsah, 2020; Efuntade and Efuntade, 2023), especially when the registration procedure has been greatly simplified (Hellerstein *et al.*, 2018).

Nevertheless, the non-significant result supports Olaoye *et al.*'s (2023) study, which found that merely bringing corporate and individuals into the tax net through registrations does not guarantee compliance (filing tax returns). Similarly, Gallien *et al.* (2023) reported that registration audit may not lead to compliance and may even skew the tax registry. This implies that expanding the tax net through taxpayer registration, a critical mechanism in tax administration (Olaoye and Ekundayo, 2019), may not be enough to ensure compliance. Simplifying the registration procedure (Hellerstein *et al.*, 2018) may also not be sufficient to guarantee compliance. Tax authorities may need to consider additional measures to improve tax compliance, such as regular tax audits, penalties for non-compliance, and education and awareness programs to inform taxpayers of their obligations.

The outcomes of the interaction between various tax audit types and administrative penalties on tax compliance follow similar pattern to that of the direct relationships. The interaction between back duty audit and administrative penalties has a significant negative effect on tax compliance ($\beta = -0.464$, SD = 0.214, $t = 2.172$, $p = 0.030$), while the interactions between desk audit, field audit, and registration audit and administrative penalties do not have significant effects on tax compliance ($p > 0.05$). The significant negative effect of the interaction between back duty audit and administrative penalties on tax compliance suggests that the threat of administrative penalties, such as fines and interests (de Troyer, 2023), may actually discourage taxpayers from complying with tax laws and regulations when they are subject to back duty audits. This finding contradicts the theory of deterrence, which suggests that penalties should weaken non-compliance (Kogler *et al.*, 2022; Smailes and Mcdermott, 2010).

The non-significant effects of the interactions between desk audit, field audit, and registration audit and administrative penalties on tax compliance suggest that the threat of administrative penalties may not be enough to incentivize taxpayers to comply with tax laws and regulations when they are subject to these types of audits. This finding is consistent with Oladipupo and Obazee's (2016) study, which found a positive but non-significant connection between penalties and compliance. However, the literature suggests that the severity and certainty of penalties can influence the effectiveness of penalties in promoting tax compliance (Abdulrasaq and Babatunde, 2024; Safiq and Bhisri, 2022). Additionally, the fairness of the tax system, service quality, and taxpayers' income levels can also impact the effectiveness of penalties (Muturi, 2021; Siregar *et al.*, 2019).

In conclusion, this study's findings suggest that none of the four types of tax audits (desk, field, back duty, and registration) have a significant impact on tax compliance, contradicting some studies that suggest they increase tax compliance. Additionally, the interactions between these audits and administrative penalties do not have significant effects on tax compliance, except for the interaction between back duty audit and administrative penalties, which has a significant negative effect. These findings highlight the complexities and variations in the relationships between tax audits, administrative penalties, and tax compliance, emphasizing the importance of considering contextual factors and taxpayer characteristics when assessing the effectiveness of tax audits and penalties. Tax authorities may need to consider additional measures to improve tax compliance, such as regular tax audits, penalties for non-compliance, and education and awareness programs to inform taxpayers of their obligations.

Implications

The results of this study have significant theoretical and practical implications. On the theoretical front, the significant positive relationship between administrative penalties and tax compliance supports the deterrence theory, which posits that penalties can deter non-compliant behaviour (Rabasco and Battiston, 2023). However, the non-significant relationships between back duty audit, desk audit, field audit, and registration audit and tax compliance suggest that audits alone may not be sufficient to ensure tax compliance, contradicting some studies that suggest audits increase tax compliance. Also, the significant negative interaction between back duty audit and administrative penalties suggests that the threat of penalties may actually discourage taxpayers from complying with tax laws and regulations when they are subject to back duty audits, contradicting the deterrence theory. This outcome may be due to perceived, not real, complexity of government tax audit (Baker *et al.*, 2014).

On the practical front, tax authorities should consider implementing administrative penalties as a strategy to improve tax compliance, as the results suggest that penalties are effective in deterring non-compliant behaviour (Oghuma, 2018). However, audits alone may not be sufficient to ensure tax compliance, and tax authorities may need to consider additional measures, such as education and awareness programs, to inform taxpayers of their obligations (Adekoya, 2019). Also, the interaction between back duty audit and administrative penalties suggests that tax authorities should reconsider the use of penalties in conjunction with back duty audits, as this may actually decrease tax compliance (Khodijah and Rosdiana, 2024). Instead, they may consider alternative strategies, such as providing incentives for compliant behaviour. Finally, tax authorities should also consider the specific context and characteristics of taxpayers when designing penalty systems, as the effectiveness of penalties may vary depending on these factors (Khodijah and Rosdiana, 2024).

Limitations and Future Research

This study has several limitations. Firstly, the study relied on perceptual data from tax practitioners, which may be subject to biases and inaccuracies. Secondly, The study only considered data from tax practitioners, excluding taxpayers' perspectives. Thirdly, the study the study variables were examined without considering other factors that may influence tax compliance, such as tax rates, tax incentives, and economic conditions.

Future research should address the several concerns. Firstly, future studies should use objective data sources, such as tax returns and audit records, to reduce biases and inaccuracies. Secondly, such studies should collect data from both tax practitioners and taxpayers, using surveys, interviews, or focus groups, to provide a wholistic understanding of tax compliance. Finally, should consider the relationships between the study variables in conjunction with other influential factors, such as tax rates, tax incentives, and economic conditions, to provide a more comprehensive understanding of tax compliance.

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