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Tax Audits, Penalties, Enforcements, and Tax Compliance Among Small Retail Firms

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ABSTRACT: A major problem in developing countries, including Ghana, is the high rate of tax evasion. This has adverse implications for development as the government largely relies on tax revenue for embarking upon national developmental activities. There is therefore a need to explore avenues to prevent tax evasion and increase tax revenue by adopting measures that promote tax compliance. This study examined the effect of tax audits, firm knowledge, and tax penalty enforcement on tax compliance among firms in the Kumasi Metropolis in Ghana. The quantitative research approach was adopted. A sample of 50 firms was randomly selected. A logit multivariate regression technique was employed to analyze data. In relation to firm size, the study finds that tax audit, the firm's knowledge and awareness of tax penalties, and the enforcement of tax penalties are positively related to tax compliance. The study therefore recommends that tax authorities increase tax auditing activities, disseminate more information on tax penalties, and enforce these penalties effectively. Through education, auditing, and enforcement of tax penalties, tax evasion could be reduced.

Keywords: Audit, Tax, Compliance, Penalty, Evasion.

INTRODUCTION

Taxes are regarded as a crucial source of government revenue. (Devos, 2008) This is affirmed by the assertion that in most countries, taxes typically constitute more than 50% of total revenues. Specifically, in the Ghanaian context, tax makes up a significant share of government income. For example, in 2012, out of the total revenue and grants of GH¢3.5 billion, tax revenue accounted for GH¢2.7 billion (Bank of Ghana Monetary Policy Report, 2015). In 2015, tax revenue represented 15% of Ghana's GDP (OECD, 2015). In 2017, from a total revenue of GH₵3,367.8 billion, a substantial part was tax revenue, roughly 2.572.9 billion Ghana cedis. Governments utilize taxes to reallocate resources and assets from the private sector for public purposes (Organisation for Economic Co-operation & Development, 2021). Thus, according to Wenzel (2004), tax collection reallocates assets

and resources from private individuals toward the common good. To facilitate this, (Brooks, 2001) recommends that people must part with some of their assets and resources for collective benefit. However, in many emerging economies in Sub-Saharan Africa, individuals and businesses have largely failed to pay taxes for developmental projects over the years. This could be due to the high administrative and financial costs of taxes; SMEs in Ghana frequently struggle with tax compliance (Bruce-Twum, 2023). This has led to widespread tax evasion among people and businesses in these countries. Consequently, tax evasion is recognized as one of the main obstacles hindering effective tax administration in developing economies (Ameyaw & Dzaka, 2016).

Over the years, scholars and development practitioners alike have been preoccupied with factors that contribute to tax compliance. Tax compliance, as used in this context, refers to a situation in which individuals and businesses willfully obey tax laws and administration without them being forced to do so by enforcement activity. As old as taxes themselves is the issue of tax compliance. Tax administrators face the difficulty of defining and characterizing the alleged types of non-compliance and ultimately figuring out how to reduce them. Since it is difficult to persuade taxpayers to comply with tax rules, getting them to do so has been and continues to be a primary worry for many tax administrators worldwide, and this has an unfavorable effect on the economy.

Tax audits are among the elements that have been identified as improving tax compliance (Zubairu et al., 2025). The Organization of Economic Cooperation and Development (2001) defines a tax audit as an evaluation of whether a taxpayer has accurately determined and declared their tax liability and fulfilled other commitments. Because taxpayers are inherently inclined to minimize their proper tax due through tax avoidance or tax fraud, the implementation of tax audits in the tax system is crucial (Dubin, 2004). This is an ongoing discussion, and the topic is relevant to development economics and public finance. The empirical findings will therefore reinforce the importance of enforcement mechanisms in fiscal systems within low-income countries such as Ghana.

The importance of tax audits in ensuring tax compliance cannot be overemphasized. For example, the economic deterrence theory of taxation contends that more audits and fines should be applied to increase compliance, which gives incentives priority (Amoh et al., 2023). Many strategies, including punitive and persuasive ones, can be used to achieve deterrence. Therefore, deterrence can be achieved by lowering the tax rate, raising the likelihood of detection, or enforcing harsher penalties(Bedi, 2016). Additionally, it has been suggested that audit rates and audit thoroughness may incentivize taxpayers to complete their tax forms more carefully, declare all income, and claim the appropriate deductions to determine their tax burden. However, taxpayers who have never been audited may feel pressured to make bogus deductions and underreport their true income. From this angle, it is reasonable to argue that tax audits can transform negative compliance behavior into positive compliance behavior.

For governments to provide essential public goods and services, create fiscal space, and reduce their dependence on foreign aid and grants, there is a need to improve tax collection (Ali et al., 2022). (Drummond et al., 2012) assert that raising more revenue through taxation locally is a need for most African nations. Notwithstanding the vital role of internal tax mobilization, the International Monetary Fund (2005) has observed that the tax base of most developing countries is rife with widespread tax

evasion and avoidance (Drummond et al., 2012; Okello, 2019). Noncompliance is a growing global issue(Torgler & Schneider, 2020), and the Sub-Saharan African region, including Ghana, is no exception. Compliance burden and complexity in the tax system contribute to significant tax gaps among micro and small businesses in Ghana (Atta Peprah et al., 2022). Tax evasion in developing economies like Ghana is largely explained by structural and institutional weaknesses, as evidenced in SEM analysis (Oduro et al., 2018). Prior research in the Tamale Metropolis found that economic factors,including inflation and market volatility, have a detrimental effect on SMEs' desire to pay taxes (Baba, 2022)

Moreso, previous research in Ghana has not fully explored the effect of tax audit on tax compliance. These studies, therefore, aim to bridge this gap by examining the effect of tax audits, penalties, and enforcement on tax compliance in Ghana. The present study aims to bridge this gap by exploring the research problem in the context of firms in the Ashanti region of Ghana. Statistics for 2017 indicate that the Ashanti region contributes only 4% of the total revenue collected annually and thus highlighting poor performance. This poor performance even becomes more reinforcing as the Ashanti region ranks second in terms of the number of registered firms and business activities in Ghana (Ghana Revenue Authority). In a recent development, the Assistant Commissioner of the GRA in Ashanti region, Samuel Sakyi Duodu, iterated his commitment to increase the performance in tax collection by engaging the Information Service Division and the National Commission of Civic Education (NCCE) to spearhead tax education (myjoyonline.com, 2018).

It is important to note that the Internal Revenue Service's Tax Audit section was moved from the Research Planning and Monitoring (RPM) department to the Ghana Revenue Authority's (GRA) Domestic Tax Revenue Division (DTRD) following the enactment of the Ghana Revenue Authority Law in 2010.

In Ghana, the Tax Audit unit has the responsibility to review taxpayers' financial accounts to determine their completeness, accuracy, and dependability (Amoh et al., 2023; Yao & Li, 2008). Detecting and combating tax evasion and avoidance strategies, optimizing declared tax liabilities, ensuring compliance with tax laws, and advising the GRA on policy formation are all linked objectives. In this sense, a tax audit is an examination of a taxpayer's financial records and tax return(s) carried out by the Tax Audit unit. A report on the organization's financial situation, profit and loss account, and other relevant accounts and schedules that are an integral part of a financial report must also be disclosed as part of the audit process, along with all key accounting methods used by the company (Amoh et al., 2023). It can also be necessary to gather any additional data needed to calculate the assessable income and make sure that all tax laws and regulations are being followed(Baba, 2022). This study, therefore, aims to examine the effect of tax audits, firms' knowledge and awareness of tax penalties, and enforcement of tax penalties on the tax compliance level of selected firms in the Kumasi Metropolis. In relation to this main objective, the study will seek to achieve the following:

1. To investigate the effect of tax audits on firms' tax compliance in the Kumasi Metropolis.
2. To assess the effect of firms' knowledge and awareness of tax penalties on tax compliance.
3. To determine the effect of the enforcement of tax penalties on tax compliance.

Empirical Review

The deterrence theory serves as the foundation for our investigation. According to the deterrence hypothesis, which has an economic foundation, more tax audits and fines for non-compliance are necessary to boost tax compliance. According to the argument, the advantages that people who follow the law can experience come first. Either punitive or persuasive methods can be used to achieve deterrence. Therefore, deterrence can be achieved by lowering the tax rate, raising the likelihood of detection, or enforcing harsher penalties (Fischer et al., 1992). "Perfectly moral, risk-neutral or risk-averse individuals who aim to maximize their utility and decide to avoid tax if the projected gain surpasses the cost" is the description of taxpayer compliance (Cobham, 2005). The evidence that fines affect tax compliance is supported by (McKnight et al., 2002), even if the impact was essentially ignored. But according to other research, stiffer fines may encourage more taxpayers to avoid paying taxes, which would be a bad thing (Kirchner 2007), cited by (Amegashie & Dzahene-Quarshie, 2023)

Allingham and Sandmo (1972) (A&S) established a simple model of the decision to pay taxes based on (Becker et al., 1987) analysis of criminal conduct in their groundbreaking work on evaluating tax evasion decisions at the individual level. They believe that the amount of declared income that is subject to taxation is determined by balancing the expected costs and benefits: the person may be audited and punished if found to have underreported his income, but he may also avoid being audited and avoid paying taxes. To maximize his expected utility, the individual determines how much to avoid, assuming a certain estimated probability of being audited. It is simple to demonstrate with this model that the "ideal" amount of tax evasion decreases as the likelihood of an audit and the severity of the penalty increase.

First, what is the empirical equivalent of a person's tax-exempt income that they might be able to underreport due to incentives? In many cases, the employer imposes tax authority (in addition, the employer frequently serves as a tax withholding agency). Therefore, the employee cannot fail to declare this portion of his pay. The same is true for income that banks report that comes from interest earned on financial assets. There is very little chance of underreporting income and avoiding taxes in these situations. Therefore, the deterrent model should be applied to that portion of income, or the payer may actually avoid discovery without being certain. The "opportunity" for income misreporting is a major determinant of evasion (Slemrod, 2001).

The perceived likelihood of being discovered or audited is a second concern. How is this perception established? The likelihood that this chance is endogenously determined if it decreases with reported income is already taken into consideration in the seminar by Allingham and Sandmo (1972). It is demonstrated that the simple mode yields consistent results. Although this assumption is tenable (the more revenue disclosed, the less the tax agency suspects that illegal activity is taking place), it would be preferable if this probability were based on a clear examination of the tax agency's real policies. Reinganum and Wilde (1985) record this study, assuming the tax authorities can commit to an audit rule. The expanded model's primary prediction is that, when reported income falls below a threshold amount, an audit will take place with a probability equal to p*. In contrast, reports that exceed this threshold will not be inspected.

This result should not be interpreted as meaning that wealthy people are not audited, but rather that a low-income report will almost certainly result in an audit because the tax authority is aware of certain personal characteristics (age, education, occupation, previous reported income values, etc.) that help place the taxpayer in a particular income bracket. The approach as mentioned earlier, is predicated on highly intelligent taxpayers who research the tax authority's audit policy-making process to ascertain its assessment of the likelihood of being audited. Furthermore, in equilibrium, the inferred likelihood by tax authority decisions is equal to the perceived probability. Of course, this is rarely the case in reality. According to Alm et al. (1992), most people seem to significantly overestimate the likelihood of an audit, which leads to higher-than-expected compliance. Additionally, (Fischer et al., 1992) show that perceptions of detection risk, not the actual detection rate, drive taxpayer compliance. Personal experiences, tax law knowledge, expert tax guidance, and other demographic traits all contribute to this perception (Iyer et al., 2010). From the perspective of the empirical research that follows, it is crucial to determine if tax authorities' policy actions can influence these perceptions. For instance, by notifying us via letters that the tax administration is strengthening certain areas of the tax control regulations.

Lastly, it has been suggested that the deterrence model is influenced by both the likelihood of detection and the harshness of the punishment if illegal activity is discovered. In this situation, public action to strengthen enforcement may involve raising fines or just making taxpayers more aware of the consequences already in place if tax cheating is discovered. Using the US economy as an example, (Iyer et al., 2010) state that most firms in the State of Washington (USA) were unaware of the mandatory and discretionary fines that were enacted because they had not been enforced regularly in the past.

Tax Audit and Tax Compliance

Regarding tax compliance, tax audits have been analyzed in many ways. A few studies have found that tax audits had a favorable effect on tax evasion (see Jackson and Jaouen, 1989; Shanmugam, 2003; Dubin, 2004), according to Palil and Mustapha (2011). These findings imply that tax audits, whose main goal is to promote and enhance voluntary compliance, can be extremely important in self-assessment setups. According to Palil and Mustapha (2011), audit rates and the meticulous nature of the audit could encourage people and taxpayers to file their taxes more carefully and sensibly, record all of their earnings, and take the appropriate deductions to determine their tax liability. It is interesting to note that taxpayers and citizens who have never been inspected or audited could be persuaded to make incorrect deductions and underreport their actual salaries. Additionally, Butler (1993), referenced in Palil and Mustapha (2011), discovered that tax audits have the power to transform a taxpayer's compliance behavior and conduct from bad to good. The results of the research by Witte and Woodbury (1985) and Beron, Tauchen, and Witte (1988) are supported by these findings. In their study on small business owners, Witte and Woodbury demonstrated the importance of tax audits in maintaining tax compliance. They left open space and room to guide studies about their area because they did not exactly test taxpayers and specific residents. (Beron et al., 1988) discovered the opposite

of Butler (1993) and Witte and Woodbury (1985), who both reported important and remarkable results. They reported that tax audits did not altogether relate to evasion for all groups of people they studied. Audits were observed to be more compelling and effective in actuating citizens and taxpayers to overclaim deductions as opposed to urging them to accurately report actual income (Beron et al., 1988)

Evans, Carlon, and Massey (2005) focused on Australian small and medium-sized businesses' (SME) tax compliance in a different study. Their objective was to investigate and evaluate the connection between SMEs' record-keeping procedures and the possible emergence and vulnerability to tax compliance problems. According to the study's hypothesis, SMEs' poor tax compliance would make the tax authority more inclined to broaden its scope and conduct more audits and investigations. 129 small business owners, 130 tax experts, and auditors and inspectors from the Australian Tax Office (ATO) participated in this study. Using postal questionnaires, this study discovered that tax compliance (in terms of record keeping) is significantly impacted by the type of audit of small business owners, audit outcome, and audit history. The results further support the idea that tax compliance, rather than some aspect of business management, is the primary reason small business owners keep records. Thus, as the number of tax audits rises, many SMEs will try to justify their books by maintaining accurate records of their operations.

From the above, previous studies have proven that tax audits play a vital part in expanding and increasing voluntary compliance. Audit rates and the careful quality of the audits could urge citizens and taxpayers to be more judicious in completing their tax assessment forms.

Probability of Detection and Tax Compliance

According to (Butler ,1993), if there is a high chance of identification and detection, citizens and taxpayers will always and always state their income and salary truthfully. Since citizens and taxpayers will disclose anything if they believe they will be among the auditees in that particular year, the likelihood of identification and detection plays a significant role in reporting conduct and behavior (Riahi-Belkaoui, 2004; Richardson, 2008). Slemrod, Blumenthal, and Christian (1998) investigated the connection between the citizens' and taxpayers' responses and the possibility of being inspected or audited. According to the studies, people's behavior changed depending on their income level, and the possibility of being assessed and audited was a major factor in determining how taxpayers and citizens behaved when evading taxes. In any event, Slemrod et al. (1988) did not clearly state the relationship's trajectory. Their findings were further supported by Andreoni et al. 1998), who discovered that prior audit experience and regular communication (connection) with the tax authority impacted, broadened, and enhanced taxpayer and citizen compliance. On the other hand, Young (1994) and Slemrod et al (2001) found that the likelihood of being evaluated and audited again was adversely and negatively correlated with compliance behaviour (Palil & Mustapha, 2011).

According to Palil and Mustapha (2011), (Bergman, 1998) looks at tax compliance behavior and conduct in Argentina using two approaches: 1) steps to make business citizens and taxpayers better,

and 2) wide-ranging campaigns and audits that will broaden and raise the possibility of detection among individual citizens and taxpayers. The results demonstrated that individuals and taxpayers are encouraged to abide by the tax laws and accurately disclose their income as the scope of audits and the possibility of detection grow. This implies that, in addition to intentional evasion, unforeseen evasion may occur (p. 63). Additionally, he claimed that the lack of audits and investigations conducted by Argentina's tax authorities in the 1980s had caused individuals and taxpayers to continue "heedlessly." Additionally, people and taxpayers employed less traceable documents and more unexpected tax evasion strategies in an attempt to pay less tax because they felt they would not be caught due to the lack of inspections and investigations. Bergman's results support the theoretical and scholarly theory that the fear of detection influences compliance behavior, suggesting that evaders take preventative action when the perceived risk of detection is high.

Awareness of Offenses, Penalties, and Tax Compliance

A hypothetical financial model put forth by Allingham and Sandmo (1972) unequivocally demonstrates how penalties and the possibility of an audit affect tax compliance (Baba, 2022). The likelihood that someone will participate in tax evasion decreases with the severity of the penalty and the likelihood of an audit. However, because the results are resolved endogenously with tax cheating, more sophisticated models, such as game theory and principal-agent theory, imply that penalties and audit probability are challenging to depict in compliance models (Andreoni et al., 1998). According to Andreoni et al., it is critical to use laboratory experiments to "misleadingly" influence the implementation environment to address endogeneity. Beck, Davis, and Jung (1991) and Becker, Buchner, and Sleeking (1987) have backed this approach with their trials, which showed that punishment rates affect tax compliance as expected by theory. However, compared to real-world settings, a testing approach restricts the environment to a limited perspective. According to Bryman and Bell (2003), research that can be carried out with a high degree of control and structure is appropriate for experimental methods. However, direct observation may have a greater impact on tax compliance than an exploratory method (Alm, Jackson & McKee, 1992). Marrelli (1984), Gordon (1990), (McKnight et al., 2002), Marrelli and Martina (1988) also discovered a negative correlation between punishment rates and evasion. On the other hand, Virmani (1989) found that evasion was positively correlated with greater punishment rates, suggesting that harsher penalties can incentivize certain people to cheat.

Awareness of infractions is particularly important because prior research shows that punishment rates affect tax compliance practices. People may be less prone to avoid taxes if they are aware of the crimes they commit and the consequences of doing so. On the other hand, people might be more likely to cheat if they do not know the repercussions or the precise crimes they could be charged with if found, thinking they will not be caught and that they can save money. Thus, it might be quite important to inform and educate taxpayers and residents about the consequences of avoidance. Punishment alone might not be as successful as such awareness campaigns.

METHOD

Quantitative research approach was employed in this study. (Alon, 2009; Whitesides, 2004) posits that quantitative methods in general emphasize objective measurements using existing computational statistical techniques to generalize a phenomenon (Harrison McKnight, 2002; Pennanen et al., 2007). The essence of the quantitative method was to predict relationships between and among dependent and independent variables. The primary goal of this study was to ascertain the relationships between tax audit, penalties, and enforcement, being independent variables on one hand, and tax compliance, being the dependent variable on the other hand. To test or estimate the relationships among these variables and determine whether significant relationships exist between them, there was a need to use a quantitative research approach.

The target population for this study was all firms (companies) in the Kumasi Metropolis that were duly registered with the Ghana Revenue Authority for tax payment. The choice of Kumasi Metropolis was influenced by the fact that it is the regional capital of the Ashanti Region, which places second in terms of the number of companies in Ghana, and the volume of business activities in this region is relatively high compared to other regions (GRA report, 2023).

The concentration of businesses in the Metropolis is higher than in any other part of the region; being the regional capital, most companies have their operations located in the city. Therefore, this population unit provided a rich empirical case for studying the impact of tax audit, penalties, and enforcement on tax compliance among firms.

The number of registered firms in the city was 3,083, according to the records from the offices of the GRA and the National Board for Small Scale Industries (NBSSI). This number was therefore used as the population for the study.

A sample of 50 firms was selected for the study. This figure was arrived at by applying a sample size determination formula given by Miller and Brewer (2003). It is stated as:

$n = \frac{N}{1+N(\alpha)^2}$ Where 'N' is the sampling frame or the population from which the sample is drawn (3,083); n' is the sample size to be determined, and 'α' is the confidence interval (calculated at a 0.05 significance level).

50 firms or respondents who were managers or financial accountants responsible for the filing of taxes at the tax office on behalf of their companies were involved. The 50 firms were randomly selected so that each firm in the population had an equal chance of being selected; the firms were assumed homogeneous, possessing similar characteristics, and so randomly selecting them was not problematic.

Questionnaires were used as the research instrument. The questionnaire was designed to elicit data on the variables of the study. Therefore, in addition to demographic variables of selected firms, the questionnaire also captured questions on tax audit, penalties, enforcement, and tax compliance. The researcher personally administered the questionnaire to the target respondents using the drop-and-

pick method, in which the questionnaires were distributed and collected from respondents on a date agreed upon by the two parties.

Specifically, the questionnaire contained five sections, A to E. The first section (section A) covered questions on demographic characteristics of respondents. The second section (section B) contained questions on tax compliance. Section three (section C) contained questions on firms' knowledge and awareness of tax penalties. Section four (section D) captured questions on tax audits, while the last section (section E) contained questions on penalties and enforcement.

A modified five-point Likert scale design of questions, in the form of multiple choice questions, was employed in appropriate sections of the questionnaire where responses to statements that reflect the degree of agreement or disagreement of respondents ranged from alternative answer options (a) to (e) for strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree, respectively.

To determine the impact of tax audits, firms' knowledge and awareness of tax penalties, as well as the enforcement of tax penalties on tax compliance, the study determined tax compliance through firm registration with the Ghana Revenue Authority (GRA) and firms having filed returns within deadlines. Assuming γ_i (Binary Dependent Variable) is the observed reaction of each sample population (ith observation). Hence, $\gamma_i = 1$ represents tax compliance, and $\gamma_i = 0$ for no compliance. Thus, the dependent variable used in probing the drivers of tax compliance was considered a binary dummy variable having a value of one (1) if firms comply and a value of zero (0) if firms do not comply. The logistic regression model used is stated below:

$$\text{Prob}(\gamma = 1/X) = f(X, \beta)$$

$$\text{Prob}(\gamma = 0/X) = \{1 - f(X, \beta)\}$$

$$f(X, \beta) = X'\beta$$

In which X is the significant impact and β represents the parameters to be estimated.

The empirical model for the study was specified as follows;

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where: Y is tax compliance, the dependent variable; α is a constant term; β_1, β_2, β_3 and β_4 are coefficients indicating rate of change of tax compliance in response to changes in the independent variables of probability of being audited, penalties and enforcement and firm size; X_1 is the of audited X_2 represents firm's awareness and knowledge on penalties; X_3 stands for penalties and enforcements and X_4 is firm size, a control variable while ε is the error term.

RESULT AND DISCUSSION

The inclusion of firm size was to assess if certain firm-specific variables, including firm size itself, affect the level of tax compliance. Besides, the inclusion of firm size helps to increase the variance of

the study. According to Curwin, Eason, and Roger (2008), it is usually prudent to build models with more variables since the problem of increased variance may be easier to deal with than the problem of biased prediction.

Table 1. Definition of variables

Variable	Type of Variable	Description
Tax compliance	Dependent	A dummy variable with 0=No and 1=Yes
Tax audit	Independent	A variable on a scale of 1 to 5, 1=Strongly disagree, 2=Disagree, neither agree/disagree, agree and 5=Strongly agree respectively
Knowledge and awareness of penalties	Independent	A variable on a scale of 1 to 5, 1=Strongly disagree, 2=Disagree, neither agree/disagree, agree and 5=Strongly agree respectively
Penalties and enforcement	Independent	A variable on a scale of 1 to 5, 1=Strongly disagree, 2=Disagree, neither agree/disagree, agree and 5=Strongly agree respectively
Firm Size	Independent Control Variable	Dichotomous Variable Large firm=1 and Small firm=0

Source: Author's Construct, Kwakye (2018)

The study used the logit model regression analysis to evaluate the impact of the independent variables, specifically, business size, fines and enforcement, and the likelihood of being audited, on the dependent variable, tax compliance. The logit model is applied anytime a dependent variable is binary (also known as a dummy), meaning it can only take values of 0 or 1, according to Torres-Reyna (2012). He also notes that the output (predicted values) of the logit regression model is a nonlinear regression model that requires the values to be either 0 or 1. The logit model is considered appropriate variable tax compliance, is binary (measured as yes or no), which is equivalent to 0 or 1. Data editing and coding were made easier with SPSS Version 20.

Results of the multicollinearity test

The results of the test for multicollinearity among the independent variables used in the study's model are shown in Table 2. This was crucial since a high level of multicollinearity may result in skewed regression estimates. Table 3's Variance Inflation Factor, or VIF, measures the degree of inflation in each of the independent variables' variances. In the presence of multicollinearity, the variances and standard errors of the computed coefficients are exaggerated. Stated otherwise, relatively large VIF values indicate a high degree of multicollinearity, which may be caused by the relationship between any independent variables or predictors in the model.

According to Table 2's tax audit VIF, there is a 1.381 increase in the variance of the estimated coefficient of probability of being audited. This implies that there is little multicollinearity and a weak

correlation between tax audit and any other independent variable in the model. There appears to be no link between the inflation rate and any other independent variable in the model, as indicated by the firm's knowledge and awareness of tax penalties' VIF of 1.559. The low level of multicollinearity is also suggested by the fines and enforcements VIF of 1.320. The test results indicate no multicollinearity problem in the model.

Table 2: Test of Multicollinearity

Model	Collinearity Statistics	
	Tolerance	**VIF**
Tax Audit	.107	1.381
The firm's knowledge and awareness of penalties	.641	1.559
Penalties and Enforcement	.107	1.320

Source: Field survey, Kwakye (2018)

Logit regression results

The purpose of this study is to investigate how tax audits, firms' awareness and knowledge of tax penalties, and the enforcement of tax penalties affect a subset of firms' tax compliance. In order to do this, the dependent variable, tax compliance, was treated as a binary dummy variable. For enterprises registered with the GRA that filed tax returns on time, the value of this variable was one (1); otherwise, it was zero (0). With the use of a modified five-point Likert scale, respondents were asked to rate their agreement or disagreement with the independent variables (tax audits, firms' knowledge and awareness of tax penalties, and enforcement of tax penalties), which were deemed qualitative in nature. The methods of logistic regression were used to model the gathered data. According to Table 3's regression model summary, the R-squared value is.583, meaning that all of the independent variables in the model account for almost 58% of the variance in tax compliance. Other factors not included in the model account for the remaining 42 percent of the variance.

It is crucial to remember that the logit model's coefficient estimates for the explanatory variables indicate the probability of changes in the dependent variable in response to adjustments in the independent variables. Therefore, changes in tax audits, firms' knowledge and awareness of tax penalties, and the enforcement of tax penalties can all be used to explain changes in tax compliance. A positive coefficient implies that the likelihood of the dependent variable rising is greater when the independent variable rises, whereas a negative coefficient shows a decreasing probability of the dependent variable increasing. Table 2 presents the findings of the logit regression evaluating the impact of tax audits, firms' awareness and knowledge of tax penalties, and the enforcement of tax penalties on tax compliance.

Table 3: Logit regression results: Dependent variable is tax compliance

Variable	Coefficient	Std. Error	Z-stat.	Prob.
Intercept	8.745	2.129	4.107	0.000
Tax Audit	1.35	3.61	0.374	0.001***

Variable	Coefficient	Std. Error	Z-stat.	Prob.
Awareness of tax penalties	0.44	1.25	0.352	0.016**
Penalties and Enforcement	0.76	0.86	0.884	0.023**
Firm Size	0.35	2.15	0.163	0.345
R	.778[a]			
R Square	.605			
Adjusted R Square	.583			
Std. Error of the Estimate	.423			
Log likelihood	-59.73			

Source: Field survey, Kwakye (2018). Notes: *** and ** denote significance at 1% and 5% respectively

The effect of tax audit on the tax compliance of firms

The main objective of the study was to ascertain how tax audits affected specific Ghanaian businesses' tax compliance. This study subject is addressed using the logit regression output displayed in Table 3. The tax audit coefficient is 1.35, as shown in Table 3. The tax audit has corresponding significance value of 0.001 at one percent (1%). This suggests that there is a statistically significant and unlikely-to-be-random association between tax audits and tax compliance. The positive sign of the coefficient suggests that there is a positive correlation between tax compliance and the possibility of an audit.

Specifically, when all other independent variables are included in the model and maintained constantly, the results suggest that an increase in tax audit has a 1.35-unit likelihood of causing firms to comply with tax payment. Likewise, a unit decrease in tax audit will result in a 1.35-fold rise in the probability of tax non-compliance if all other variables in the model stay the same.

The deterrence argument, which argues that because tax audits provide a way to uncover tax violations, they may deter people from participating in non-compliance behavior, is theoretically supported by the finding of a positive impact of tax audits on tax compliance. The conclusion that there is a positive relationship between tax audit and tax compliance is supported by the findings of Jackson and Jaouen (1989), Dubin (2004), and Palil and Mustapha (2011), who also found a positive correlation between the likelihood of being audited and tax compliance in their empirical investigations.

Palil and Mustapha (2011), for example, contended that audit rates and the thoroughness of the audit could incentivize citizens and taxpayers to be more cautious and prudent when completing their tax returns, disclosing all of their earnings and income, and claiming the right deductions to calculate their tax liability. They concluded that residents and taxpayers who have never been inspected or audited may be influenced to underreport their true salaries and make false deductions.

What Butler (1993) (quoted in Palil & Mustapha, 2011) discovered—that tax audits have the power to transform a taxpayer's compliance conduct and behavior from bad to positive—is further supported by the data analysis findings presented in this section. The results of the investigations by Witte and Woodbury (1985) and Beron et al. (1988) are supported by Butler's (1993) findings. In their study on

small business owners, Witte and Woodbury demonstrated the importance of tax audits in maintaining tax compliance.

Evans, Carlon, and Massey (2005) focused on Australian small and medium-sized businesses' (SME) tax compliance in a different study. Through the use of postal questionnaires, the study discovered that tax compliance (concerning record keeping) is significantly impacted by the type of audit of small business owners, audit outcome, and audit history. The results further supported the idea that tax compliance, rather than some aspect of business management, is the primary reason small business owners keep records. In this approach, many SMEs would try to justify their books by maintaining accurate records of their operations as tax audits rise.

The empirical conclusion by Beru et al. (1998), however, which indicated a negative link between tax audit and tax compliance, contrasts with the finding suggesting the favorable influence of tax audit on tax compliance. These discrepancies in results about the connection between tax audit and tax compliance could be explained in part by differences in sample sizes, methodology, and operational definitions. Once more, Beron et al. (1988) found that not all of the groups they looked at had a direct correlation between tax audits and evasion. Instead of encouraging residents and taxpayers to accurately declare their real income, audits were found to be more persuasive and successful in persuading individuals to overclaim deductions (Beron et al., 1988).

The reader can learn about the degree of agreement reached by academics regarding the beneficial role tax audits can play in achieving tax compliance among taxpayers by combining all the empirical results on the impact of tax audits on the tax compliance behavior of taxpayers. Previous research has demonstrated that tax audits play a crucial role in promoting and enhancing voluntary compliance. The frequency and caliber of audits may encourage taxpayers and residents to fill out their tax assessment forms more carefully.

The effect of firms' knowledge and awareness of tax penalties on tax compliance.

Assessing the impact of a firm's knowledge and awareness of tax penalties on tax compliance was the study's second goal. The firm's knowledge and awareness coefficient is 0.44. This indicates that tax compliance and a firm's understanding and awareness of tax penalties are positively correlated. According to this finding, businesses are 0.44 times more likely to comply with tax payment requirements if they are better informed about tax penalties. Furthermore, with a p-value of 0.016, the findings demonstrate that a firm's knowledge and awareness of tax penalties has a substantial impact on tax compliance at five percent (5%).

The inference is that the taxpaying public's compliance behavior and attitudes can be improved by raising awareness and increasing taxpayers' knowledge of the penalties or repercussions linked to non-compliance, non-payment of taxes, and non-adherence to tax legislation. The market becomes inefficient due to parties speculating and misinterpreting regulatory regulations because of inadequate knowledge or information asymmetry. To encourage behavioral and attitudinal changes, authorities

should acknowledge the importance of engaging with taxpayers regularly and providing them with pertinent and timely situational information as frequently as feasible.

The findings highlight the duties placed on tax authorities to guarantee that the general public is adequately informed about the consequences of non-compliance with the current tax regimes. Tax authorities may be able to achieve significant levels of understanding and compliance by implementing programs to educate the public about penalties and sanctions, but failing to meet this need may lead to increased levels of non-compliant behavior and the ensuing tax evasion.

The effect enforcement of tax penalties on tax compliance

Determining the impact of tax penalty enforcement on tax compliance is the study's ultimate goal. The empirical data, as presented in Table 3, shows that the coefficient of penalties and enforcement is 0.76, demonstrating a positive relationship between the two variables—that is, tax compliance and penalties and enforcement. With a p-value of 0.023, it is also determined that the impact of fines and enforcement on tax compliance is five percent (5%) significant. If other predictors remain constant, an increase in penalties and enforcement will result in a 1.76 rise in businesses' tax compliance behavior. Similarly, corporations will be 1.5 times less likely to comply with tax laws if fines and enforcement are reduced, after controlling for other variables (Chau & Leung, 2009) cited in (Atta Peprah et al., 2022) claim that the possibility of detection could act as a motivator for taxpayers to pay taxes is supported by the discovery of a positive correlation between fines and enforcement and tax compliance. They contend that the likelihood of an audit and the severity of the penalty reduce the incentive to avoid paying taxes.

In a related study, (Chepkurui et al., 2014), Wang and Conant (1988), (Gordon, 1990) found a negative correlation between punishment rates and tax evasion, indicating that harsh punishment discourages tax evasion, indicating high compliance. Higher penalty rates can undoubtedly encourage people to cheat, according to Virmani's (1989) findings, which showed a positive correlation between punishment rates and tax evasion. Regarding whether enforcing tax fines and implementing tax default consequences improve tax compliance, these research studies seem conflicting and ambiguous. The researcher urges additional empirical research.

Summary of findings

In summary, the study aimed to investigate how tax audits, firms' awareness and knowledge of tax penalties, and the application of tax penalties affect tax compliance. The study's first goal was to investigate how tax audits affect tax compliance. Data estimate results indicate a direct correlation between tax audits and tax compliance. With a significant value of 0.001, the tax audit coefficient was 1.35, making it significant at one percent (1%). This suggests that the impact of tax audits on tax compliance is statistically significant and not the result of random variation.

The evaluation of the impact of businesses' awareness and understanding of tax penalties on tax compliance was the second research goal. According to data collected from field respondents and calculated using a logit regression model, enterprises' capacity to adhere to tax laws is positively impacted by their level of knowledge about tax penalties. The influence of firms' knowledge and awareness of tax penalties on tax compliance is significant at the five percent (5%) level, according to the calculated coefficient of firms' knowledge and awareness, which was 0.44 with a p-value of 0.016.

Determining the impact of tax penalty enforcement on tax compliance was the study's final goal. Data-driven empirical evidence suggests a strong positive correlation between tax compliance and enforcement. The estimated coefficient of enforcement of tax penalties was 0.76, with a p-value of 0.023, which is significant at a five percent (5%) level.

CONCLUSION

Based on data estimation results, the study concludes that there is a substantial positive correlation between tax compliance and the likelihood of an audit, the firm's knowledge and awareness of tax penalties, and the enforcement of tax penalties.

These findings have the following implications: the degree of tax compliance among the taxpaying public is a critical factor in the GRA's ability to meet its annual tax revenue targets. This, in turn, depends on the need for strict enforcement and implementation of tax laws and all associated penalties, diligent efforts by tax officers to ensure improved compliance, and tax officers abstaining from malpractices like condoning and conspiring with taxpayers to underpay taxes.

Even though the study makes enormous contributions to tax audits in the Ghanaian sector, its generalizability is questionable, as the study sample was limited to 50 participants within the Kumasi Metropolis, which is in only one region out of the sixteen regions in Ghana. This was a result of the cost of transportation to access the individual respondents and the busy schedules of the respondents. Future studies could expand the reach in terms of population sample and the number of regions to be covered.

Recommendations

Based on the outcome of the study, the following recommendations are suggested for practice.

1. According to the study, tax audits significantly improve tax compliance. The author recommends strengthening tax assessment processes and regularly conducting tax audits of businesses in a cordial, open, and amicable environment free from animosity. Policies for tax auditing must be streamlined to be carried out quickly.
2. According to the study, tax compliance and awareness of tax penalties are positively correlated. Tax authorities must educate the public about the current tax laws and their enforcement. In this

instance, the Ghana Revenue Authority and all of its affiliated organizations need to have sufficient funding in order to conduct tax penalty education.

3. The study found a strong correlation between tax compliance and the imposition of tax fines. It is advised that tax-related fines be strictly enforced at all times. Deterring current and potential tax evaders will be greatly aided by this. In this sense, tax authorities and associated staff may benefit from enough resources.

Suggestions for further Research

According to Eisenhardt and Graebner, case studies highlight the actual context in which the phenomena under study occur rather than separating the phenomena from it. As a result, case studies can offer detailed and comprehensive explanations of the phenomena under study. But because of this, case study conclusions are frequently criticized for not being able to be applied outside of the specific case environment. As a result, the same study ought to be repeated with more extensive data from various geographical locations and industrial contexts.

Additionally, the study had longitudinal limitations. A longitudinal study to assess stability or other aspects of research findings was not feasible due to the comparatively short time frame in which this investigation was carried out. The results of the study might not be relevant in the future due to the potential for cohort effects to emerge. In other words, the variables used in this study may have different effects on tax compliance over time, and these changes may not align with the study's conclusions. Therefore, to assess stability or other aspects of research findings, long-term studies may be conducted in the future, employing the same samples utilized in this study.

Furthermore, the relationships between the variables used in this study can be examined using alternative models. As Wittingham et al. (2006) correctly point out, drawing conclusions or inferences from a single model might be deceptive; for this reason, many models, like ordinary least squares (OLS), may be used to test field data.

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