



ESG Performance and Audit Fees: A Case of SET 100 Thailand

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Abstract

At present, the concept of Environmental, Social, and Governance (ESG) has been increasingly adopted as a strategic approach to management, aiming for sustainable growth. This approach influences the audit process and the auditor's opinion on financial statements, as well as impact audit fee determination. This study investigates the relationship between ESG performance and audit fees among companies listed in the SET100 index of the Stock Exchange of Thailand. Both overall and all dimensions (environmental, social, and governance) were measured using data from the LSEG database. The sample includes 380 firm-year observations over five years from 2019 to 2023.

The analysis employed multiple regression models with fixed effects, using STATA statistical software. The results reveal a statistically significant positive relationship between overall ESG performance and audit fees at the 0.01 level of significance. The analysis also found a positive association between the environmental and social dimensions, significant at the 0.05 level. Additionally, as control variables, firms' size and complexity were found to be positively associated with audit fees at the 0.05 significance level. In summary, the findings suggest that ESG performance influences audit scope, resulting in higher audit fees.

Keywords: 1) Audit fee 2) ESG performance 3) SET100 4) Fixed effect models

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Introduction

Nowadays, corporate operations related to environmental, social, and governance (ESG) responsibilities have gained significant attention from various stakeholders, including shareholders, investors, financial institutions, and regulatory agencies. ESG Frameworks such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) provide structured guidelines for companies to disclose their sustainability practices. Saengpao, Jarupathirun and Thongkong (2023, pp. 107-119) explained that the disclosure of ESG performance enables stakeholders to access relevant operational information, thereby supporting the company's primary objective of maximizing the highest possible value of shareholder wealth.

Currently, the Securities and Exchange Commission of Thailand (SEC) requires listed companies to disclose both financial information and operational data aligned with the principles of sustainability in the areas of environmental, social, and corporate governance (ESG) (Terdpaopong, et al., 2024, pp. 1-22). This disclosure must be included in Form 56-1, also known as the One Report. Additionally, the Thai Federation of Accounting Professions (TFAC) has issued two draft financial reporting standards on sustainability disclosures, serving as implementation guidelines for these standards. The first draft, TFRS S1, outlines the general requirements for sustainability-related financial disclosures. The second draft, TFRS S2, focuses on climate-related disclosures. These standards are aligned with IFRS 1 and IFRS 2 issued by the International Sustainability Standards Board (ISSB).

The disclosure of environmental, social, and governance (ESG) performance by listed companies in the Stock Exchange of Thailand, as required by regulatory agencies, can influence the determination of audit fees. Since ESG information extends beyond the scope of traditional financial statement audits, auditors must invest additional time and expertise to verify its accuracy and completeness. Moreover, ESG data often lacks standardized formats, unlike conventional financial statements, and may involve estimations, making it more susceptible to issues of accuracy and reliability. As a result, the audit of ESG disclosures demands greater resources and caution, leading to higher audit fees.

However, from another perspective, corporations adopting sustainability as part of their business strategy could ultimately reduce business risks. Their emphasis on environmental, social, and governance (ESG) factors may lead to improved risk management. For example, it can help mitigate legal or reputational risks associated with neglecting environmental and social issues. When auditors assess risk and recognize that a company has strong risk management practices in place, they may reduce audit fees, accordingly, reflecting the lower level of risk associated with the company.

In recent years, the impact of environmental, social, and governance (ESG) information has become closely linked to the determination of audit fees, as auditors, serving as independent professionals responsible for evaluating the accuracy, completeness, and reliability of financial reports, including ESG disclosures (Nuraini and Amrulloh, 2024, pp. 112-124). This impact has become a matter



of public interest, reflecting the growing importance of ESG considerations in the audit process.

The audit fees often serve as an indicator of audit quality. When set too low relative to the required work, auditors cannot perform their duties in accordance with professional standards (DeAngelo, 1981, pp. 183-199). When auditors receive fees significantly higher than the work performed, such substantial fees may raise concerns about their independence, as financial incentives can influence their objectivity (Mahieux, 2024, pp. 133-169). High-quality audits help build investor confidence, support or challenge stakeholders' decisions, enhance transparency in the business sector, and reduce systemic risks to the overall economy.

This study aims to examine the relationship between ESG performance and audit fees. The sample comprises companies listed in the SET 100 index over five years, from 2019 to 2023. The SET100 index comprises large-cap companies with high market capitalization and liquidity, making them attractive to investors. These companies also tend to have diverse business activities, particularly in areas related to environmental, social, and governance (ESG) factors, and generally provide more extensive disclosures than smaller firms. The researchers believe that focusing on this group allows for a more transparent investigation of the relationship between ESG performance and audit fees. LSEG (formerly Refinitiv Eikon) provides ESG performance data, including overall scores and scores in three dimensions: environmental, social, and governance.

Several studies in Thailand, including those by Suttipun (2021, pp. 26-39), Son-

pukdee (2022, pp. 17-30), and Piphatanakul, Petchchhedchoo and Kumsuprom (2020, pp. 230-244), have examined factors that influence audit fees. However, this study is one of the first to examine the relationship between ESG performance and audit fees of listed companies in the SET 100 in Thailand. The control variables include firm size, firm complexity, firm risk, the number of key audit matters, and non-audit fees.

This study will be beneficial to various stakeholders, including management, auditors, and regulatory agencies. It aims to provide empirical evidence on whether ESG performance impacts audit fees. Moreover, regulators may use the findings as supporting evidence to show the value of sustainable business practices. Auditors may also reference the results when considering ESG performance as a factor in setting audit fees. Ultimately, the authors hope that this study will benefit future researchers in exploring the factors that influence audit fee determinations.

Research Objective

1. To examine the relationship between ESG performance and audit fees of listed companies in the SET100 index on the Stock Exchange of Thailand.

2. To examine the relationship between each dimension of ESG performance (environmental, social, and governance) and audit fees of listed companies in the SET100 index on the Stock Exchange of Thailand.

Theoretical background

Agency theory, as proposed by Jensen and Meckling (1976, pp. 305-360), explains the relationship between shareholders and

managers. However, this relationship often gives rise to conflicts of interest, commonly referred to as agency problems. One key cause is information asymmetry. Managers possess more internal information about the company than shareholders. Signal theory, as described by Spence (1973, pp. 249-268), explains how managers convey information to less-informed investors to establish trust and confidence. Management discloses its corporate social and environmental responsibility to send a positive signal that reflects its commitment to sustainable development, reduces risks, and builds confidence among key stakeholders, including shareholders, regulators, and auditors.

The concept of Environmental, Social, and Governance (ESG) represents a framework for sustainable organizational development, encompassing three key dimensions. The environmental dimension (E) underscores the protection and restoration of the environment, as well as the efficient use of resources. The social dimension (S) focuses on equitable and safe human resource management, as well as the establishment of strong relationships with society and local communities. The final dimension, governance (G), concerns the organization's commitment to sound corporate governance policies, the establishment of a transparent board and management structure, and the safeguarding of stakeholder interests.

Implementers see ESG principles as mechanisms that mitigate agency problems by enhancing stakeholder confidence and reducing information asymmetry between internal and external parties. Furthermore, it promotes transparent management in accordance with

sound corporate governance principles. As a result, auditors may perceive the company as having a lower level of risk, which could lead to a reduction in audit fees.

As ESG activities and reporting increase in scope, auditors face more complex and voluminous information to audit, which influences their fee-setting process. Auditors must consider the complexity, risk level, and volume of information when accepting an engagement and determining the appropriate audit fee, aligning with audit pricing principles (DeAngelo, 1981, pp. 183-199).

Conceptual framework and hypothesis development

Since the Stock Exchange of Thailand has required companies to disclose their ESG performance, auditors must consider the environmental, social, and governance implications that may affect a company's financial statements. These may include risks related to asset impairments or provisions for litigation and regulatory fines. Additionally, auditors may be required to provide further assurance on ESG disclosures presented in the company's sustainability report. Increasing the complexity and scope of audit work, as noted by Carlino (2019, pp. 111-129) and Ketsuriyonk and Boonyusthian (2024, pp. 1-3), results in higher fees.

Zhang, Liu and Wang (2023, pp. 1-20) demonstrated a positive relationship between voluntary ESG disclosure and audit fees, using a sample of A-share listed companies on the Chinese stock exchanges from 2011 to 2020. Their results show that voluntary ESG disclosure has a positive effect on audit fees. They concluded that voluntary ESG disclosure serves as a



signal of the company's commitment to ESG principles. However, it also leads to higher audit fees. Auditors expand the scope of their procedures and assess additional risks associated with ESG information, which increases their overall effort and costs.

In contrast, based on agency theory, high-quality ESG practices can reduce information asymmetry between internal and external parties. They also represent for the organization's responsibility, transparency, and commitment to sustainable growth. Reducing perceived business risk and enhancing the company's credibility in the eyes of auditors can lower audit effort and potentially decrease audit fees.

Hou, Yang and Lv (2022, pp. 595-603) used data from listed companies in China to find that companies with high levels of ESG performance had significantly lower audit fees compared to those with lower ESG performance. Similarly, Zou (2023, pp. 145-151) examined listed companies in China and found a negative relationship between ESG performance and audit fees. The study explained that operational risk and corporate reputation acted as mediating variables, helping to clarify the mechanisms by which ESG performance influences audit fees.

From an auditing perspective, ESG disclosure is closely linked to audit fees. Increased transparency in ESG reporting can reduce information asymmetry and audit risk, resulting in lower audit fees. Conversely, when firms engage in extensive ESG activities, the added scope and complexity of the audit requires greater effort and resources, ultimately

leading to higher audit fees. According to the above literature reviews, we pose the research question: "Does ESG performance have an impact on audit fees?" Figure 1 presents the conceptual framework of the study, along with the following hypotheses:

Research Hypotheses

H1: The overall ESG performance of firms listed on the Stock Exchange of Thailand (SET100 Index) is associated with audit fees.

H2: The environmental (ENV) performance of firms listed on the Stock Exchange of Thailand (SET100 Index) is associated with audit fees.

H3: The social (SOC) performance of firms listed on the Stock Exchange of Thailand (SET100 Index) is associated with audit fees.

H4: The governance (GOV) performance of firms listed on the Stock Exchange of Thailand (SET100 Index) is associated with audit fees.

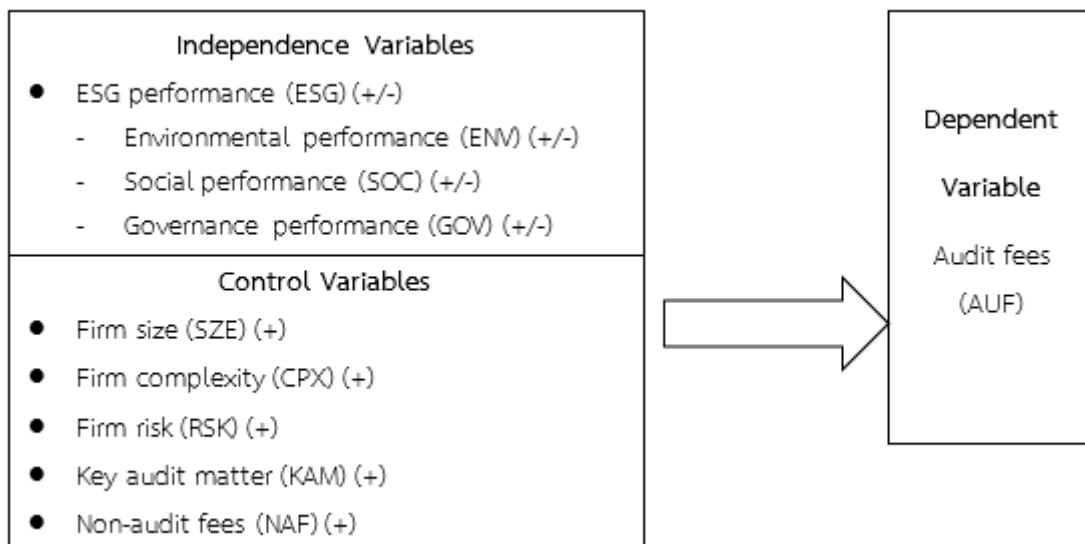


Figure 1 Conceptual Framework of the Study

In this study, we include control variables based on previous research in Thailand. Several studies have shown that firm size and complexity are positively associated with audit fees. Kanthawang, Tangeakchit and Lao-havisudhi (2019, pp. 22-36) and Piphatanakul, Petchchhedchoo and Kumsuprom (2020, pp. 230-244) found that larger and more complex firms tend to incur higher audit fees due to the increased audit effort and the need for greater professional judgment. Additionally, Sonpukdee (2022, pp. 17-30) noted that a firm's audit risk is positively related to audit fees. Moreover, Pornupatham and Thongsuebsang (2024, pp. 4-25) discovered that both the number of key audit matters (KAMs) and non-audit fees have a positive impact on audit fees.

Research Methodology

Data and data collection

For this study, the population consists of companies listed on the SET100 Index. The sample comprises companies in the SET100

Index during either the first or second half of the years 2019 to 2023. The SET100 Index was selected because it includes Thailand's largest and most active companies. These firms usually provide reliable ESG information, use well-known audit firms, and have data that is easy to compare. Studying SET100 makes the results more useful for investors, auditors, and regulators.

To ensure consistency and reliability of the analysis, firms in the financial industry were excluded because their regulatory environment, capital structures, and reporting practices differ significantly from those of non-financial firms. Moreover, firms with fiscal year-ends other than December 31 were excluded to ensure consistency of reporting periods. Using a uniform fiscal year-end enhances comparability of financial and ESG data across firms and prevents potential bias arising from differences in accounting periods. In final, only companies with complete data for all variables are selected, resulting in a total of 380 firm-



year observations, as in Table 1.

Audit fees and non-audit fees, as well as data on firm complexity, were collected from Form 56-1 (One Report) and annual reports. Information on key audit matters (KAMs) was obtained from disclosures in auditors' reports. Data related to company size, business risk, and ESG performance were retrieved from the LSEG database (formerly Refinitiv Eikon). ESG scores provided by LSEG ranging from 0 to

100 and are assessed across three main dimensions: Environmental, Social, as well as Governance. The Environmental dimension consists of three categories: resource use, emissions, and innovation. The Social dimension includes four categories: workforce, human rights, community, and product responsibility. The Governance dimension comprises three categories: management, shareholders, and CSR strategy.

Table 1 Number of sample companies used in the study (2019-2023)

Year	2019	2020	2021	2022	2023	Total
Number of SET100 Companies:						
First half (Jan 1 - Jun 30)	100	100	100	100	100	500
Second half (Jul 1 - Dec 31)	100	100	100	100	100	500
Less: Duplicated companies (96 in each period)	(92)	(89)	(96)	(90)	(463)	
Subtotal: Unique SET100 companies	104	108	111	104	110	537
Less: Companies in financial sector	(15)	(17)	(19)	(19)	(83)	
Less: Companies not December 31 fiscal year-end	(4)	(4)	(4)	(4)	(16)	
Less: Companies without ESG Score	(13)	(9)	(10)	(9)	(13)	(54)
Final number of sample companies	74	80	80	72	74	380

Models:

Fixed effect Model 1:

$$AUF_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 SZE_{it} + \beta_3 CPX_{it} + \beta_4 RSK_{it} + \beta_5 KAM_{it} + \beta_6 NA_{Fit} + \alpha_i + \delta_t + \varepsilon_{it}$$

Fixed effect Model 2:

$$AUF_{it} = \beta_0 + \beta_1 ENV_{it} + \beta_2 SZE_{it} + \beta_3 CPX_{it} + \beta_4 RS_{it} + \beta_5 KAM_{it} + \beta_6 NAF_{it} + \alpha_i + \delta_t + \varepsilon_{it}$$

Fixed effect Model 3:

$$AUF_{it} = \beta_0 + \beta_1 SOC_{it} + \beta_2 SZE_{it} + \beta_3 CPX_{it} + \beta_4 RSK_{it} + \beta_5 KAM_{it} + \beta_6 NA_{Fit} + \alpha_i + \delta_t + \varepsilon_{it}$$

Fixed effect Model 4:

$$AUF_{it} = \beta_0 + \beta_1 GOV_{it} + \beta_2 SZE_{it} + \beta_3 CPX_{it} + \beta_4 RSK_{it} + \beta_5 KAM_{it} + \beta_6 NA_{Fit} + \alpha_i + \delta_t + \varepsilon_{it}$$

Where:

AUF_{it} = Audit fees of firm i in year t , measured as the natural logarithm of audit fees

ESG_{it} = Overall ESG performance of firm i in year t , measured by the LSEG ESG score (ranging from 0 to 100)

ENV_{it} = Environmental performance of firm i in year t , measured by the LSEG score (ranging from 0 to 100)

SOC_{it} = Social performance of firm i in year t , measured by the LSEG score (ranging from 0 to 100)

GOV_{it} = Governance performance of firm i in year t , measured by the LSEG score (ranging from 0 to 100)

SZE_{it} = Size of firm i in year t , measured by total assets (in billion baht)

CPX_{it} = Firm complexity of firm i in year t , measured as the natural logarithm of the number of subsidiaries, associates, and joint ventures

RSK_{it} = Financial risk of firm i in year t , measured as the natural logarithm of the debt-to-equity ratio

KAM_{it} = Number of Key audit matters of firm i in year t , measured by the number of KAMs disclosed in the auditor's Report

NAF_{it} = Non-audit fees of firm i in year t , measured as the natural logarithm of non-audit service fees

α_i = Firm-specific fixed effects

δ_t = Year-specific fixed effects

ε_{it} = Error term

Method

This study employed both descriptive and inferential statistics. Primarily, this study employed multiple regression models with fixed effects using STATA statistical software. Notably, the fixed effect models allow for controlling unobserved heterogeneity related to firm-specific and industry-specific characteristics that may change over time. Also, the au-

thors confirm the appropriateness of the fixed effects model over the random effects model by conducting a Hausman test.

To ensure the accuracy and validity of the analysis before hypothesis testing, we conducted assumption tests, which are crucial for ensuring the accuracy and validity of the analysis. The results indicated that the preliminary assumptions were satisfied, including linearity, normality, and the absence of multicollinearity in each model. However, there were problems with autocorrelation and heteroskedasticity. To address these issues, we employed cluster-robust standard errors, which allow for clustering of residuals at the unit level, in accordance with recommendation of Wooldridge's (2016, pp. 232-237). This approach enhances the accuracy and credibility of the estimated coefficients, ensuring that the statistical inferences drawn from the analysis are both valid and reliable.

Results

This study began with an analysis of the overall data using descriptive statistics, followed by a correlation analysis to examine the relationships between pairs of variables. Finally, the researchers will adopt multiple regression analyses with fixed effects models to test all hypotheses.

Table 2 Descriptive statistics (N= 380 firm year-observations)

Variable	Unit	Mean	SD	Min	Max
AUF	Natural logarithm of audit fees	3.9466	0.4618	3.3937	5.5285
ESG	ESG performance score (0-100)	55.5036	18.1765	3.0303	91.5537
ENV	Environmental performance score (0-100)	50.9556	24.9860	0.0000	97.1526



Variable	Unit	Mean	SD	Min	Max
SOC	Social performance score (0-100)	61.7209	20.9983	4.9317	98.0330
GOV	Governance performance score (0-100)	51.9345	20.7057	24.341	95.7500
SZE	Total assets (in trillion baht)	0.1789	0.3842	0.034	3.4605
CPX	Natural logarithm of the number of companies in the group	1.3436	0.4953	0.0000	2.5599
RSK	Natural logarithm of debt-to-equity ratio	0.2584	0.1662	0.0000	1.0746
KAM	Number of key audit matters	1.7815	0.8005	0.0000	4.0000
NAF	Natural logarithm of non-audit fees	1.8558	1.7444	0.0000	52,174

Table 2 indicates that the natural logarithm of audit fees has a mean of 3.95 and a standard deviation of 0.46. The minimum and maximum values are 3.09 and 5.53, respectively. In addition, the off-table information reveals that the average audit fee of companies listed in the SET100 index during 2019 to 2023 was 19.40 million baht, with the lowest and highest audit fees being 1.24 million baht and 337.69 million baht, respectively. There is substantial variation in audit fees among the companies sampled, especially within the Resources industry group, which includes both the company with the lowest and the company with the highest audit fees.

The overall ESG score has a mean of 55.51 out of 100, indicating that, on average, companies listed in the SET100 index exhibit a moderate level of ESG performance. When examining each dimension in detail, the social dimension has the highest average score at 61.72, followed by the governance dimension at 51.93 and the environmental dimension at 50.96. These results suggest that, on average, SET100 companies place greater emphasis on the social aspect of ESG performance compared to the other two dimensions.

The relatively high standard deviations of the ESG, ENV, SOC, and GOV scores indicate substantial variation in sustainability performance across firms. This dispersion suggests that auditors encounter clients with differing levels of transparency, risk, and reporting complexity, which may in turn shape the level of audit effort required and ultimately influence audit fees.

According to off-table data, the companies in the Consumer Products sector have the highest average overall ESG score, at 79.24, while those in the Services sector have the lowest, at 51.36. For the Environmental dimension, the Industrial Products sector has the highest average score of 75.79, whereas the Technology sector records the lowest average at 36.32.

Regarding the Social dimension, the Consumer Products sector again ranks highest, with an average score of 78.06, while the Technology sector has the lowest at 57.16. Lastly, in the Governance dimension, the Consumer Products sector maintains the highest average score at 83.81, whereas the Services sector has the lowest at 45.42.

The average firm size is 178.93 billion baht, with the smallest firm at 3.41 billion baht and the largest at 3,460.46 billion baht, indicating a wide dispersion in firm size within

the sample. Firm complexity, measured by the natural logarithm of the number of companies within a business group, has an average value of 1.34.

Table 3 Pearson correlation matrix

	AUF	ESG	ENV	SOC	GOV	SZE	CPX	RSK	KAM	NAF
AUF	1.000									
ESG	0.381***	1.000								
ENV	0.413***	0.891***	1.000							
SOC	0.371***	0.897***	0.807***	1.000						
GOV	0.081***	0.606***	0.297***	0.304***	1.000					
SZE	0.585***	0.334***	0.365***	0.354***	0.013	1.000				
CPX	0.436***	0.286***	0.294***	0.279***	0.124**	0.210***	1.000			
RSK	0.240***	0.040***	0.904*	0.17	0.019	0.100*	0.295***	1.000**		
KAM	0.168***	1.115**	0.106**	0.0125***	0.120	0.053	0.2644***	0.131	1.000	
NAF	0.465***	0.276***	0.313***	0.0293****	0.014	0.380***	0.303***	-0.010	0.139	1.000

Off-table results further indicate that companies in the SET100 index have an average of 38.87 related companies, with the maximum being 362 related companies. This result suggests that most firms have complex organizational structures, which may influence audit fees.

Furthermore, firm risk, measured by the natural logarithm of the debt-to-equity ratio, has an average value of 0.25. Off-table data indicate that the average debt-to-equity ratio is 0.97, with a maximum value of 10.87.

This suggests that, on average, firms have nearly equal proportions of debt and equity in their capital structure. However, the high maximum value indicates that some firms rely heavily on debt financing, potentially exposing them to higher financial risk. Such a wide range implies significant variation in capital structure

strategies among the firms in the sample.

The number of key audit matters (KAMs) disclosed in the audit reports averages 1.78, with a maximum of 4 matters. Lastly, the natural logarithm of non-audit fees has a mean value of 1.86. Off-table figures indicate that the average non-audit fees amount to 5.59 million baht, with a maximum of 165 million baht, reflecting the varied extent of additional services provided to different companies.

Table 3 shows the Pearson correlation coefficients between the two variables. The pairs of variables, including ESG and ENV, ESG and SOC, as well as ENV and SOC, exhibited correlation coefficients exceeding +0.80. Since these variables were not included in the same multiple regression model, high correlations did not affect the accuracy of the regression estimates during hypothesis testing. Moreover,



none of the independent variables included in the same multiple regression model exhibited a correlation coefficient exceeding ± 0.80 . This

result suggests that multicollinearity does not pose a problem, as noted by Adeboye, Fagoyinbo and Olatayo (2014, pp. 16-20).

Table 4 Regression Analysis

Models	Model 1 (ESG overall)	Model 2 (ENV dimension)	Model 3 (SOC dimension)	Model 4 (GOV dimension)
Variables	Coefficient (Cluster Std. Err.) [t-TEST]	Coefficient (Cluster Std. Err.) [t-TEST]	Coefficient (Cluster Std. Err.) [t-TEST]	Coefficient (Cluster Std. Err.) [t-TEST]
ESG	.0047 (.0017) [2.66] ***	—	—	—
ENV	—	.0031 (.0013) [2.30] **	—	—
SOC	—	—	.0039 (.0015) [2.64] **	—
GOV	—	—	—	.0003 (.0007) [0.53]
SZE	.2951 (.1249) [2.36] **	.3099 (.1393) [2.23] **	.2960 (.0015) [2.37] **	.1943 (.1153) [1.69] *
CPX	.0964 (.0385) [2.50] **	.0849 (.0393) [2.16] **	.0914 (.0394) [2.32] **	.0944 (.0423) [2.23] **
RSK	.1159 (.1055) [1.10]	.0877 (.1014) [0.87]	.1347 (.1119) [1.20]	.0862 (.1071) [0.80]
KAM	-.0055 (.0183) [-0.30]	-.0101 (.0188) [-0.54]	-.0068 (.0187) [-0.36]	-.0062 (.0195) [-0.32]
NAF	.0037 (.0118) [0.31]	.0002 (.0124) [.02]	.0026 (.0128) [0.21]	-.0005 (.01381) [-0.04]
Constant	3.503 (.1030) [34.00] ***	3.6463 (.0699) [52.18] ***	3.5374 (.0506) [38.49] ***	3.7528 (.0798) [47.02] ***
Year Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R ² (Within)	0.0915	0.0885	0.0887	0.0497
Adjusted R ² (Overall)	0.4522	0.4541	0.4459	0.4456
F-test	10.12***	9.34***	11.60	9.10***

Note : p < 0.10 (*), p < 0.05 (**), p < 0.01 (***)

Table 4 presents the regression results used to assess Hypotheses 1 to 4. Beginning with Model 1 (Column 2), the Adjusted R² (Overall) is 0.4522, indicating that the model incorporating ESG performance can explain 45.22% of the variation in audit fees across firms. The Adjusted R² (Within) is 0.0915, suggesting that ESG performance accounts for 9.15% of the variation in audit fees within individual firms over time.

Additionally, the findings support the acceptance of Hypothesis 1, as the coefficient of overall ESG performance is 0.0047 and statistically significant at the 0.01 level. This result indicates a positive relationship between ESG performance and audit fees. In sum, firms with higher ESG performance had higher audit fees than those with lower ESG performance.

According to Model 2 (ENV dimension) in Column 3 and Model 3 (SOC dimension) in Column 4, the Adjusted R² (Overall) values are 0.4541 and 0.4459, respectively. These results indicate that the models incorporating the environmental and social dimensions of ESG explain approximately 45.41% and 44.59% of the total variation in audit fees across firms. In terms of within-firm explanatory power, the Adjusted R² (Within) values are 0.0885 for the environmental model and 0.0887 for the social model, suggesting that changes in these ESG dimensions over time explain around 8.85% and 8.87% of the variation in audit fees within firms, respectively.

The coefficients of the ENV and SOC variables in Model 2 and Model 3 are 0.0031 and 0.0039, respectively. Both coefficients are statistically significant at the 0.05 level,

thereby supporting Hypotheses 2 and 3. These results also suggest that higher environmental and social performance are associated with increased audit fees, potentially due to greater audit complexity or perceived risk. However, in Model 4 (Column 5), the governance dimension does not exhibit a statistically significant relationship with audit fees. Consequently, Hypothesis 4 is not supported by empirical evidence.

Regarding the control variables, firm size and firm complexity exhibit positively significant associations with audit fees across all models. In contrast, firm risk, key audit matters, and non-audit fees do not show any statistically significant relationship with audit fees in any of the tested models.

Conclusion and Discussion

This study aims to examine the impact of Environmental, Social, and Governance (ESG) performance on audit fees among companies listed on the Stock Exchange of Thailand (SET100 Index). The analysis considers ESG performance both in terms of the overall score and its individual dimensions. This study measured ESG performance with ESG scores provided by the London Stock Exchange Group (LSEG), a widely recognized and reputable source for ESG data.

The sample in this study comprises 380 firm-year observations from companies listed on the SET 100 Index over five years, from 2019 to 2023. The analysis employs Fixed Effects regression models to control unobservable firm-specific and industry-specific characteristics that remain constant over time. More-



over, this study applied robust standard errors to mitigate the effects of heteroskedasticity and autocorrelation, ensuring greater precision and robustness in the estimated coefficients.

The results of this study reveal a positive relationship between ESG performance and audit fees. This suggests that while higher ESG engagement reflects firms' commitment to sustainability, it also introduces greater audit complexity. Specifically, the verification of ESG disclosures, the assessment of non-financial risks, and the integration of sustainability information into financial reporting require auditors to undertake more extensive procedures.

From a theoretical perspective, this finding is consistent with Signaling Theory, as ESG disclosure signals credibility to stakeholders but simultaneously increases auditors' verification workload. Agency Theory suggests that ESG activities reduce information asymmetry, however, the added complexity of ESG reporting appears to outweigh these benefits, resulting in higher audit fees.

The findings of this study contrast with several prior studies. For example, Hou, Yang and Lv (2022, pp. 595-603), Zhang, Liu and Wang (2023, pp. 1-20), and Zou (2023, pp. 145-151) reported that higher ESG engagement tends to reduce audit fees by lowering information asymmetry and audit risk. In contrast, the present study suggests that stronger ESG performance may increase audit complexity and the auditor's required effort, thereby leading to higher audit fees.

However, this finding is consistent with Ketsuriyonk and Boonyusthian (2024, pp. 1-3) who explained that auditors are re-

sponsible for expressing opinions on financial statements; they must consider the potential impact of ESG activities on these financial reports. This is a part of the risk assessment in audit planning, which affects the setting of audit fees. Additionally, auditors may need to assure the ESG information presented in the sustainability report. This result could lead to higher audit fees.

With respect to the environmental dimension, the results showed a positive relationship between environmental performance and audit fees. This finding suggests that companies with greater involvement in environmental activities tend to pay higher audit fees. Such companies often have specialized management systems, such as pollution control systems, carbon footprint reporting, and more complex internal control systems. As a result, auditors may need to involve technical experts to assist in evaluating and forming audit opinions. This result increases the cost and scope of the audit, leading to higher audit fees.

Regarding the social dimension, this study finds a positive association with audit fees. This result may be because social performance encompasses various types of information, including labor practices, occupational safety, human rights, and corporate donations. These types of information are more diverse and extensive than traditional financial data. If companies have prominent levels of social engagement, auditors may need to perform more detailed audit procedures, particularly in areas beyond the standard financial review. This result increases the audit effort and, consequently, leads to higher audit fees. This find-

ing is consistent with the study by Zhang, Liu and Wang (2023, pp. 1-20), which found that the voluntary disclosure of ESG information led to higher audit fees in China.

In terms of governance dimension, this study does not find evidence that companies with better governance performance tend to pay higher audit fees. This is because these companies may disclose their governance information in a standardized format. Moreover, companies with strong corporate governance may help reduce audit risk. This could lead to lower audit fees due to reduced perceived risk and audit effort.

Regarding the control variables, the results indicated that larger and more complex companies incur higher audit fees than smaller or less complex ones. This finding is consistent with the results of Kanthawang, Tangeakchit and Laohavisudhi (2019, pp. 11-36) and Piphatanakul, Petchchhedchoo and Kumsuprom (2020, pp. 230-244), who found that auditors of such firms require more time and resources to gather sufficient and appropriate evidence to support their opinions in the audit report. This additional effort results in higher audit fees.

Practical Implications

The findings of this study highlight that ESG is not merely a sustainability issue but also has implications for audit costs and audit quality. Therefore, audit firms and auditors should consider integrating ESG performance into their risk assessment framework during audit planning. Additionally, Auditors should consider ESG performance when determining audit fees.

Since ESG performance reflects a com-

pany's risk profile and influences the level of audit fees, companies and relevant stakeholders must prioritize the development of ESG policies and the improvement of ESG reporting quality. Credible and high-quality ESG disclosures promote transparency and trust among stakeholders and contribute to more efficient audit planning.

By providing reliable and consistent ESG information, companies can help auditors better assess risk, reduce uncertainty, and minimize the additional audit procedures. Over time, these efforts can contribute to lower audit costs, enhance the company's reputation in the capital market, and potentially lead to reduced audit fees.

Furthermore, regulatory authorities overseeing listed companies should promote the development and implementation of a standardized ESG disclosure framework. Establishing such standards would promote consistency and comparability in ESG reporting across firms, thereby enhancing the ability of auditors, investors, and other stakeholders to utilize ESG information for risk assessment effectively and informed decision-making.

Academic Contribution

Moreover, this study contributes to the academic literature by providing empirical evidence on the relationship between ESG performance and audit fees in the context of emerging markets, with a specific focus on Thailand. It extends prior research on the determinants of audit fees by introducing ESG performance as a key explanatory factor. Notably, this paper is among the early studies to explore the significance of ESG from the perspective of audit



pricing. It offers more profound insights into how overall ESG performance and its components, environmental, social, and governance, affect audit fees.

Furthermore, the study employs a fixed effects panel regression model, which controls for unobservable firm-specific characteristics and enhances the robustness of the findings. These contributions help fill a gap in the existing literature and support the ongoing discourse on the economic implications of corporate sustainability practices.

Limitations and Future Research

This study focuses exclusively on listed firms in the SET 100 Index and spans five years. Future research could broaden the scope by including companies listed across the entire Stock Exchange of Thailand, or by conducting comparative analyses with firms listed on the Market for Alternative Investment (MAI).

Future research might extend the study period beyond five years. Such an approach will enable the examination of long-term trends and the stability of the relationship between ESG performance and audit fees. These extensions would provide a more comprehensive and refined understanding across different market segments and time horizons.

Since the descriptive results of this study reveal that companies in the resources industry exhibit a wide variation in audit fees, with firms reporting both the highest and lowest fee levels. Therefore, future studies may consider focusing on specific industry groups, particularly the resources sector, to gain a more targeted understanding of the factors influencing audit pricing within a high-variance

in the industry context. Such industry-specific analyses may uncover unique determinants and offer deeper insights into sector-related audit risk and complexity.

Furthermore, future researchers, who are interested in examining the relationship between ESG performance and audit fees, may consider alternative ESG databases beyond Refinitiv ESG (LSEG), such as Bloomberg ESG. The database facilitates comparative analysis and enhances data reliability.

Moreover, some future studies may incorporate moderate or mediating variables, such as firm size or organizational complexity, to further enhance the understanding of this relationship. These approaches would provide more in-depth insights into the underlying dynamics of this relationship.

There is also limited research on audit fees in Thailand; therefore, future studies should investigate how board characteristics and ownership structures such as the presence of female directors, board interlocks, and ownership concentrations impact audit fees. Examining these factors can deepen understanding of audit fee determinants in emerging markets and enhance knowledge of corporate governance and audit economics.

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