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Testing the audit quality of female audit partners: Empirical findings from Thailand

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JAI Website:**Abstract**

Research aims: The annual increase in the number of female auditors in partner positions has been particularly pronounced in Southeast Asian countries, with Thailand being a notable example. This study, thus, investigates the quality of female audit partners compared to male audit partners in terms of how clients manage earnings.

Design/Methodology/Approach: The researchers hand-collected gender data of audit partners from the audit reports of all listed firms on the Stock Exchange of Thailand and obtained 424 firm-year observations. The researchers applied two models to test the hypotheses, using cross-sectional time-series OLS and logistic regression data analyses. The researchers also performed additional analyses and robustness checks to support the main tests.

Research findings: The study revealed no substantial disparity in the female and male auditors' quality at the partner levels, as measured by accrual earnings management and earnings distribution approaches. The findings indicate that female and male audit partners have similar audit quality in preventing earnings management and earnings benchmark likelihood. The study adds to the existing research in East (Southeast) Asia, showing that female partners in these countries have audit quality that is at least comparable to male partners.

Theoretical contribution/Originality: The researchers extend prior studies on the behavior distinction in audit quality of the auditor gender at the partner level, which is under-researched in Southeast Asia.

Practitioner/Policy implication: The study has important implications for stakeholders and standard-setters to keep strengthening female leadership in the auditing industry and promoting higher gender parity in the growing industry of the future.

Keywords: Accrual Earnings Management (AEM); Audit Partner; Earnings Distribution Approach; Female; Thailand

Introduction

Extant studies at the partner level have been conducted in both North America (Lennox & Wu, 2018; Hao et al., 2022; Lee et al., 2019) and other parts of the world (Carey & Simnett, 2006; Hardies et al., 2014), including emerging markets (Wang et al., 2015; He et al., 2021; Defond et al., 2020; Gul et al., 2017; 2013; Hsieh & Lin, 2016; Chi & Chin, 2011). For example, studies on partner incentives include on economic importance on individual audit partner (Lennox & Wu, 2018), length of client-partner tenure (Carey & Simnett, 2006), and audit partner workload (Gul et al., 2017; 2013).

Other research also documented that auditors' individual attributes, such as educational background, age, gender, experience at the Big N, expertise, political affiliation, position in accounting firms, and partners' ethics, can have a substantial influence on the audit partners' quality (Hao et al., 2022; Lennox & Wu, 2018; Hardies et al., 2020; 2015; Lee et al., 2019; Gul et al., 2013). KPMG recently surveyed 127 FTSE350 audit committee chairs in the UK to assess their perception of audit quality (KPMG, 2020). The survey results indicate that the five most important indicators of audit quality are "the quality of the signing partner, observable challenge and professional skepticism, the ability of the signing partner to interpret and apply complex accounting judgments, the quality and clarity of reporting, and the external inspection results" (p. 3), where the quality of the signing partner is of the utmost importance, with 88% of all answers.

For that reason, this study intends to address the challenge posed by Defond and Zhang (2014) to extend the investigation of audit quality to incorporate one of the attributes of audit partners, i.e., the gender of the engagement partner (p. 304). Their study is still relevant today because the proportion of audit partners in general is still dominated by male audit partners rather than female audit partners (Grant Thornton, 2022). The researchers argue that the global gender disparity issued in the Global Gender Gap (GGG) Report 2022 may become a major issue that may affect the audit quality of the audit partners' gender, specifically in emerging countries (World Economic Forum, 2022). On the other hand, prior gender studies of auditors in financial reporting and auditing have yielded inconclusive results. Empirical studies found that female partners have a higher audit quality than male partners. For example, female partners are linked to fewer abnormal accruals (Li et al., 2017; Ittonen et al., 2013), more going-concern opinions (Hardies et al., 2016), and higher audit fees (Hardies et al., 2015). Compared to her male audit partners, current studies in North America uncovered that female audit partners improved after PCAOB Rule 3211 on disclosure requirements of the audit engagement partners' information went into effect (Hao et al., 2022).

On the other side, studies also indicated that the quality of female audit partners was either lower or at least similar to male audit partners (Yang et al., 2018; Huang et al., 2015; Niskanen et al., 2011; Kung et al. 2019). For example, in a sample of Finnish medium-sized private firms, Niskanen et al. (2011) found that when utilizing absolute earnings management, female auditors allow greater discretionary income reporting than male auditors. Nevertheless, they discovered that female auditors are more conservative when employing separate samples of income increasing and decreasing. Studies in Taiwan unveiled that all joint auditors, whether female or male signing auditor pairs, have equal audit quality (Kung et al., 2019), but other research in the same country indicated female audit partners have lower audit fees, suggesting fee discrimination (Huang et al., 2015). Research conducted in China revealed that there was no notable disparity in the quality of audits performed by male and female auditors when the client's earnings were adjusted upwards (Yang et al., 2018). Nevertheless, when earnings were revised downwards, the expertise of female auditors was found to be lower compared to that of male auditors. Those findings suggest that in high-risk situations, the audit quality results reported by both parties are equivalent, but female auditors perform worse than their male counterparts in low-risk environments.

Recent research conducted on listed companies in Indonesia, a country in Southeast Asia, revealed that the existence of female audit partners has no impact on the quality of accruals (Soepriyanto et al., 2020). Their findings suggest no disparity in accrual quality between female and male audit partners. Studies in Thailand, especially on the quality of individual audit partners, are still general in nature without distinguishing the audit quality of engagement partners between male and female partners (Suttipun, 2021; Kitiwong & Sarapaivanich, 2020; Sanoran, 2020). Suttipun (2021) and Kitiwong and Sarapaivanich (2020), for example, found evidence regarding the application of key audit matters (KAMs) to improve audit quality, while Sanoran (2020) exhibited a positive association between audit partner public-client busyness and cost of debt.

Therefore, this study aims to answer previous studies' suggestions to investigate audit quality at the partner's gender level (Defond & Zhang, 2014). Research on gender studies at the individual partner level is primarily carried out in American and European nations (Lennox & Wu, 2018; Lee et al., 2019; Ittonen et al., 2013; Niskanen et al., 2011; Hardies et al., 2014), while research on audit partner gender is being under-researched in Southeast Asian countries. This study setting in Thailand is thus important for a few reasons. First, Thailand shares identical institutional settings and legal environments with Indonesia, the Philippines, and Vietnam, which are categorized as civil law countries in Southeast Asia with concentrated ownership, weak investor protection, and weak regulatory enforcement (Kitiwong & Sarapaivanich, 2020; Sanoran, 2020; Marchesi, 2000; Leuz et al., 2003). Second, Grant Thornton (2022) reported that across the world, "the proportion of women in senior management increased from 31% to 32% in 2022" (p. 4). While the regional proportion of leadership roles held by women in ASEAN rose from 30% in 2021 to 37% in 2022 and finally to 40% in 2023 (Grant Thornton, 2023), "Thailand has a greater percentage of women in senior leadership positions than both the Asia-Pacific region and the global average. In Thailand's mid-market companies, women hold 32% of senior leadership positions, and 86% of businesses in Thailand have at least one woman in senior management" (Grant Thornton, 2020b, p. 1). Based on these data, the researchers assume that in Thailand, more women are in strategy-related roles, including partner positions (Grant Thornton, 2022; 2023; 2020a, 2020b). On the other hand, other research argues that Thailand, like other countries in ASEAN, has a highly collectivist culture, and existing socio-cultural aspects strongly influence public perceptions of women in senior management (Kitiwong & Sarapaivanich, 2020; Soepriyanto et al., 2020; Kuhn & Villeval, 2015). The significant research question is whether the increased proportion of women in partner positions is accompanied by higher or at least equal audit quality to their male counterparts, aligned to its gender parity level.

In this study, the researchers hand-collected data on partners' gender from the partners' signatures on audited financial statements from all listed firms on the Stock Exchange of Thailand. As a result, the researchers obtained 166 female and 162 male audit partners from 424 firm-year observations. The researchers used cross-sectional time series OLS and logistic regression data analyses to test the hypotheses. Consistent with this study's early prediction, empirical findings revealed no discernible disparity between male and female audit partners' quality, using accrual earnings management and earnings distribution approach. The findings suggest that the audit quality of both female and male

partner auditing firms is equivalent. The additional analyses also support the primary findings, indicating that female partners from the Big Four and their propensity to issue modified audit opinions exhibit the same level of audit quality as male partners related to accrual earnings management and earnings distribution.

The research results significantly contribute to the following areas: First, the study adds to the body of research on audit quality and psychology by showing that, compared to their male counterparts, female audit partners have an equal effect on the quality of accrual (earnings) in Southeast Asia. Second, this study provides an ideal climate for empirical research in the current era regarding audit quality at the level of partners' gender due to limited data in archival research in Southeast Asia, especially in Thailand. Finally, the findings of this study are vital for standard-setters and stakeholders to keep strengthening the role of women in senior management and leadership in the auditing industry and promoting higher gender parity in the growing industry of the future. The remainder of this paper is organized into sections on related literature and hypotheses development, method, results, discussion, and conclusion.

Literature Review and Hypotheses Development

Audit Environment and Women in Business Leadership in Thailand

In Thailand, professional accountants provide accounting, auditing, and other advisory services as ministerial regulations state. The year 1948 marked the founding of the Accountants Association of Thailand. Later, in 1978, it was called the Institute of Certified Accountants and Auditors of Thailand (ICAAAT) and is currently recognized as the Federation of Accounting Professions (FAP). Initially, most FAP activities produced accounting and auditing standards based on international standards (IFRS and ISA). Act B.E. 2547 (APA) was enacted and went into effect on October 23, 2004 (IFAC, 2022; Narongdej, 2007). According to the 2004 APA, the FAP regulates the accounting profession under the direction of the Accounting Professions Regulatory Commission (APRC). Currently, there are 57,467 FAPs (World Bank, 2014). The Securities and Exchange Commission (SEC) is directly responsible for supervising auditors and entities under SEC supervision and regulates and monitors auditors and their performance under the SEC Act B.E. 2535 of 1992.

Regarding the role of women in senior management and leadership, the Global Gender Gap (GGG) Report 2022 revealed that there was a gender parity index of 0.681 (imparity = 0, parity = 1). Specifically, Thailand had a gender parity index of 0.709, higher than the global gender parity index (World Economic Forum, 2022). The same report also stated that women's leadership share has increased over time; 33.3% in 2016 increased to 36.9% in 2022 (World Economic Forum, 2022). Furthermore, according to a report issued by Grant Thornton (2022), the proportion of women in senior management around the globe is rising from 31% to 32% today, with "ASEAN being the second highest performer with 37% of the region's leaders being female" (p. 7). The same report in 2020 showed that

"86% of businesses in Thailand have at least one woman in senior management" (Grant Thornton, 2020b).

Behavior Distinction Between Auditor Genders

The psychological literature on auditor gender has posited that there are behavioral distinctions between males and females. Men and women demonstrate disparities in willingness to take risks, sense of accountability, and level of work engagement (Levin et al., 1988; Byrnes et al., 1999; Schmitt et al., 2008). More specifically, differences between males and females in behavior may influence audit quality in problem-solving, risk profile, and independence (Hardies et al., 2011). Furthermore, these personal auditor traits based on sex results may ultimately impact audit quality in sex-differentiated audit judgment and decision-making (Gold et al., 2009). For example, previous judgment and decision-making research has generally found that women are more risk-averse than men (Gold et al., 2009; Hardies et al., 2011; Byrnes et al., 1999).

Behavioral studies have also indicated that females are more attentive, law-abiding, and conservative than males (Meyers-Levy, 1986). In addition, females are more empathetic when communicating with clients and understanding their expectations, which can lead to better customer partnerships. Although female auditors are more intelligent and risk-averse than their male counterparts (Ittonen et al., 2013; Hardies et al., 2014; 2011; Walter, 2012; Jamil, 2014), a high level of empathy makes them more susceptible to being persuaded by their male clients and more willing to compromise (Jamil, 2014; Walter, 2012; Gold et al., 2009). Distinctive characteristics of males and females can also be distinguished by their attributes as auditors in their social behavior, such as their methods of communication, self-expression, and client relationship building (Del Giudice, 2015).

Audit Quality, Partner Gender, and Accrual Earnings Management

Audit quality is the probability of discovering and reporting a material misstatement (DeAngelo, 1981). In general, empirical research indicates that audit quality represented by the Big N and industry specialization negatively affects accrual earnings management (hereafter AEM) (Gul et al., 2009; Balsam et al., 2003; Becker et al., 1998), suggesting that enhanced audit quality can reduce the probability of engaging in earnings management practices. The audit process involves making important decisions to identify and report a material misstatement. The audit quality is closely tied to the capability to make sound judgments during the audit. This ability depends on the auditor's traits, including the partner's gender, who leads the audit team (Hardies et al., 2020; 2015; 2011; Defond & Zhang, 2014).

However, many empirical studies have conflicting results regarding the connection between auditor gender and their expertise in auditing. Prior research has indicated that females exhibit more expertise in the field of auditing due to their ability to identify cases of financial misstatements. They are also associated with higher audit fees and a higher tendency to issue going-concern opinions (Lee et al., 2019; Li et al., 2017; Hardies et al., 2014; 2015; Ittonen et al., 2013; Niskanen et al., 2013). Ittonen et al. (2013) and Niskanen

et al. (2011) indicated that female auditors have the ability to place limitations on AEM practices. Furthermore, female auditors consistently demand higher audit fees, suggesting that their audit quality surpasses those of male auditors (Lee et al., 2019). Research in behavioral science has argued that female auditors are more risk averse than male auditors, allowing female auditors to detect and report material misstatements in a higher number than male partners (Gold et al., 2009; Hardies et al., 2011). Therefore, female auditors exhibit more expertise compared to male auditors, while male auditors demonstrate greater meticulousness in the examination of financial statement irregularities (Hardies et al., 2014). The presence of a female audit partner is linked to higher accrual (earnings) quality, indicating a favorable connection between these two factors.

On the other hand, other studies found that female auditors' audit quality falls short of male auditors. For instance, Yang et al. (2018) and Niskanen et al. (2011) found that female auditors allow more discretion on income reporting in lower-risk audits but are more conservative in higher-risk audits. In contrast with the risk profile, female auditors are less confident when reporting a material misstatement (Hardies et al., 2011) and might, therefore, identify themselves more with their clients than male auditors. Furthermore, male clients have a significant influence over female auditors, leading them to alter their audit findings (Yang et al., 2018; Ye et al., 2010; Gold et al., 2009), and therefore, female auditors might report fewer material misstatements. These arguments align with psychological theory, which suggests that women possess a higher aptitude for empathy, allowing them to negotiate and find common ground with their clients effectively (Walter, 2012; Jamil, 2014).

The researchers argue that differences in the above results of the studies are affected by the regional classifications based on the global gender parity index (World Economic Forum, 2022; 2020), for example, except for Niskanen et al. (2011), studies in Europe, such as in Finland and Sweden (Ittonen et al., 2013), Belgium (Hardies et al., 2016; 2015), and North America (Lee et al., 2019; Hao et al., 2022) with a higher gender parity index show that those female audit partners have higher audit quality than male audit partners. In comparison, in East Asia and the Pacific with lower gender parity index, studies show mixed results, such as in China (Yang et al., 2018; Li et al., 2017; Wang et al., 2015), Taiwan (Kung et al., 2019; Huang et al., 2015), and Indonesia (Soepriyanto et al., 2020). With a relatively high gender parity index and an increasing proportion of women in senior management in Thailand, the researchers predict that female partners might have similar audit quality to male ones.

Therefore, the researchers constructed the hypothesis statement H_1 , accompanied by a null hypothesis, in the following manner:

H₁: Female audit partners are not associated with accrual earnings management (AEM) compared to male audit partners.

Audit Partner Gender and Earnings Benchmarks

The "earnings distribution" approach developed by Hayn (1995) and Burgstahler and Dichev (1997) is the theory that might explain the likelihood of earnings manipulation concerning earnings benchmarks. Earnings management is detected if the distribution of all firms' earnings diverges from a normal distribution (Beyer et al., 2018; Jacob & Jorgensen, 2007). Therefore, these studies utilize the earnings distribution approach to reveal that earnings management occurs around the earnings benchmark via the kink of the distribution function.

In accordance with hypothesis H₁, the researchers posited that female auditors at the partner levels are not correlated to a greater (or lesser) probability of achieving earnings benchmarks compared to male audit partners. Therefore, the researchers constructed the hypothesis statement H₂, accompanied by a null hypothesis, in the following manner:

H₂: Female audit partners are not associated with the probability of achieving the earnings benchmarks than male audit partners.

Research Method

Sample Selection

The population of this study comprised all listed firms on the Stock Exchange of Thailand (SET). The researchers selected the sample from 2016–2019 using a purposive sampling method. The total number of firms from the years 2016 to 2019 on the Thailand Stock Exchange based on the sources of SET and Standard & Poor Capital IQ was 134. Then, the researchers deducted it from the delisted firms (1), state-owned firms (2), firms without audit reports (21), and firms with the Thai language rather than English (4). The researchers finally obtained 106 firms, or 424 firm-year observations, as the final samples.

The researchers manually collected data on engagement partner names from the audited financial statements. Next, to obtain the types of partner gender accurately, the researchers identified the partner names by cross-checking them on the LinkedIn website (<https://www.linkedin.com/>) and images on Google. As a result, the researchers obtained 166 female and 162 male audit partners from 424 firm-year observations. Table 1 details the distribution of audit engagement partners based on the industrial group (Panel A) and yearly data (Panel B). The researchers note that in both panels A and B, the composition of female and male engagement partners was well matched in the observations, either in the industry group or annually, indicating that both gender proportions were almost equal.

Research Empirical Models

Model 1 investigated the effect of female audit partners on discretionary accruals (AbsDacc). The following regression model was used to test H₁:

$$\text{AbsDacc}_{i,t} = \alpha_0 + \beta_1 \text{DumAuditPartner}_{i,t} + \beta_2 \text{DumBig4}_{i,t} + \beta_3 \text{DumMAO}_{i,t} + \beta_4 \text{Lev}_{i,t} + \beta_5 \text{DumAuditPartner}_{i,t} + \beta_6 \text{RetoA}_{i,t} + \beta_7 \text{ChRetoA}_{i,t} + \beta_8 \text{Size}_{i,t} + \beta_9 \text{DumLoss}_{i,t} + \beta_{10} \text{SalesGrw}_{i,t} + \beta_{11} \text{Age}_{i,t} + \beta_{12} \text{Accr}_{i,t} + \beta_j \text{YearFE} + \beta_k \text{IndustryFE} + e_{i,t} \dots (1)$$

The impact of female audit partners on the inclination to achieve earnings targets (Bench), i.e., hypothesis H2, was investigated using logistic regression in Model 2.

$$\text{Bench}(1,0)_{i,t} = \delta_0 + \delta_1 \text{DumAuditPartner}_{i,t} + \delta_2 \text{DumBig4}_{i,t} + \delta_3 \text{DumMAO}_{i,t} + \delta_4 \text{Lev}_{i,t} + \delta_5 \text{DumAuditPartner}_{i,t} + \delta_6 \text{RetoA}_{i,t} + \delta_7 \text{ChRetoA}_{i,t} + \delta_8 \text{Size}_{i,t} + \delta_9 \text{DumLoss}_{i,t} + \delta_{10} \text{SalesGrw}_{i,t} + \delta_{11} \text{Age}_{i,t} + \delta_{12} \text{Accr}_{i,t} + \delta_j \text{YearFE} + \delta_k \text{IndustryFE} + e_{i,t} \dots (2)$$

Table 1 Distribution of Audit Engagement Partners

	Firm-year observations	Number of Audit Engagement Partners		
		Female (%)	Male (%)	Total (%)
<i>Panel A. Per Industry Group</i>				
Industrial	104	38 (52.05)	35 (47.95)	73 (100)
Property and Construction	128	45 (47.87)	49 (52.13)	94 (100)
Resources	60	28 (51.85)	26 (48.15)	54 (100)
Services	132	55 (51.41)	52 (48.59)	107 (100)
Total	424	166 (50.61)	162 (49.39)	328 (100)
<i>Panel B. Per Year</i>				
2019	106	42 (50.60)	41 (49.40)	83 (100)
2018	106	45 (52.32)	41 (47.67)	86 (100)
2017	106	41 (49.40)	42 (50.60)	83 (100)
2016	106	38 (50.00)	38 (50.00)	76 (100)
Total	424	166 (50.61)	162 (49.39)	328 (100)

Notes: The researchers group the industry types of the S&P classification of industries into four types. (i) Industrials, e.g., Electrical Components and Equipment; Light; Electric Lighting and Wiring Equipment; Current-Carrying Wiring Devices; (ii) Property and construction, e.g., Building Products; Plumbing Fixtures and Equipment; Plumbing Pipes; (iii) Resources, e.g., Trading Companies and Distributors; Chemical Distribution; Machinery Distribution; Oil and Gas Machinery and Equipment Distribution; Power Generation Equipment Distribution; and (iv) Service, e.g., Air Freight and Logistics; Services Incidental to Road Transportation of Freight; Freight Packing and Crating.

The researchers follow previous studies on common model audit quality by including control variables in Models 1 and 2 due to their impact on AbsDacc and Bench as dependent variables (see Defond & Zhang, 2014 for more details). Following prior studies (e.g., Hardies et al., 2020; Menon & Williams, 2004; Myers et al., 2003; Becker et al., 1998; Reynolds & Francis, 2000), the researchers included client characteristics, such as risk and size (Size, Lev, SalesGrw, Age, Mtb, RetoA, ChRetoA, DumLoss, Accr), and auditor

characteristics (DumBig4, DumMAO). In Model 2, the researchers included the indicator variables of beating and missing earnings benchmarks (DumBeat and DumJustmiss) to control for earnings benchmarks' likelihood (Bench) (Beyer et al., 2018). Table 2 explains all the definitions of the variables used in Models 1 and 2.

Table 2 Variable Definitions

Variable	Description
AbsDacc	= Discretionary accruals in absolute amount. The researchers adopt the methodology of Greiner et al. (2017), which is based on the modified accrual model proposed by Dechow et al. (1995) and originally developed by Jones (1991). The researchers used the residual value of this accrual model: $Tacc_{i,t}/TA_{i,t-1} = \beta_1 1/TA_{i,t-1} + \beta_2 Gross\ PPE_{i,t}/TA_{i,t-1} + \beta_3 \Delta Rev_{i,t}/TA_{i,t-1} + \beta_4 Roa_{i,t} + e_{i,t}$
Bench (1,0)	= A binary variable designed to achieve the desired level of earnings, assigned to 1 if either the ratio of net income to total assets t-1 or the ratio change in net income to total assets t-1 is between 0.00 and < 0.01 and 0 if others (Beyer et al., 2018)
DumAuditPartner	= A binary variable for auditor gender at the partner level, 1 if the auditor at the partner level is female and 0 if others
DumMAO	= A binary variable for a modified audit opinion (MAO), 1 if the type of audit opinion is modified, except for unmodified opinion, and 0 if others
Lev	= The ratio of debts to total assets
Mtb	= Ratio market to book value of equities
RetoA	= The ratio of net income to total assets
ChRetoA	= Return on assets t – return on assets t-1
Size	= Total assets in natural logarithm
DumLoss	= A binary variable, 1 if the firm experiences net loss in year t, and 0 if others
SalesGrw	= (Sales t – Sales t-1)/Sales t-1
Age	= Total years since the firm listed on the stock exchange
DumBig4	= A binary variable, 1 if the auditor of the firm is a Big Four auditing firm, and 0 if others
DumBeat	= A binary variable designed to beat the desired level of earnings, assigned to 1 if either the ratio of net income to total assets t-1 or the ratio change in net income to total assets t-1 is ≥ 0.01 ; and 0 if others (Beyer et al., 2018)
DumJustmiss	= A binary variable designed to miss the desired level of earnings, assigned to 1 if either the ratio of net income to total assets t-1 or the ratio change in net income to total assets t-1 is < 0.00; and 0 if others (Beyer et al., 2018)
Accr	= Accruals, calculated by net income - cash flows from operations
YearFE	= Year fixed effects
IndustryFE	= Industry fixed effects
e	= errors
i, t	= Company i and year t indicator

Furthermore, to obtain robust results in the panel dataset using OLS (Eq. 1) and logistic regressions (Eq. 2), respectively, the researchers follow the previous researcher's

recommendation to include year and industry fixed effects in each model using YearFE and IndustryFE (Petersen, 2009; Hardies et al., 2020).

Result and Discussion

Descriptive Statistics

Table 3 displays the statistical data for the variables utilized in Models 1 and 2. The variable AbsDacc in Model 1 exhibited a mean, minimum, and maximum of 0.065, 0.001, and 0.486, respectively, with an overall deviation standard of 0.068. This mean of AbsDacc represents that, on average, firms in this study's sample profile engaged in accrual earnings management with a magnitude of 6.50% of their total assets. The Bench variable represented 15.80% of the total observations, indicating the likelihood of meeting the earnings threshold or targets. In Table 3, on the discrete variables panel, the main variable, DumAuditPartner, indicates that female auditors handled 53.30% of the observations, while male auditors handled 46.70% of the observations. This observation is intriguing as it reveals that the quantity of female audit partners slightly surpasses the quantity of male audit partners in this study (refer to Table 1). This suggests that the representation of "women in leadership and senior management positions" is roughly comparable to that of men, which aligns with the findings of Grant Thornton's (2022) report.

In the meantime, the Big Four auditors (DumBig4) accounted for 42.20% of the observation data, while the non-Big Four auditors accounted for the remaining portion. The modified audit opinions (DumMAO) represented 17.70%, while clients with unmodified opinions represented 82.30%. The proportions of the DumBeat and DumJustmiss were 51.90% and 33.50%, respectively. This suggests that the observations were more likely to surpass the earnings threshold (DumBeat), and some fell short of the earnings threshold (DumJustmiss). Further, Table 3 presents the descriptive statistics of the remaining variables.

To save space, the researchers did not provide the correlation matrix for all variables in Models 1 and 2. However, the results (untabulated) revealed that female audit partners were not correlated with AEM (AbsDacc) and earnings benchmarks likelihood (Bench). The correlation results denote an early indication that audit partners' gender, whether female or male audit partners, is not correlated with the earnings management tools. Finally, the researchers note no evidence of multicollinearity, as the coefficients correlation (ρ) were all below 0.80.

Table 3 Descriptive Statistics

Variable	Mean	Median	Std.	Q1	Q3
<i>Continuous variables</i>					
AbsDacc	0.065	0.043	0.068	0.022	0.086
Lev	0.451	0.460	0.215	0.290	0.590
Mtb	1.896	1.385	1.624	0.795	2.500
RetoA	0.012	0.023	0.102	-0.011	0.063
ChRetoA	0.562	-0.278	35.457	-0.947	0.166
Size	11.414	11.191	1.382	10.427	12.030
SalesGrw	0.121	0.054	0.518	-0.092	0.178
Age	11.613	13	4.267	8	15
Accr	-0.016	-0.037	0.245	-0.082	0.023
<i>Discrete variables (1;0)</i>					
	%				
Bench	15.8	-	-	-	-
DumAuditPartner	53.3	-	-	-	-
DumBig4	42.2	-	-	-	-
DumMAO	17.7	-	-	-	-
DumBeat	51.9	-	-	-	-
DumJustmiss	33.5	-	-	-	-
DumLoss	29.7	-	-	-	-

Notes: N= 424. The process of Winsorization was applied to all continuous variables by replacing extreme values with the mean plus or minus two standard deviations. This ensures that the data conforms to a normal distribution within a 95% confidence interval. See all variable definitions in Table 2.

Testing Results of Hypothesis H₁

The findings of the first hypothesis (H₁) testing are presented in Table 4. To address data outliers and account for data dependence, the researchers follow Hardies et al. (2020) to predict coefficient estimations using cluster-robust standard errors. Moreover, the researchers utilized the Stata general-purpose statistical software package for this purpose (White, 1980). The regression analysis revealed that Model 1 had an F-value of 3.41 and a p-value less than 0.001. Additionally, the R² and adjusted-R² values were 12.49% and 8.83%, respectively.

Table 4 presents the main variable, DumAuditPartner. The variable had a negative coefficient ($\beta_1 = -0.111$) and was not significant (t-test = -0.18 and p = 0.858). This test result found no statistical difference between female audit partners and absolute discretionary accruals (AbsDacc). This finding indicates that female audit partners are not associated with higher (lower) audit quality than male ones. The results of this study confirm this research's hypothesis and align with prior findings in the ASEAN, as demonstrated by Soepriyanto et al. (2020). Based on data from Indonesia, they discovered no notable disparity in accrual quality between male and female audit partners.

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Table 4 Testing Results of Hypothesis H₁

	Predicted Sign	Coefficient	t-stat	p-value	Uncentered VIF
Constant	?	-2.128***	-7.58	0.000	
DumAuditPartner	?	-0.111	-0.18	0.858	2.13
DumBig4	-	-0.218**	2.43	0.022	1.80
DumMAO	+	0.111	1.39	0.166	1.50
Lev	+	0.448***	2.70	0.007	1.50
Mtb	-	-0.006	-0.32	0.750	1.17
RetoA	-	0.100	0.29	0.711	1.16
ChRetoA	-	0.007	1.48	0.140	1.10
Size	?	-0.780**	-2.08	0.038	1.07
DumLoss	-	-0.003	-0.34	0.737	1.04
SalesGrw	-	0.048	0.81	0.417	1.04
Age	-	-0.547**	-2.18	0.029	1.03
Accr	+	0.747***	4.13	0.000	1.02
YearFE					Included
IndustryFE					Included
Observations					424
F-test					3.41
p-value					<0.001
R-Squared					0.1249
Adjusted R-squared					0.0883

Notes: ***, ** refer to 1% and 5% significant levels, respectively, with the two-tailed tests. The t-stat was calculated using clustered robust standard errors (Wooldridge, 2002) to overcome heteroscedasticity and serial correlation. Visit Table 2 to find the definitions of the variables.

The study results may have been affected by the regional classification based on the gender parity index. Previous studies have found notable disparities between gender studies conducted in East (Southeast) Asian nations compared to those in North America and European nations. For example, Ittonen et al. (2013) and Niskanen et al. (2011) used data from Finnish and Swedish-listed firms, as well as Finnish medium-sized private firms. Their research revealed differences in the quality of audits when handling AEM, with female auditors exhibiting greater caution and effectiveness in limiting AEM compared to male auditors. Women's representation in leadership roles in Asia remains rare, and societal attitudes toward women's professional pursuits continue to be unequal compared to men (Kuhn & Villeval, 2015).

Although the proportion of women in senior management in ASEAN, including Thailand, is the second highest performer in 2022¹ and become the highest performer in 2023 (Grant Thornton, 2022; 2023), countries in the West, such as America and Europe, demonstrate greater support for females, as evidenced by their higher standards of audit quality (Hardies et al., 2014; 2015; Lee et al., 2019; Ittonen et al., 2013; Niskanen et al., 2011).

¹ As mention in the 2022 report, "Africa continues to represent a success story for female leaders, reaching 40% of overall senior roles, well above the worldwide average... ASEAN is the second highest performer with 37% of the region's leaders being female" (p. 6-7), continued by Latin America (35%) and North America (33%) (Grant Thornton, 2022). In addition, in 2023, "The ASEAN region experienced the biggest percentage points rise among the regions, increasing from 37% to reach the 40% mark" (Grant Thornton, 2023, p. 10).

Testing Results of Hypothesis H₂

Table 5 presents the results of the logistic regression test for H₂. The results unveiled that the Wald Chi-squared of Model 2 was 41.65 and significant at 1% ($p < 0.001$). Model 2 also had a pseudo-R² of 0.1054. The variable the researchers focused on was DumAuditPartner, with a coefficient of $\delta_1 = -0.318$. However, this coefficient was not statistically significant at the 10% level, as indicated by the z-test value of -1.09 and a p-value of 0.276, which was greater than 0.10. These tests found evidence that female engagement partners (DumAuditPartner) are not related to the tendency to meet earnings benchmarks (Bench). The findings align with the previous findings for H₁.

Table 5 Testing Results of Hypothesis H₂

	Predicted Sign	Coefficient	t-stat	p-value
Constant	?	0.670	0.46	0.645
DumAuditPartner	?	-0.318	-1.09	0.276
DumBig4	-	-0.268*	-1.88	0.089
DumMAO	+	0.535	1.43	0.154
DumBeat	?	-1.475***	-4.48	0.000
DumJustmiss	?	-0.797**	-2.28	0.023
Lev	+	0.271**	-2.54	0.011
Mtb	-	-0.219**	-2.00	0.046
RetoA	-	5.856**	2.52	0.012
ChRetoA	-	-0.003	-1.12	0.264
Size	?	-0.047	-0.36	0.721
DumLoss	-	-1.815***	-4.22	0.000
SalesGrw	-	-0.895**	-2.26	0.024
Age	-	-0.020	-0.56	0.572
Accr	-	-0.058	-0.18	0.854
YearFE				Included
IndustryFE				Included
Observations				424
Wald Chi ²				41.65
Prob> Chi ²				<0.001
Pseudo R-squared				0.1054

Notes: ***, **, * refer to 1%, 5%, and 10% significant level, respectively. The z-stat was calculated using clustered robust standard errors (Wooldridge, 2002) to overcome heteroscedasticity and serial correlation. Visit Table 2 to find the definitions of the variables.

The results of this study corroborate the findings of prior studies conducted in the same countries within the region, such as Soepriyanto et al. (2020). The results suggest that the gender parity (disparity) level in the position of audit partners of audit firms in Thailand is similar to the empirical results from Indonesia, as another developing country in the ASEAN region with the same institutional setting, legal environments, and socio-cultural factors (Soepriyanto et al., 2020, p. 311). Nevertheless, this research is different from the studies conducted in American and European nations, as it reveals that female partners exhibit superior audit quality in financial statement audits compared to their male counterparts.

Additional Analyses and Robustness Checks

Further examinations for hypothesis H₁

In order to corroborate the primary results, the researchers conducted further examinations to ascertain the presence of additional information regarding female partners within the Big Four, as well as to determine whether female partners were more likely to deliver modified audit opinions. In Model 1, the researchers introduced two new variables, DumAuditPartner*DumBig4 and DumAuditPartner*DumMAO, to capture the interaction effects. The researchers anticipate that there will be no significant variation in either of these interaction variables.

The additional analysis in Table 6 exhibits that the interaction between DumAuditPartner and DumBig4 had a positive coefficient, but it was not statistically significant ($\phi_2 = -0.038$, $p = 0.763 > 0.10$). The other variable, DumAuditPartner*DumMAO, had a negative coefficient of -0.053 , but it was not statistically significant at the 10% level ($p = 0.752 > 0.10$). These tests did not provide any further facts about the relationship between female audit partners in the Big Four and their tendency to issue more modified opinions, as compared to male audit partners.

Table 6 Additional Analysis of Hypothesis H₁

AbsDac _{i,t}	$\phi_0 + \phi_1 \text{DumAuditPartner}_{i,t} + \phi_2 \text{DumAuditPartner} * \text{DumBig4} +$				
=	$\phi_3 \text{DumAuditPartner} * \text{DumMAO} + \phi_4 \text{DumBig4}_{i,t} + \phi_5 \text{DumMAO}_{i,t} + \phi_6 \text{Lev}_{i,t} + \phi_7$				
	$\text{Mtb}_{i,t} +$				
	$\phi_8 \text{RetoA}_{i,t} + \phi_9 \text{ChRetoA}_{i,t} + \phi_{10} \text{DumLoss}_{i,t} + \phi_{11} \text{Size}_{i,t} + \phi_{12} \text{SalesGrw}_{i,t} + \phi_{13}$				
	$\text{Age}_{i,t} +$				
	$\phi_{14} \text{Accr}_{i,t} + \phi_j \text{YearFE} + \phi_k \text{IndustryFE} + e_{i,t}$				
Independent Variable	Predicted Sign	Coefficient	t-stat	p-value	Uncentered VIF
Constant	?	-2.137***	-7.38	0.000	
DumAuditPartner	?	0.004	0.05	0.959	1.92
DumAuditPartner*DumBig4	?	0.038	0.30	0.763	3.06
DumAuditPartner*DumMAO	?	-0.053	-0.32	0.752	2.91
DumBig4	-	-0.013	0.13	0.894	2.40
DumMAO	+	0.138	1.10	0.274	2.55
<i>Other Control Variables</i>					Included
YearFE					Included
IndustryFE					Included
Observations					424
F-test					6.92
p-value					<0.001
R-Squared					0.1253
Adjusted R-squared					0.0842

Notes: *** refer to the 1% significant level, respectively, with the two-tailed tests. The t-stat was calculated using clustered robust standard errors (Wooldridge, 2002) to overcome heteroscedasticity and serial correlation. Visit Table 2 to find the definitions of the variables.

Secondly, the researchers conducted additional tests by segregating negative-signed discretionary accruals to determine whether managers exhibited a tendency to manipulate earnings to increase income. Several researchers suggest that auditors focus on the overstatement of earnings manipulation (Ashbaugh et al., 2003; Ittonen et al., 2013; Myers et al., 2003). Hence, the researchers utilized observations characterized by positive-signed discretionary accruals (PosDacc) and obtained a sub-sample of 233 firm-year observations.

Table 7 displays further test results obtained from this more limited set of data. It revealed that DumAuditPartner had a positive coefficient, but it was not statistically significant ($\mu_1 = 0.008$, $p = 0.223 > 0.10$).

Table 7 Additional Analysis of Positive Discretionary Accruals

$\text{PosDacc}_{i,t} = \mu_0 + \mu_1 \text{DumAuditPartner}_{i,t} + \mu_2 \text{DumBig4}_{i,t} + \mu_3 \text{DumMAO}_{i,t} + \mu_4 \text{Lev}_{i,t} + \mu_5 \text{Mtb}_{i,t} + \mu_6 \text{RetoA}_{i,t} + \mu_7 \text{ChRetoA}_{i,t} + \mu_8 \text{DumLoss}_{i,t} + \mu_9 \text{Size}_{i,t} + \mu_{10} \text{SalesGrw}_{i,t} + \mu_{11} \text{Age}_{i,t} + \mu_{12} \text{Accr}_{i,t} + \mu_j \text{YearFE} + \mu_k \text{IndustryFE} + e_{i,t}$						
Independent Variable	Predicted Sign	Coefficient	t-stat	p-value	Uncentered VIF	
Constant	?	0.067	1.63	0.104		
DumAuditPartner	?	0.008	1.22	0.223	1.11	
DumBig4	-	-0.012*	-1.73	0.085	1.21	
DumMAO	+	0.020**	2.34	0.020	1.09	
<i>Other Control Variables</i>					Included	
YearFE					Included	
IndustryFE					Included	
Observations					233	
F-test					14.22	
p-value					<0.001	
R-Squared					0.1304	
Adjusted R-squared					0.1012	

Notes: **, * refer to 5% and 10% significant levels, respectively, with the two-tailed tests. The t-stat was calculated using clustered robust standard errors (Wooldridge, 2002) to overcome heteroscedasticity and serial correlation. Visit Table 2 to find the definitions of the variables.

Thus, the researchers can infer that the existence of female partners (DumAuditPartner) did not affect the increasing AEM. The findings also corroborate the primary findings of hypothesis H₁, indicating no substantial disparity in female and male audit partners' quality when considering a subset of increasing AEM.

As a final step, the researchers conducted a further test for H₁ by utilizing signed discretionary accrual (SignDacc) as the dependent variable in the main model. The full sample size for this test was 424 (Ashbaugh et al., 2003; Myers et al., 2003). Once again, the researchers did not find any statistically significant difference (which was not included in the tabulated data) in the impact of the female partner (DumAuditPartner) on signed discretionary accruals. This finding further supports the primary findings.

Further examination of Hypothesis H₂

In Model 2, the researchers conducted further tests by incorporating the interaction variables DumAuditPartner*DumBig4 and DumAuditPartner*DumMAO. These tests aimed to determine if the presence of a female audit partner (DumAuditPartner) in the Big Four had any additional impact on the propensity to issue MAO.

Table 8 displays the test results for the two interaction variables. The results of the further test indicated no substantial disparity in the interaction coefficients of DumAuditPartner*DumBig4 ($\phi_2 = -0.102$, $p = 0.872 > 0.10$) and DumAuditPartner*DumMAO ($\phi_3 = -0.115$, $p = 0.875 > 0.10$). The results indicate that the inclusion of female partners did not provide any additional information on both the Big Four (DumBig4) and the propensity of issuing more MAO (DumMAO) in relation to meeting earnings targets (Bench). Overall, female and male audit partners in the top four auditing firms showed no substantial disparity in their likelihood to issue modified audit opinions.

Table 8 Additional Analysis of Hypothesis H₂

Bench $(1,0)_{i,t} = \phi_0 + \phi_1 \text{DumAuditPartner}_{i,t} + \phi_2 \text{DumAuditPartner} * \text{DumBig4}$ $+ \phi_3 \text{DumAuditPartner} * \text{DumMAO} + \phi_4 \text{DumBig4}_{i,t} + \phi_5 \text{DumMAO}_{i,t}$ $+ \phi_6 \text{DumBeat}_{i,t} + \phi_7 \text{DumJustmiss}_{i,t} + \phi_8 \text{Lev}_{i,t} + \phi_9 \text{Mtb}_{i,t} + \phi_{10} \text{RetoA}_{i,t} + \phi_{11}$ $\text{ChRetoA}_{i,t} + \phi_{12} \text{Size}_{i,t} + \phi_{12} \text{DumLoss}_{i,t} + \phi_{13} \text{SalesGrw}_{i,t} + \phi_{14} \text{Age}_{i,t} + \phi_{15}$ $\text{Accr}_{i,t} + \phi_j \text{YearFE} + \phi_k \text{IndustryFE} + e_{i,t}$				
Independent Variable	PredictedSign	Coefficient	z-test	p-value
Constant	?	0.627	0.42	0.674
DumAuditPartner	?	-0.255	-0.66	0.510
DumAuditPartner*DumBig4	?	-0.102	-0.16	0.872
DumAuditPartner*DumMAO	?	-0.115	-0.16	0.875
DumBig4	-	0.089	0.19	0.232
DumMAO	+	0.600	1.19	0.602
DumBeat	?	-1.476***	-4.47	0.000
DumJustmiss	?	-0.798**	-2.28	0.022
<i>Other Control Variables</i>				Included
YearFE				Included
IndustryFE				Included
Observations				424
Wald Chi ²				56.00
Prob> Chi ²				<0.001
Pseudo R-squared				0.1056

Notes: ***, ** refer to 1% and 5% significant level, respectively. The z-stat was calculated using clustered robust standard errors (Wooldridge, 2002) to overcome heteroscedasticity and serial correlation. Visit Table 2 to find the definitions of the variables.

Conclusion

This study utilized data from listed firms on the Stock Exchange of Thailand (SET) that were audited by 166 female and 162 male audit partners between 2016 and 2019. Based on

this data, the researchers have derived several conclusive results. First, the analysis revealed no substantial disparity between female and male audit engagement partners's quality, measured by the absolute discretionary accruals and the tendency to reach earnings targets. In the subsequent analyses, the researchers have discovered no notable disparity in the audit quality of female engagement partners in the Big Four firms. Additionally, the researchers have found no correlation between the tendency to issue more modified audit opinions and the AEM and meeting the earnings benchmarks.

In summary, the study uncovered that female auditors' quality at the partner levels in Thailand is comparable to that of male auditors, aligning with findings from other developing East (Southeast) Asian nations, like Indonesia. However, the results differ from those of studies in developed countries such as Europe and America, where female audit partners provide higher quality than males. This study suggests that regional classification based on gender parity level could be an underlying factor contributing to the results. The research findings are robust due to sensitivity and robustness checks.

This study has several practical and theoretical implications. First, gender disparity and socio-cultural factors may influence the behavior distinction between the audit quality of female and male audit partners. The results of this study imply that issues of gender equality may still be a fundamental problem in developing countries such as Thailand, Indonesia, and other countries in Southeast Asia. The findings provide a basis for stakeholders and standard-setters to strengthen female leadership in the auditing industry and prepare for higher gender parity in the growing industry.

Second, this study unveiled that an increased proportion of female partners is not automatically accompanied by an increase in audit quality, suggesting that standard-setters and regulators should pay attention to promoting gender parity in the workplace, particularly in the auditing profession.

Given the constraints of this study, the researchers must validate this study's findings. Specifically, this metric only considered absolute discretionary accruals as a way to measure audit quality. The metric also assessed the likelihood of meeting the earnings thresholds through the earnings distribution approach. As such, subsequent investigations should consider other metrics of audit quality and earnings management, such as real activity manipulation and strategic revenue recognition, as an alternative measurement and in relation to the gender diversity partners (Bui, 2024; Cohen & Lys, 2022; Habib et al., 2022), instead of the accrual earnings management and earnings distribution approaches.

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Conflicts of Interest

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