

Auditor Expertise, Complexity of Revenue Recognition, and Audit Quality

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Abstract

This research explores whether auditor expertise affects audit quality and whether the complexity of accounting treatments for revenue recognition in particular industries moderate the effect of auditor expertise on audit quality. Using data from the Thai stock market spanning over 2013 to 2021, the results show that auditor expertise has a significantly negative relationship with discretionary accruals implying that the auditor expertise improves audit work, as predicted. However, the complexity of accounting practices implemented in certain types of industry does not moderate the effect of auditor expertise. Our additional analysis further shows that higher audit fees lead to higher discretionary accruals supporting the notion that premium audit fees signal economic bonding giving bargaining power to engagement clients. This study contributes to this research stream by documenting that if the auditor is specialized and skillful – so-called auditor expertise, more complex transactions or accounting practice does not diminish the auditor specialization and audit performance accordingly. The findings of this study also has an implication for practitioners and regulators by (1) indicating that the specialist auditors can improve audit quality but such specialization does not improve audit performance when auditing clients that operate in a high complexity environment causing high inherent risk (2) signaling that firms that paid premium audit fees to auditors tend to have power of bargaining over auditors.

Keywords: Auditors' Expert, Industry Specialization, Audit Quality, Auditor Expertise

1. INTRODUCTION

This study aims to examine whether auditor expertise strengthens audit quality and whether the complexity in accounting treatments for the revenue recognition moderates the effects of auditor expertise on audit quality. It has been widely discussed that auditors have differential expertise. Numerous evidence documents that industry-specialist auditors are likely to charge higher audit fees (Reichelt & Wang, 2010). Many studies note that audit fees represent premium audit service resulting in audit quality (Francis, Reichelt, & Wang, 2005). However, recently the empirical evidence shows that audit fees do not always capture premium assurance service, rather capture the economic bonding between auditors and engagement clients (Awuye & Aubert, 2022). This motivates us to re-examine research questions regarding auditor expertise and quality of audit services. Another motivation would be the complexity of the business environment posed by the new accounting standards and a number of accounting scandals driving us to closely look into the areas of industry-specialist auditors and audit quality.

In order to pursue the aims of our study, we employed discretionary accruals to proxy for audit quality and use the audit firm's portfolio share to capture auditor expertise; industry level expertise. We calculated discretionary accruals by the Modified Jones Model (1995) and adjusted for the performance based information following Kothari et al. (2005). As for auditor specialization, we estimated the market-share based portfolio following Chi and Chin (2011) and Krishnan (2003). Findings indicate that auditor expertise; industry specialists improves audit quality which supports, as expected. However, this finding is not held when we replace the market-share based portfolio by audit fees. Unexpectedly, we find that higher audit fees lead to higher discretionary accruals supporting the notion that abnormal audit fees represent economic bonding or it can be interpreted as a high

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bargaining power of audit clients (Asthana & Boone, 2012; Gandía & Huguet, 2021). We do not find the evidence on the moderating effect of the complexity but the findings overall point out that specialization does not improve audit work when auditing engagement clients that operate business in a high level of complexity of accounting practice causing high inherent risk.

The current study contributes to the literature, practitioners, and regulators in many ways. First, findings enrich the literature by offering more evidence that audit fees would be an appropriate surrogate for audit quality. Second, we document that auditor (industry) expertise can improve audit quality but such expertise does not improve audit performance when performing audit in a high complexity accounting norms causing high inherent risk. Third, we signal to regulators that premium audit fees paid by corporations are threatening to auditor independence due to the economic bond and subsequently compromise audit quality. We point out to the regulators in the emerging markets that it is very important to explore ways to induce the young professionals and equip them to become the approved auditors, filling the numbers of expertise in the audit industry to deal with complex companies and to improve audit quality in the emerging markets.

The next section summarizes literature review and hypothesis development covering background about competent auditors and Thai listed companies, auditor expertise and audit quality as well as the effects of auditor expertise and audit quality. Section 3 research design. Section 4 analyzes descriptive statistics, the main results, and the robustness checks. Session 5 concludes the current study.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Institutional Background: competent auditors approved by the SEC, Thailand

The numbers of Thai listed companies ranged from 395 companies in 1980 to 829 companies in 2023 (DISFOLD, 2023), with the great strides in harmonization of IFRS in 2014 (;Dezan Shira & Associates, 2015). In the light of the capital value, industrial and real estate sectors are distributed about 31% of total market capitalization followed by Consumer discretionary which represent 15.47% of total market capitalization, while Technology and Communication Services represent about 13%. These top large sectors are regarded as the most complex environment in terms of accounting treatment; specifically revenue recognition (Tutino, Mattei, Paoloni, & Pompili, 2019). Given the number of listed companies growing, the number of auditors approved by the Securities and Exchange Commission of Thailand (hereinafter, SEC) is, however, about 350 persons. Those approved auditors are from 33 different audit firms, mostly from the Big4 firms (SEC Thailand, 2023). In this sense, the increase in a number of companies and the complexity of accounting practices due to the new accounting standards, the competence and specialization of auditors could be of public concern.

Thailand's audit industry is more oligopoly. The ratio of listed companies to registered audit firms is about 25.6 for Thailand which is relatively lower than that for the US and Germany. The lower ratio of listed companies to approved audit firms could lead to the shortage of experienced auditors causing the decrease in the quality of audit work. In line with this situation, the most recent accounting scandals in Thailand; Stark Corporation, reignited the public concern over audit competency as well as damaged investor confidence regarding regulatory enforcements in Thailand (NIKKEI Asia, 2023). A few years ago Stark Corporation seemed to be Thai corporate success before its value downed to Zero in 2023. Star Corporation committed accounting fraud by faking account receivable and sale revenue. The truth was revealed after the special audit was performed. As aforementioned, the public criticized whether this delayed capture of the truth is due to either the overloaded audit work or the shortage of audit expertise in supply. Although the case is not so relevant to the research setting, the situation provides the background why the topic of auditor competency and expertise is important in the Thai market where the ratio of approved audit firms to the growth of listed companies is lower than developed markets.

2.2 What is audit expertise?

Auditor competency is regarded as the auditor capability to provide high audit quality including training, practical skills, and expertise (DeFond, & Zhang, 2014). International Federation of Accountants (hereinafter; IFAC) prescribes that audit professionals be required to have knowledge of financial statement audit, financial accounting and reporting, and information technology. Besides, the Auditing Standards also specify that in order to audit financial statements of audit clients that are classified into particular industries, auditors are required to have experience relevant to those specific environments. In this sense, the Standards encourage auditors to have 'task-specific superior performance' (Marchant, 1990) through the practices; cumulative practical skills.

Recently, International Financial Reporting Standards (hereinafter; IFRSs) poses complexity and challenges to audit professionals driving the need for auditor expertise (Francis & Gunn, 2015). A bundle transaction; selling multiple products in one transaction, is considered to be normal in the Information and Technology sector leading to a challenge to comply with the revenue recognition criteria specified by IFRS 15 Revenue From Contract with Customers. That is, this bundle transaction also creates a challenge to auditors when auditing revenue accounts as well as the financial statements in overall. Another classic example of accounting complexity would be fair value accounting. Glover, Tahylor, and Wu (2017) also contend that when auditors provide assurance services to firms with high level of fair values versus firms with lower level of fair values, auditors need fair value measurement expertise to gain further insights. Given inherent challenges arising from the new accounting practices that are applied extensively in specific sectors, auditor industry expertise is highly required in delivering high quality of audit performance.

Definitions and measurements of industry audit specialization have been applied in a growing number of research. Industry specialization requires deep knowledge of the operating environment of an audit client's industry as well as capability to provide new insights to some of the difficulties that clients face in their operations (Kend, 2008). Expert is also regarded as the amount of direct audit experience (Ashton, 1991) suggesting that expertise can also be obtained through practice to perform well in a task domain (Marchant, 1990). According to these definitions, prior studies have attempted to measure audit expertise in many ways. For instance, auditors are considered to be specialists if they have 20 per cent or more market share in an industry and industry specialization is perceived if audit firms have at least 10 percent of clients' audit fees and total audit fees including the rank of audit fees in an industry (Hogan & Jeter 1999; Casterella, Francis, Lewis & Walder, 2004; Francis, Reichelt & Wang, 2005). Although there are ways in capturing audit industry-specialization, the general conclusion is drawn to the notion that auditors with industry expertise potentially identify misstatements to maintain their reputation and market-share.

To reflect the conclusion that auditors would use their industry-specialization to earn their competitive advantage and market-share accordingly (Dunn, 2004). This study we established the market-share based measurement to capture audit expertise. Also, the current study aims to investigate the moderate effect of the more complexity of revenue recognition on the relationship between audit expertise and audit quality, the industry market share based determination of audit specialization fairly suits the research design.

2.3 What is audit quality?

Audit Quality has been defined in accounting research in multiple ways. For example, Simunic (1980) that "audit quality is determined by both client demand and auditor supply, which depends on the incentives and competencies of the client and auditor". Likewise, DeAngelo, 1981 noted in Watkins, Hillison, and Morecroft (2004), identifies that audit quality is the market-assessed probability of whether financial statements of audit clients contain significant error and whether a false audit opinion is made. Consistently, audit work is valued for its ability to independently verify the credibility of financial accounting information enhancing resources allocation and contracting efficiency (Defound & Zhang, 2014). Given definitions lead us to the conclusion that the auditors' role is to assure financial reporting quality which is consistent with Generally Accepted Auditing Standards that require auditors to evaluate the level of financial reporting quality.

Audit Quality is in demand due to the agency cost. The agency problems arise from the information asymmetry between managers and outside financial statements' users, most notably investors and creditors. That agency theory offers incentives to firm managers to issue financial statements that allow capital providers to monitor their actions and make decisions regarding capital allocation (Jensen and Meckling, 1976; Watts, 1977; Watts and Zimmerman, 1983). In order to provide such verifiable financial statements, firm managements have demand for external auditors; independent third parties, to ensure that the financial statements are fairly reported. From this perspective, it implies that auditors should have a good understanding of how Accounting Standards are reasonably applied to be able to play the role in verifying the quality of financial reports. In this study, we therefore employ the financial reporting quality measurement to reflect the quality of audit work.

2.4 The effects of audit expertise and the moderate effect of the complexity on audit quality

A number of studies show that auditors with industry-specialization are able to use this competence and practical experience to provide more effective audits as evidenced by higher financial information quality. Dunn (2004) reports that firms employed industry - specialists to audit their financial statements provide better quality of financial information disclosure. Using U.S based-data, Lim and Tan (2008) find that earnings-response coefficients are strong when firms hired auditors with industry expertise implying that earning quality is improved

due to quality of audit work delivered by industry-specialists. Consistently, Reichelt and Wang (2010) indicates that U.S firms that employed auditors who are both national and city-specialists are likely to report lower abnormal accruals suggesting that those specialists bring about better audit quality. However, the U.S. based findings point out that there is no evidence of differences in audit quality, proxied by the discretionary accruals, between firms employed specialist and non-specialist auditors (Minutti-Meza, 2013).

Outside the U.S evidence, Liu, Xie, Chang, and Forgione (2017) show that auditors with industry specialization; both industry specialists and portfolio-concentration experts, improve audit quality through enhancing financial report quality of publicly listed firms in Taiwan. Based on Spanish listed companies, Carcia-Blandon and Argiles-Bosch (2018) find no significant effect of industry specialization on audit quality. While using audit report timeliness as a proxy for audit quality, Rusmin and Evans (2017) find that industry-specialists proxying by the Big-4 firms improve audit quality through the reduction of the audit report delay.

Although prior studies advise that the results of the effects of auditor expertise on audit quality can be varied due to selected proxies in research design, there are ways to believe that auditors with industry expertise can provide relatively better audit quality. *First*, auditors with industry specialization presumably have a greater knowledge of special industry accounting treatments and therefore are better able to identify misstatements. *Second*, out of all approved auditors for providing assurance services to listed companies in Thailand, more than 50 per cent are qualified auditors from the Big 4 firms which are regarded as highly standardized protocol for quality control and those auditors can enjoy more resources (Rusmin and Evans (2017; Ramirez, 2012). We then hypothesize that the auditor expertise; industry-level, improves audit quality. Hypothesis 1 is stated as follows.

H1: Auditor expertise is positively associated with audit quality.

The new revenue recognition standard leaves more room for management judgments as it requires entities to assess performance obligations and fair value allocation among obligations when recognition of transactions. For instance, the timing of revenue in the automotive sector may face challenges in defining the contracts and accounting for contract modifications, determining of separable performance obligations within a contract including allocation of value of each obligation (Rutledge, Karim, & Kim, 2016). Likewise, the telecommunication and technology sectors may be subject to a lack of evidence on fair values which may cause overstated or overstated revenue recognition (Kohler, Pochet, & Manh, 2021; Boujelben, & Kobbi-Fakhfakh, 2020). As a result, the earning quality or quality of financial reporting interchangeably could be impaired and the earnings quality will be lowered.

Audit industry - specialists are reported to be helpful in enhancing financial disclosure quality and signaling audit clients' intention to provide financial information quality to groups of financial statements' users (Dunn,2004). Chen (2022), using a sample of U.S. public banks, reports that auditors' banking industry expertise enhances perception of audit quality from investors' perspective. However, Insights from Indonesia Stock Exchange, Butar-Butar, & Indarto (2018) contend auditor industry expertise does not affect financial reporting quality captured by the absolute discretionary accruals. While the growing complexity of the business environment and accounting standards, approved and competent auditors appear to be in short supply in Thailand. We therefore examine the moderating role of complexity accounting practices in particular industries on audit industry expertise and quality of audit performance. We assume that firms that are classified in complex environment sectors will have higher discretionary accruals, however the level of discretionary accruals will be reduced if those firms employed audit industry specialists to audit their financial statements. hypothesis 2 is as the following statement.

H2: The association between auditor expertise and audit is more pronounced when firms are listed in the sectors that involved with complexity of accounting treatments for revenue recognition.

3. RESEARCH DESIGN

3.1 Sample and Sample Selection Procedures

Our initial sample included a total of 829 firms listed in Thai Stock Market as at September 29, 2021 (7,461 firm-year observations). The sample period starts from 2013 to 2021. We started to collect the data from 2013 because it was the period that non-audit service and audit fee disclosure requirements came into effect in Thailand. We excluded 170 firms that are listed in The Market for Alternative Investment (hereinafter; MAI) from our initial sample because there is high possibility of the data inconsistency. We then dropped 76 firms that are classified as Banking and Insurance companies due to the differences in institutional structures and regulatory financial reporting requirements. We further excluded 3 financially distressed firms. The final sample size comes to 580

firms. Due to the missing relevant data, our final firm-year observations down to 3,573 observations. The sample selection process is presented in Table 1.

To investigate the effect of auditor expertise on audit quality, we collect data from three main sources. First, we manually collected audit fees from firms' annual reports. Second, we gather financial information (i.e. net income, operating cash flows and total revenue etc.) from Eikon (Thomson Reuters Datastream) to construct accrual variables following Modified Jones Model (1995). Third, we obtained other relevant information such as company age from the Stock Exchange of Thailand.

		Firm-year observations
Initial samples	Thai listed Companies (829 firms)	7,461
Excluding;	MAI companies (170 firms)	(1,530)
	Financial and Insurance companies (76 firms)	(684)
	Financial distressed companies (3 firms)	(27)
	Final examples (580 firms)	5,220
Missing required data		(1,647)
Total sample used in tests		3,573

3.2 Variables used in tests

- **Independent variable:**

A variable of interest of this study is auditor expertise which is captured by using the estimated auditor portfolio share following Chi and Chin (2011) and Krishnan (2003). The estimated equation is as follows:

$$MS_{ij} = \frac{\sum_k R_{ijk}}{\sum_{ik} R_{ijk}}$$

Where R is sales revenue, divided by the sum of sales revenue of all clients in the ijk clients of the i audit firm in the k industry. As a result, the MS represents the market share of the audit firm in the industry based on client's sales revenue. Alternatively, we also employed Abnormal Audit Fees (*ABauditfees*) to proxy for auditor expertise.

- **Dependent Variable:**

We employed Discretionary Accruals estimated by the Modified Jones Model (1995) adjusted the performance effects following Kothari et al. (2005). Hence, the discretionary accruals calculation involves the following steps.

Step 1: Total accruals calculation

In order to determine the Total accruals based on the Cash Flow Approach (Collins and Hribar, 2002), we used the following equation:

$$TA_{i,t} = NI_{i,t} - CFO_{i,t} \quad (1)$$

where:

TA Total accruals in year t of firm i;

NI Net income in year t of firm I;

CFO Cash flows from operating activities

Step 2: Non-Discretionary Accruals calculation

We first determine coefficients of the regression equation of total accruals.

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_1 \left(\frac{1}{A_{i,t-1}} \right) + \alpha_2 \left[\frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}} \right] + \alpha_3 \left(\frac{PPE_{i,t}}{A_{i,t-1}} \right) + \epsilon_{i,t} \quad (2)$$

where:

TA_{it} Total accruals in year t of firm i

$A_{i,t-1}$	Total assets at the year end of year t-1;
$\Delta REV_{i,t}$	The change in operating revenue between year t and year t-1;
$\Delta REC_{i,t}$	The change in accounts receivable between year t and year t-1;
$PPE_{i,t}$	The gross amount of property, plan, and equipment at the year end of year t

We then calculate non-discretionary accruals using coefficients; $\alpha_1 \alpha_2 \alpha_3$, that we received from the equation 2 to proceed the following equation.

$$NDA_{i,t} = \alpha_1 \left(\frac{1}{A_{i,t-1}} \right) + \alpha_2 \left[\frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}} \right] + \alpha_3 \left(\frac{PPE_{i,t}}{A_{i,t-1}} \right) \quad (3)$$

As a result, $NDA_{i,t}$ represents non-discretionary accruals of firm i in year t.

Step 3 Discretionary Accruals Calculation

We use the NDA that we obtained from Step 2 to calculate Discretionary Accruals using equation 4.

$$DA_{i,t} = \frac{TA_{i,t}}{A_{i,t-1}} - NDA_{i,t} \quad (4)$$

where:

$DA_{i,t}$	Estimated discretionary accrual in yer t of firm il;
TA_{it}	Total accruals in year t of firm i;
$NDA_{i,t}$	non-discretionary accruals of firm i in year t.

3.3 Empirical Mode used for hypothesis tests

To test our H1 which predicts that auditor expertise is negatively associated with audit quality we regress the absolute value of discretionary accruals ($AbsDA$) proxying for audit quality, on auditor expertise ($Expert$). We predict a negative coefficient of $Expert$. We employed control variables that could affect discretionary accruals following literature. The regression equation is presented as follows.

$$AbsDA_{it} = \beta_0 + \beta_1 Expert_{it} + \beta_2 Big4_{it} + \beta_3 AGE_{it} + \beta_4 SIZE_{it} + \beta_5 CFO_{it} + \beta_6 LEV_{it} + \beta_7 Ind + \varepsilon_{it} \quad (5)$$

where:

$AbsDA_{it}$	The absolute value of discretionary accruals in year t of firm i;
$Expert_{it}$	Auditor Expertise measured by the market share of the audit firm in the industry based on client's sales revenue of firm i in year t;
$Big4_{it}$	A dummy variable that takes 1 if a firm's financial statements are audited by the Big 4 firms; PwC, EY, KPMG, and Deloitte, otherwise 0. Big4 is used to control for the effect from the audit firm size and expected to have a negative coefficient;
AGE_{it}	The number of years that company listed in Thai Stock Market to September 2021. We include the company age in the model because accruals could vary with a company life cycle (Leung, Srinidhi, & Xie, 2017) ;
$SIZE_{it}$	Firm size proxied by total assets in millions of Thai Baht. The size of the firm is included because large firms could have lower variance in accruals and we expect a negative coefficient;
CFO_{it}	Firm's Operating Cash Flows in millions of Thai Bath. We included the CFO due to the effect of performance from the cash flow basis;
LEV_{it} :	The leverage ratio calculated by the total long-term debt divided by total assets of firm i in year t-1 capturing the effect from financial risk. When firms are facing financial pressure, firms tend to be involved with earning management affecting discretionary accruals;
Ind	The industry that firm is listed within controlling for the effects of types of industry (e.g. industry that is identified to be a high level of innovation and growth may invest in high value projects, while particular industries may involve complexity for accounting estimates that affect accruals etc.)

We further test whether the complexity of the business environment arising from revenue recognition in particular industries moderate the effect of auditor expertise on audit quality (H2). In doing so, we interact with auditor expertise ($Expert$) with **firms that are listed in real estate, technology, and telecom and construction sectors (Complex)**. *Complex* is a dummy variable that takes 1 if firms are listed in Technology, Telecommunication, Real estate and Construction, otherwise 0 (Boujelben, & Kobbi-Fakhfakh, 2020). As a result, a variable of interest for

H2 test is an interactive variable (*Expert*Complex*). We predict a stronger negative association. The empirical model is presented as the following equation.

$$AbsDA_t = \beta_0 + \beta_1 Expert + \beta_2 Complexity_{it} + \beta_3 (Expert * Complex) + \beta_4 Big4_{it} + \beta_5 AGE_{it} + \beta_6 SIZE_{it} + \beta_7 CFO_{it} + \beta_8 LEV_{it} + \varepsilon_{it} \quad (6)$$

3.4 Robustness Test

In order to verify whether the results of H1 are valid, we performed robustness tests using an alternative variable to replace *Expert*, and excluded Covid-19 effect periods. Recently Accounting Standards have become more complex, auditing financial statements prepared regarding the implementing of the new set of Accounting Standards may require auditor efforts and consequently charged premium audit fees (Jung, Kim, & Chung, 2016). From this point of view, higher audit fees may capture additional resources that firms allocate to auditors for their professional expertise. We, therefore, replaced *Expert* by audit fees as an alternative variable to capture audit competency as noted in Fang and Hong (2008). We further dropped the data set obtained in 2020 due to the new set of Accounting Standards to cope with Covid-19 that may affect unusual discretionary accruals. In addition, we also re-ran the regression equation (5) excluding data periods covering 2020 and 2021 to remove the economic effects regarding Covid-19, on accounting estimates and thus discretionary accruals regarding.

4. DESCRIPTIVE STATISTICS AND RESULT DISCUSSION

Table 2 displays the descriptive statistics of continuous variables (Panel A) and dichotomous variables (Panel B) used in tests. On average, discretionary accruals (*AbsDA*) have a mean value of 0.05 (exponential value is about 1 million Thai Baht). Total assets of the samples of this study is about 2.7 million Thai Baht (mean value of 0.84). Average age of the sample size is about 19 years. About 62% of the sample size of the study hired an auditor from the Big 4 firm. 29% of firms used as samples in this study are classified into the complexity sectors and 46% of them are employed auditors that are categorized as industry - specialists.

Table 3 depicts the Pearson correlation coefficients. The results suggest that *Expert* is negatively but insignificantly correlated with discretionary accruals (*AbsDA*). Likewise, we find a positive correlation between *AbsDA* and *Complexity* but such correlation is insignificant. Consistently, the interaction between *Expert* and *Complexity* (*Expert*Complexity*) has a negative correlation with *AbsDA* but the correlation is insignificant. In accordance with the notion that to employ the specialist auditors, firms will pay premium audit fees. That is, audit fees (*Auditfees*) are positively and significantly correlated with *Expert*.

Table 2 Descriptive statistics

Variables	Mean	SD	Min	Max	N
Panel A: Continuous variables					
<i>AbsDA</i> _{i,t}	0.05	0.05	-0.17	0.21	3,573
<i>Auditfees</i> _{i,t}	3.51	2.90	0.84	11.50	3,573
<i>AGE</i> _{i,t}	18.83	10.47	1.00	47.00	3,573
<i>SIZE</i> _{i,t}	16,389.39	25,834.91	763.81	1006,36.00	3,573
<i>CFO</i> _{i,t}	0.07	0.08	-0.08	0.23	3,573
<i>LEV</i> _{i,t}	0.11	0.14	0.00	0.67	3,573
Panel B: Dichotomous variables					
Variables	N (100%)	Yes (1) (%)	No (0) (%)		
<i>Expert</i>	3,573 (100)	1,656 (46.35)	1,917 (53.65)		
<i>Big4</i>	3,573 (100)	2,216 (62.02)	1,357 (37.98)		
<i>Complexity</i>	3,573 (100)	1,029 (28.80)	2,544 (71.20)		

Note: We checked the normal distributions for all continuous variables. Continuous variables are further winsorized at 1% at the top and bottom to deal with outliers. As for DA estimated with Modified Jones Model by Dechow et al. (1995), we rationalized by comparing previous studies based in Thai stock market context. By doing so, we find that our DA presents relatively insignificant lower mean values.

Table 3 Pearson correlation analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>AbsDA</i> (1)	-							
<i>Expert</i> (2)	-0.02	-						
<i>Complexity</i> (3)	0.04	0.08*	-					
<i>Expert*Complexity</i> (4)	-0.00	0.45*	0.66*	-				
<i>Auditfees</i> (5)	-0.04	0.18*	0.16*	0.20*	-			
<i>Big4</i> (6)	-0.06*	0.44*	0.04	0.33*	0.35*	-		
<i>AGE</i> (7)	-0.00	0.03	-0.03	0.05	0.06*	-0.05	-	
<i>SIZE</i> (8)	0.01	0.23*	0.17*	0.23*	0.59*	0.30*	0.08*	-

* p<0.05

Table 4, Column (1) and (2) demonstrates the results of H1 and H2 tests using the regression equation (5) and (6) respectively. Column (1) shows that Expert has a negative and significant coefficient ($t = -2.58$, p -value < 0.01). This suggests that auditor expertise at industry level reduces the discretionary accruals and thus improves audit quality, as predicted in H1. Big4, however, is positively but insignificantly associated with discretionary accruals. Although prior studies employed Big 4 as a proxy for audit quality, it cannot solely capture audit quality which is reflected in previous evidence that using Big 4 to differ audit quality can be failed to find the result (Eshleman & Guo, 2014; Hussein, & MohdHanefah, 2013). This result can also point out whether this is a product of the overload of audit work according to the numbers of clients per specialist auditors. Coefficient of Age is negative and significantly associated with AbsDA ($t = -6.97$, p -value < 0.01) suggesting that firms that have operated the business for longer periods tend to have smaller discretionary accruals. Likewise, the size of firms (*SIZE*) has a negative and significant relationship with AbsDA ($t = -10.80$, p -value < 0.01). Consistently, *CFO* and *LEV* are negatively and statistically associated with AbsDA ($t = -6.47$, p -value < 0.01 ; $t = -2.98$, p -value < 0.01 , respectively). Thus, largersize, larger amount of cash flow from operating activities, and higher leverage lead to smaller amount of discretionary accruals. The previous knowledge of the effects of levels of operating cash flows, and the leverage ratio on earning management is not always applied in new patterns of business environments (Awuye & Aubert, 2022). As for the industry control, the coefficient is positively associated with AbsDA and this could be the result of the complexity environment in specific sectors.

Column (2) reports the test of H2 which predicts that the relationship between audit expertise (*Expert*) and audit quality (*AbsDA*) will be conditional on industries that operate within the complexity of the accounting practice environment. Results indicate that a coefficient of *Complexity* is significantly and positively related to AbsDA ($t = 3.97$, p -value < 0.01). Recall the Complexity is a dummy variable taken 1 if firms are listed in Technology, Telecommunication, Real estate and Construction sectors. These sectors faced the difficulty in applying the IFRS 15 revenue recognition due to bundle transactions and limited fair value information for individual obligation. As a result, management may apply a high level of judgment to comply with accounting standards leading to larger accruals. While Expert has a negative relationship with discretionary accruals ($t = -3.06$, p -value < 0.01) which leads to the same conclusion as mentioned above. However, the interactive variable which is our variable of interest (*Expert * Complex*) is insignificant and shows a positive association with discretionary accruals. This could be interpreted that the specialist auditors can improve audit quality but such specialization does not improve audit work when auditing engagement clients that operate business in a high level of complexity of accounting practice causing high inherent risk. As for the control variables, results are consistent with the previous discussion.

Table 4 Main Results

Variables	Dependent Variable: Discretionary Accruals (<i>AbsDA</i>)	
	(1) H1	(2) H2
<i>Expert</i>	-0.004*** [-2.58]	-0.005*** [-3.06]
<i>Complexity</i>	-	0.009*** [3.97]
<i>Expert * Complex</i>	-	0.003 [0.86]
Control variables		
<i>Big4</i>	0.002 [1.37]	0.002 [1.18]
<i>AGE</i>	-0.000*** [-6.97]	-0.001*** [-7.14]
<i>SIZE</i>	-0.000*** [-10.80]	-0.000*** [-11.24]
<i>CFO</i>	-0.058***	-0.050***

<i>LEV</i>	[-6.47] -0.019***	[-5.56] -0.017***
<i>Ind</i>	[-2.98] 0.002***	[-2.83] -
Constant	[3.89] 0.069***	- 0.073***
VIF	[25.96] 1.25	[32.90] 1.61
Observations	3,573	3,573
R-squared	0.09	0.09
Adj. R-squared	0.09	0.09

Table 5 demonstrates the results of the robustness test using audit fees (*Auditfees*) as an alternative measurement for auditor expertise. In doing so, we replaced *Expert* by *Auditfees* and then rerun the regression equation (5). Results present that there is a significantly positive relationship between *Auditfees* and *AbsDA* ($t = 2.93$, p -value < 0.01). This finding suggests that higher audit fees lead to higher discretionary accruals. This surprising finding is supported by the notion that premium audit fees represent economic bonding which can be linked to engagement client bargaining power (Asthana & Boone, 2012; Gandía & Huguet, 2021). In this sense, it can be interpreted that abnormal audit fees and/or high audit fees do not neither represent auditor expertise nor audit quality. In the light of control variables, results remain consistent.

Table 6 reports the robustness check results excluding the effects of the application of accounting practices during the Covid - 19 periods. We excluded the data period of 2020 and rerun the regression equation (5) and (6). Findings remained consistent with previous discussions. We further rerun the regression equation (5) and (6) excluding data periods 2020 and 2021. Untabulated results show that findings are unchanged.

Table 5 Robust Test Results: using audit fees to capture auditor expertise

Dependent Variable: Discretionary Accruals (<i>AbsDA</i>)	
Variables	H1
<i>Auditfees</i>	0.001***
Control variables	[2.93]
<i>Big4</i>	0.000
<i>AGE</i>	[-0.30]
<i>SIZE</i>	-0.001***
<i>CFO</i>	[-7.25]
<i>LEV</i>	-0.000***
<i>Ind</i>	[-11.36]
Constant	-0.057***
VIF	[-6.36]
Observations	-0.020***
R-squared	[-3.23]
Adj. R-squared	0.001***
	[3.61]
	0.067***
	[25.24]
	1.33
	3,573
	0.09
	0.09

Table 6 Robust Test Results: excluding Covid-19 effects

	(1)	(2)
	H1	H2
Variables		
<i>Expert</i>	-0.004** [-2.20]	-0.005*** [-2.64]
<i>Complexity</i>	-	0.010*** [3.99]
<i>Expert* Complexity</i>	-	0.002
Control variables		
<i>AUDITOR</i>	-	[0.67]
<i>AGE</i>	0.003* [1.67]	0.003 [1.51]
<i>SIZE</i>	-0.001*** [-7.02]	-0.001*** [-7.11]
<i>CFO</i>	-0.000*** [-9.74]	-0.000*** [-10.16]
<i>LEV</i>	-0.080*** [-8.35]	-0.071*** [-7.40]
<i>Ind</i>	-0.022*** [-3.25]	-0.022*** [-3.24]
Constant	0.002*** [3.49]	-
Observations	0.071*** [25.26]	0.074*** [31.72]
R-squared	3,148	3,148
Adj. R-squared	0.09	0.10
	0.09	0.10

5. CONCLUSION

Auditor expertise is one of crucial competencies of an auditor in delivering high audit quality to engagement clients. According to prior studies, an industry auditor's expertise is more likely to promote high audit quality by using knowledge and skillfulness based on cumulative practical skills and prior experiences. Auditor expertise also discovers the erroneous (Solomon, Shields and Whittington, 1999; Owosho, Messier and Lynch, 2002) and assesses risks (Taylor, 2000; Low, 2004) in companies where have complexity in accounting transactions. Financial statements of companies where audited by auditor specialists can reflect in high quality of financial reportings and thus, audit quality. There is an increase in the number of listed companies and complexity of accounting practices arising from new accounting standards in Thai Stock Market, in particular IFRS 15, we re-examine research questions regarding auditor expertise and audit quality conditional on the complexity of the revenue recognition environment. In doing so, this study obtained data from Thai listed companies from 2013 to 2021 and employs discretionary accruals calculated by the Modified Jones Model (1995) adjusted with performance indicators as a proxy of audit quality. The findings indicate that auditor (industry) expertises captured by the market-share based portfolio can provide greater audit assurance services and thus, better audit quality because of their industry and practical experiences. However, using audit fees to proxy for auditor expertise brings us a contrast conclusion. We document that higher audit fees lead to higher discretionary accrual supporting the notion that audit clients paid higher audit fees to create the power of bargaining over auditors. Excluding the Covid-19 effects, our results remained consistent. In the sense of the complexity condition, our findings suggest that auditor expertise can improve audit quality but not when auditing clients that operate at a high level of such complexity of accounting practices. Our results add to the literature regarding auditor specialization and complexity business environments as well as point out to audit firms and regulators that we need to pay more attention to firms that pay high audit fees; abnormal audit fees. Note that our results are subject to the limitations of expertise at individual partner level.

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