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# The Interaction Effect of Female Leadership in Audit Committees on the Relationship Between Audit Quality and Corporate Tax Avoidance

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**Abstract:** This study examines the moderating role of female audit committee chairs on the relationship between audit quality (measured by audit fees) and corporate tax avoidance. The analysis is based on 165 UK firms between 2011 and 2021 using static panel data regression models and Lewbel's heteroscedastic identification method to check robustness. The findings highlight the significant role of audit quality in reducing corporate tax avoidance. In addition, the female audit committee chair strengthens the negative relationship between audit quality and tax avoidance. This study has many implications. For corporate governance, it shows the value of female leadership in audit committees, especially in curbing aggressive tax strategies. Firms should increase female representation in key roles, like audit committee chairs, to improve oversight and ethical financial practices. For regulators and policymakers, it supports the case for strengthening gender diversity mandates to improve corporate transparency and accountability. Tax authorities can use the fact that firms with strong audit quality and female-led audit committees are less likely to engage in tax avoidance to focus their audits on companies with weaker governance structures.

**Keywords:** tax avoidance; audit quality; female audit committee chair; agency theory; resource dependence theory; UK

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## 1. Introduction

Tax avoidance has become one of the biggest issues in corporate governance because it has big implications for financial transparency, corporate accountability, and social equity. Tax avoidance is the strategic planning of tax liabilities within the law or, in simple terms, not paying taxes on profits (Habib et al., 2024; Payne & Raiborn, 2018). Although it is a legal practice and allows companies to reduce their tax burden and, hence, increase shareholders' wealth, it goes against the spirit of the tax laws and can erode stakeholders' trust. Apart from the ethical issues it raises, tax avoidance has big economic implications for the broader macroeconomic concerns for the UK, as it is seen as a reduction in public revenues that are vital for funding public service infrastructure and social welfare programs (Fuest & Riedel, 2009; Birks & Downey, 2015). Tax avoidance is so complex because of all the variables involved. Firm-specific characteristics, such as ownership structure, governance practices, and financial strategies, play a big role in the nature and process of tax decision making (Alharasis, 2023; Alkurdi & Mardini, 2020; Minnick & Noga, 2010).

In developed countries, like the US, Apple Inc., a multinational corporation, has been accused of using complex strategies, like profit shifting and exploiting tax loopholes, to reduce its tax bill. This has raised questions of corporate responsibility and led to public debates on changing the tax laws to close these loopholes (Holtzblatt et al., 2016; Yang & Metallo, 2018). In contrast, in developing countries, like Nigeria, the MTN Group, a leading telecommunications provider, was accused of tax evasion and underreporting profits to avoid paying more tax. This shows how weak regulatory frameworks and governance structures in developing countries make tax avoidance worse (Abubakar et al., 2024).

Audit quality, normally proxied by audit fees, translates the ability of auditors to detect and correct misstatements in financial reporting (Li & Liu, 2024). High-quality audits increase confidence in financial disclosure and act as a deterrent to aggressive tax planning because of enforced compliance due to tighter regulation and monitoring (Qawqzeh, 2023). Firms with good audits have been seen to have more financial transparency and less tax avoidance compared to others because an independent auditor as a monitor holds management more accountable for their actions (Al Lawati & Hussainey, 2021). Audit quality does not constrain tax avoidance uniformly and is contingent on governance mechanisms, especially the audit committee composition and leadership.

Modern corporate governance has recognized the importance of board diversity for good decision-making, accountability, and ethical standards in organizations. Gender diversity matters more to governance outcomes (Ab Aziz et al., 2024). Women in leadership roles bring unique perspectives shaped by their diverse life experiences, roles in society, and professional challenges (Al-Matari, 2024; Saleh & Maigoshi, 2024; Alshdaifat et al., 2024b). These perspectives can increase ethical awareness, as women leaders tend to prioritize transparency, fairness, and the long-term interests of stakeholders. Such ethical awareness is key to tackling complex organizational challenges, collaborating, and making strategic and financial decisions that align with the broader social and corporate responsibilities (Abdulrahman & Amoush, 2020).

Within this context, female audit committee chairs (FACCs) have become an area of growing interest. As leaders of the audit committee, FACCs have a critical role in overseeing financial reporting, internal controls, and compliance (Ayinla et al., 2022). Their perspectives and leadership style can make a big difference in internal monitoring systems and ethical financial practices and for reducing tax avoidance (Alshdaifat et al., 2024a). Despite this potential, the role of FACCs in moderating the relationship between audit quality and tax avoidance has not been studied. Most research on gender diversity in corporate governance focuses on board representation, leaving a big gap in understanding the specific impact of FACCs on tax-related behaviors. Therefore, this paper aims to address this gap by examining the interaction effect of female leadership in audit committees on the relationship between audit quality and tax avoidance.

This research is driven by the UK's corporate governance reforms to increase female representation on boards and engagement in decision making. Gender matters in corporate governance because women bring different perspectives, experiences, and collaborative approaches to leadership. Research shows that female directors focus on ethical standards, long-term sustainability, and stakeholder accountability, which can influence key decisions, including tax reduction. Our second reason is the unique context of the UK, where corporate governance is strong, but women on boards is voluntary, not mandatory. This provides a test bed to evaluate the impact of voluntary gender diversity initiatives and their outcomes. Our third reason is the broader importance of board gender diversity, which goes beyond individual companies to national economic and social systems. By focusing on UK firms, this research provides insights into a jurisdiction with a mature corporate governance framework and addresses the gaps in gender representation relevant to corporate decision making and broader societal goals.

Our research contributes to the existing literature. Firstly, we add to the audit literature on the impact of audit quality by showing that firms with higher audit quality have lower tax avoidance. This holds even when we control for female audit committee chairs. However, we build on prior research by showing that the relationship between audit quality and tax avoidance varies depending on whether women are on the audit committee. This is important because most research on tax avoidance is UK-focused. We use female audit committee chairs to examine how this factor moderates the relationship between audit quality and corporate tax avoidance. Related to our contributions, there must be a significant increase in our understanding of corporate governance, board committees, agency theory, and the role of female audit committee chairs (FACCs) in firms. Although this is the first study, it looks at the moderating role of FACCs between audit quality and tax avoidance.

This study has many implications. For corporate governance, it shows the value of female leadership in audit committees, especially in curbing aggressive tax strategies. Organizations should increase female representation in key roles, like audit committee chairs, to improve oversight and ethical financial practices. For regulators and policymakers, it supports the case for strengthening gender diversity mandates to improve corporate transparency and accountability. Tax authorities can use the fact that firms with high audit quality and female-led audit committees are less likely to engage in tax avoidance to focus their audits on companies with weak governance.

By utilizing static panel data regressions on a sample of 165 UK firms listed during the period from 2011 to 2021, our study unveils that audit quality significantly influences corporate tax avoidance. In particular, higher audit fees indicate a negative relationship with tax avoidance. Furthermore, the presence of a female audit committee chair appears to mitigate this relationship between audit quality and tax avoidance. Thus, this study highlights the importance of female representation on audit committees in fostering internal monitoring.

## 2. Literature Review and Hypothesis Development

### *2.1. Audit Quality and Tax Avoidance*

Agency theory suggests that information asymmetry between shareholders and management can create ethical problems, which can lead to managers being opportunistic. To address these issues, both parties are incentivized to reduce ethical risk and implement measures to protect their own interests. Audit quality plays a key role in reducing the conflicts of interest between management and external shareholders (Alharasis et al., 2023; Gaaya et al., 2017). The main objective of auditors is to increase the reliability of information provided to shareholders to reduce information asymmetry and curb opportunism (Jensen & Meckling, 1976). Auditors also play a key role in minimizing misrepresentation in accounting information—a mechanism used by firms to control agency costs between creditors and shareholders (Jensen & Meckling, 1976; Watts & Zimmerman, 1990). Overall, the aim of an audit is to improve financial reporting (Beisland et al., 2015; Mansour et al., 2024).

Furthermore, auditing is considered a mechanism of governance, as auditors who are more reliable can be the gatekeepers to certify the information of firms. In the mission of audit, if high-quality auditors detect material misstatements, they require a restatement of previous financial reports (Sitanggang et al., 2019). Additionally, the main tasks of auditors are to give an impartial judgment on whether the financial statements and associated disclosures accurately and truthfully depict the financial position of their client's business in all crucial aspects, following universally acknowledged accounting principles (Kanagaretnam et al., 2016). DeAngelo (1981) outlined the quality of audit services provided when an auditor reveals and reports breaches in a client's accounting system. Similarly, the auditor's independence is considered the conditional probability of reporting a discovered violation from a given client. In this context, audit quality includes the auditor's activities in performing its audit function effectively and efficiently in a manner that benefits the firm's management and stakeholders (Saidu & Aifuwa, 2020). Therefore, audit quality is determined by the accuracy of the information that the auditor gives to investors (Titman & Trueman, 1986). The transparency is the most important factor for auditing, which represents one of the major principles of corporate governance (Lestari & Nedya, 2019). Audit committees are responsible for monitoring financial reporting, aiming to ensure that the firm is producing accurate financial reporting with high quality (Alhasnawi et al., 2024a, 2024b), so the differences in audit quality affect the auditors' level of credibility (Lin & Hwang, 2010).

Kuncoro and Surjandari (2023) defined audit fees as the payment of audit fees by the audited company to a public accountant, which serves as remuneration for their examination of the financial statements. Thus, two aspects are crucial for audit firms when determining the price of their services. Firstly, they must ensure that the compensation they receive is commensurate with the services they provide to the entity. Secondly, their bid should be competitive compared to other audit firms (Salehi et al., 2020). In the same context, audit fees are the amount of compensation an auditor receives for professional services in a company's audit process (Lestari and Nedya (2019)). Similarly, the audit fee is determined in the contract between the auditor and the client, through the time spent in the audit process as well as the various services that required it. According to Collier and Gregory (1996), the audit committee plays a crucial role in ensuring audit fees do not decrease to a point where the audit's quality is compromised. In contrast, Salehi et al. (2020) suggested that auditors with greater industry expertise or a longer tenure with a client company are better positioned to provide tax advice, which may lead them to request higher fees from their employer. Therefore, they aimed that auditors' fees are contingent upon their clients, and they may become less resistant to the client's tax avoidance schemes.

In this context, previous studies have revealed mixed results in the aim of clarifying the relationship between audit fees and tax avoidance (Salehi et al., 2020; Lestari & Nedya, 2019; Khan & Chen, 2017). Thus, auditors not only have to invest more time in audits to minimize risks but also strive to employ more experienced personnel and cutting-edge auditing methods to enhance the reliability of financial information. This is performed to uphold their professional reputation within the community, which consequently results in higher audit fees (Salehi et al., 2020). Similarly, the study of Salehi et al. (2018) showed a significant relationship between audit fees and tax avoidance, and he also indicated that the largest audit firms typically earn higher wages than smaller firms due to their more experienced employees and the more sophisticated audit tests they conduct to maintain their reputation among the firms. In the same vein, another study by Martinez and Lessa (2014) suggested that tax avoidance strategies are correlated with increased audit fees, as companies that employ more aggressive tax planning tend to face higher costs for audit services.

On the other hand, some studies found a negative relationship and that audit fees do not affect tax avoidance. For example, Kuncoro and Surjandari (2023) found that audit fees have no effect on tax avoidance. Salehi et al. (2018) found that board independence has no significant effect on audit fees. Riguen et al. (2020) found that audit specialization and audit fees negatively affect corporate tax avoidance. Lestari and Nedya (2019) found that audit quality (measured by audit size and audit fees) has a negative effect on tax avoidance. Based on these findings and agency theory, our first hypothesis is claimed as follows:

**H1:** *Audit quality significantly and negatively impacts corporate tax avoidance in UK firms.*

### *2.2. The Moderating Effect of a Female Chairperson on the Audit Committee*

Among the many theories used to look at the impact of gender diversity on boards and their committees, agency theory and resource dependence theory are the most commonly used (Dang & Nguyen, 2022). The board of directors is responsible for monitoring and controlling managers' self-serving behaviors to mitigate agency costs arising from the separation of ownership and control (Carter et al., 2010). Agency problems occur when managers put their interests before shareholders in decision making. To solve these conflicts, Fama and Jensen (1983) suggested increased monitoring of senior management as the solution. Agency theory does not predict how board characteristics affect firm performance (Carter et al., 2010), but prior research on gender diversity suggests that female directors are more fiscally responsible and more involved in monitoring. Increasingly, there is recognition of the value women can bring to corporate boards (Alkebsee et al., 2022; Jarboui et al., 2020). This perspective highlights the unique attributes female board members bring so we can speculate how board gender diversity might impact firm performance (Mansour et al., 2023; Pidani et al., 2020; Saleh et al., 2021). In principle, this recognition calls for further investigation into the potential synergies between gender diversity initiatives and effective corporate governance, which could ultimately enhance overall firm performance and address issues related to agency costs.

Resource dependence theory points out that firms as open systems maintain relationships with external entities and their environment to survive and grow (Pfeffer & Salancik, 2015). This theory shows the organization's dependence on external resources and identifies three ways to access and nourish those resources: wise counsel, compliance and legitimacy, and communication. Within this framework, corporate boards are the key channels to connect with external parties who control the resources and to ensure sustainability and growth (Alkebsee et al., 2022). Thus, female directors are seen to bring unique qualities to the board (Pidani et al., 2020). Alkebsee et al. (2022) also say female audit committee members, through their monitoring roles, can fix gaps in weak governance, so they can boost overall corporate oversight and resource nurturing.

Several prior studies have been published to describe the role of females on boards of directors and their importance in enhancing the transparency and ethical standards of firms. For example, Saidu and Aifuwa (2020) found that gender-diverse boards are more likely to prioritize ethics and long-term sustainability, which can reduce corporate tax avoidance. Female directors bring different perspectives to the table, including more scrutiny of financial and tax strategies (Mansour et al., 2024; Jarboui et al., 2020). This is in line with Saleh et al. (2021), who found that gender-diverse boards have better governance and decision-making processes.

Adding to this, the diversity on the board promotes the creativity, ideas, and innovation in firms (Carter et al., 2010). Board diversity refers to the variety of different characteristics among the members of corporate boards and subcommittees (Alkebsee et al., 2022). This diversity includes age, education, race, and gender. It also comprises multiple dimensions, like task and relational skills, political preferences, and sexual preferences. Consequently, the issue of gender diversity on boards is a significant question for different parties, namely, firms, employees, and decision makers around the world. The prior literature demonstrated that firms with females on their board of directors have a lower demand for audit effort, resulting in a higher audit quality requirement. Recently, Green and Homroy (2018) asserted that female representation in corporate governance contributes significantly to firms' effectiveness and performance. Hence, in order to protect a firm's reputation capital and avoid legal liability (Gilson, 1990; Fama & Jensen, 1983), firms with female directors tend to prefer high-quality specialist auditors.

Given the weight of responsibility on the board of directors, corporate governance requires listed companies to have standing committees to aid decision making and improve board performance. These committees are the remuneration committee, nomination committee, audit committee, and risk committee (Chijoke-Mgbame et al., 2020). Of all of these, the audit committee is one of the most important corporate governance tools to checkmate corporate managers' opportunistic behaviors (Dang & Nguyen, 2022; Gendron & Bedard, 2006). The audit committee also ensures financial reporting integrity (Sultana et al., 2020). Interestingly, female board directors, including committee members, tend to push for more auditing due to their risk aversion compared to male directors (Adams & Ferreira, 2009). This shows the value of gender-diverse boards; they are more proactive in monitoring and oversight. Their emphasis on accountability also shows the importance of diversity in corporate governance.

In the same context, they identified the different responsibilities of the audit committee, namely, the quality and integrity of financial reporting, compliance with legal and regulatory requirements, the qualifications and independence of external auditors, and the performance of risk management and internal audit functions. The presence of professional accountants on the board and its subcommittees illustrates their significant contribution to improving financial reporting quality and audit effectiveness within firms. This demonstrates a deliberate effort to ensure effective oversight and financial expertise, ultimately bolstering the reliability and integrity of financial reporting processes and audit procedures. The idea of overlapping AC chair/directors, as elucidated by Al Lawati and Hussainey (2021), involves individuals who simultaneously serve as audit committee (AC) chair/directors while also occupying positions on other committees, such as risk, nomination, and remuneration committees, within a company. The critical monitoring function of ACs arises from their responsibility in selecting an appropriate external auditor tasked with auditing financial statements, which are crucial documents utilized by stakeholders in the decision-making process. As the primary leader within the committee, the AC chair's extensive experience and expertise are vital in enhancing committee effectiveness. Setting the committee's agenda and collaborating with AC members are among the essential responsibilities of the AC chair. Furthermore, the AC chair plays a pivotal role in ensuring the committee's efficient operation to achieve its primary objective of promoting high-quality financial reporting, as emphasized by Furqaan et al. (2019).

Female directors with accounting expertise on the audit committee help the committee to communicate better with auditors. They can use their professional qualifications to support other audit committee members to understand complex accounting issues and implement the auditor's recommendations (Saleh & Maigoshi, 2024; Alkebsee et al., 2022). Despite the growing focus on gender diversity on audit committees, research has largely overlooked the specific role of female audit committee chairs. Among all committee members, the chair has the highest level of responsibility as they oversee the entire committee. Ittonen et al. (2010) found that companies with female audit committee chairs have fewer internal control issues, fewer financial restatements, and more financial experts on the audit committee. These findings culminate in the formulation of our next hypothesis as follows:

**H2:** *Female audit committee chairs negatively moderate the relationship between audit quality and tax avoidance.*

## 3. Research Design

### *3.1. Sample Selection and Data Collection*

Our sample covers all firms listed on the FTSE 350 for the period 2011–2021. We excluded all financial firms because of the nature of the rules and regulations of these firms, which may impact some of the governance practices. Likewise, we eventually rejected firms with missing variables, thus resulting in a final sample of 1815 firm–year observations for 165 firms. Table 1 presents the distribution of the listed firms of our sample. Therefore, the financial information data for our study were obtained from Thomson Reuters Eikon, while the board information was collected from the annual reports of the companies' websites. The final sample includes 1815 firm–year observations. Table 2 shows the distribution of different firms by industry and year as follows:

**Table 1.** Sample selection.

| Sample | Number of Firms |
|---|---|
| Initial sample | 333 |
| Less: Financial Firms | (130) |
| Less: Missing data variables | (38) |
| Final sample | 165 |
| Period of study | 11 |
| Total of observation | 1815 |

**Table 2.** Distribution of the sample.

| Industry | Number | Percentage |
|---|---|---|
| Real Estate | 18 | 10.90 |
| Consumer Staples | 17 | 10.30 |
| Health Care | 9 | 5.45 |
| Industrials | 49 | 29.7 |
| Technology | 9 | 5.45 |
| Consumer Discretionary | 30 | 18.18 |
| Telecommunications | 3 | 1.82 |
| Basic Materials | 14 | 8.5 |
| Energy | 16 | 9.7 |
| TOTAL | 165 | 100 |

The selection of firms listed on the London Stock Exchange is rationalized by the fact that tax regulations vary significantly across countries, which reduces country-specific bias in the analysis. Additionally, there is a wealth of data available on board characteristics for UK-based firms compared to other European firms. Moreover, in the UK, as an Anglo-American country, financial information is prepared using a common law accounting system.

### *3.2. Measurement of Tax Avoidance*

Dependent variable: Tax avoidance: we determine the annual ETR, which financial statements from firms are required to disclose. The effective tax rate refers to the proportion of total tax expense to pre-tax income for a particular firm (Gaaya et al., 2017; López-González et al., 2019).

$$\text{ETR} = \text{Tax expense}/\text{pre-tax income}$$

Independent variable: Audit quality is an important factor to consider in any study. In this case, the independent variable being examined is the level of audit quality, which is determined by audit fees. Kanagaretnam et al. (2016) posited that the amount of audit fees paid serves as a reliable indicator of the effort expended by the auditor. Yassin and Nelson (2012) concurred, suggesting that a higher fee for audit services signals that the auditor is delivering more efficient and effective services to the firm when compared to a lower fee.

Moderating variable: This variable refers to female audit committee chairs (FAC-CHAIRs). We calculate this measurement as a dummy variable coded 1 if the chair of the audit committee is female and 0 if it is otherwise (Alkebsee et al., 2022).

Control variable: In this study, we include several control variables that have been found to be related to tax avoidance. Audit committee independence and meetings, firm size, leverage, sales growth, and the ratio of market-to-book value to control growth opportunities (Aziz et al., 2024; Gaaya et al., 2017; Shubita, 2023a, 2023b). A summary of the measurement methods used in this investigation is given in Table 3.

**Table 3.** Description and measurement of the variables at the top of the form.

| Variables | Abbreviation | Definition | Source |
|---|---|---|---|
| Dependent Variable | | | |
| Audit fees | AUD_FEES | The natural logarithm of total audit fees | Thomson Reuters Eikon |
| Independent Variables | | | |
| Tax avoidance | ETR | Tax expense/pre-tax income | Thomson Reuters Eikon |
| Moderator Variable | | | |
| Female audit committee chair | FAC-CHAIR | 1 if the audit committee chair is a female director and 0 if otherwise | Hand-collected from the company's annual report/website |
| Control Variables | | | |
| Audit committee independence | ACI | Proportion of independent directors on the audit committee | Thomson Reuters Eikon |
| Audit committee meetings | ACM | Number of audit committee meetings | Thomson Reuters Eikon |
| Leverage | Lev | Long-term debt divided by total assets | Thomson Reuters Eikon |
| Firm size | SIZE | Natural logarithm of total assets | Thomson Reuters Eikon |
| Sales growth | Growth | (Total sales revenue in current year minus total sales in previous year) divided by total sales in current year. | Thomson Reuters Eikon |
| Market value to book | MVB | The market value of the common equity/book value of the common equity | Thomson Reuters Eikon |

### *3.3. Econometric Specification*

To empirically examine the relation between audit quality and corporate tax evasion, as outlined in our initial hypothesis, we employ OLS regression models with robust standard errors. Specifically, we assess the following regression models:

$$ETR_{i,t} = \alpha 0 + \beta 1\ AUD\_FEES_{i,t} + \beta 2\ ACI_{i,t} + \beta 3\ ACM_{i,t} + \beta 4\ Lev_{i,t} + \beta 5\ Size_{i,t} + \beta 6\ Growth_{i,t} + \beta 7\ MVB_{i,t} + \varepsilon_{i,t} \quad (1)$$

To evaluate the moderating impact of female audit committee chairs, we include an interaction term between female audit committee chairs and audit quality in our model and estimate the following equation:

$$ETR_{i,t} = \alpha 0 + \beta 1\ AUD\_FEES_{i,t} + \beta 2\ ACCHAIR\_F_{i,t} + \beta 3\ FAC-CHAIR_{i,t} * AUD\_FEES_{i,t} + \beta 4\ ACI_{i,t} + \beta 5\ ACM_{i,t} + \beta 6\ Lev_{i,t} + \beta 7\ Size_{i,t} + \beta 8\ Growth_{i,t} + \beta 9\ MVB_{i,t} + \varepsilon_{i,t} \quad (2)$$

# 4. Results and Analysis

## *4.1. Descriptive Statistics*

Table 4 displays the descriptive statistics for the regression variables, including the dependent and independent variables. The panel provides the mean, minimum, median, maximum, and standard deviation for the entire sample. Consequently, it presents the descriptive analysis for the various variables examined, revealing substantial differences among the firms in the sample. Tax avoidance is measured by the effective tax rate (ETR), ranging from −45.19 to 0, with a mean of −18.45 and an SD of 12.80. The audit fees (measured by audit fees) paid by the firm range from 5.29 to 9.82, with a mean of 7.28 and an SD of 1.26. The female audit committee chair (FAC-CHAIR) exhibited considerable variation among the firms in the sample, ranging from 0 to 1, with a mean of 0.12 and an SD of 0.33. The firm size (SIZE) varied from 10.32 to 19.59, with a mean of 14.71 and an SD of 1.60. Leverage (LEV) also showed considerable variation among the sample firms, ranging from 0 to 2.69, with a mean of 0.21 and an SD of 0.18. Lastly, the ratio of the market-to-book value (MVB) also showed considerable variation among the sample firms, ranging from 0.64 to 12.1, with a mean of 3.44 and a standard deviation of 3.04.

**Table 4.** Descriptive statistics.

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| ETR | 1815 | −18.45 | 12.80 | −45.19 | 0 |
| AUD_FEES | 1815 | 7.28 | 1.26 | 5.29 | 9.82 |
| FAC-CHAIR | 1815 | 0.12 | 0.33 | 0 | 1 |
| ACI | 1815 | 94.539 | 12.573 | 0 | 100 |
| ACM | 1815 | 4.562 | 1.593 | 0 | 14 |
| Size | 1815 | 14.71 | 1.60 | 10.32 | 19.59 |
| Lev | 1815 | 0.21 | 0.18 | 0 | 2.69 |
| Growth | 1815 | 0.145 | 0.314 | −0.271 | 0.579 |
| MVB | 1815 | 3.44 | 3.04 | 0.64 | 12.1 |

## *4.2. Diagnostic Tests*

This study aims to investigate the connection between tax avoidance, the dependent variable, and the independent variables (audit fees), as well as the correlations among the independent variables, utilizing the Spearman Correlation Matrix. The Pearson's pairwise correlations among the variables employed in our empirical regressions are presented in Table 5. Notably, ETR demonstrates a significant and positive correlation, as suggested by prior research. Additionally, we observe a negative and significant correlation between audit fees and ETR. Our investigation reveals that these coefficients differ across variables. Noteworthy, a substantial multicollinearity issue between the independent variables is indicated when the Pearson's correlation exceeds 0.8. As depicted in Table 5, there is no evidence of multicollinearity among the independent variables in our research model, as correlations do not surpass 0.8.

**Table 5.** Pearson's correlations for independent variables in UK firms.

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | VIF |
|---|---|---|---|---|---|---|---|---|---|---|
| (1) ETR | 1.000 | | | | | | | | | - |
| (2) AUD_FEES | −0.131 * | 1.000 | | | | | | | | 1.63 |
| (3) FAC-CHAIR | −0.115 ** | 0.239 | 1.000 | | | | | | | 1.01 |
| (4) ACI | 0.079 ** | 0.242 *** | 0.024 | 1.000 | | | | | | 1.61 |
| (5) ACM | 0.276 *** | 0.284 *** | 0.311 | 0.179 *** | 1.000 | | | | | 1.03 |
| (6) Size | 0.101 | 0.376 * | −0.021 | 0.123 * | 0.087 | 1.000 | | | | 1.92 |
| (7) lev | 0.055 * | 0.126 * | 0.053 | 0.261 * | 0.067 | 0.145 * | 1.000 | | | 1.09 |
| (8) Growth | 0.156 *** | 0.091 *** | 0.128 | 0.197 | 0.271 ** | 0.031 | 0.156 ** | 1.000 | | 2.16 |
| (9) MVB | −0.178 * | −0.050 * | 0.082 * | 0.143 ** | 0.156 * | −0.243 * | 0.018 | 0.134 * | 1.000 | 1.19 |

*, **, and *** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

These findings provide preliminary support for the notion that audit fees are associated with corporate tax avoidance activities. Given the generally low correlations among independent variables, multicollinearity is not a concern in the regression models employed in our analysis. Moreover, we calculate the Variation Inflation Factors (VIFs) to assess multicollinearity, with values ranging between 1.01 and 2.92, which are well below the threshold of 10 (Neter et al., 1996), thus confirming the absence of multicollinearity issues.

### 4.3. Results and Discussion

Two tests were conducted to determine which model to select. First, the Breusch and Pagan test was employed to differentiate between OLS and random effects. Second, the Hausman test was utilized to distinguish between fixed and random effects. Both tests were significant at the 0.05 level; thus, a fixed effects panel was implemented. The results are presented in Tables 6 and 7.

The findings of the study on the impact of audit fees on tax avoidance, as measured by ETR, are presented in Table 6. Our analysis reveals a negative and statistically significant relationship between audit fees and ETR at the 1 percent level (as shown in Column (1) of Table 6), which suggests that audit fees may contribute to higher levels of tax avoidance. Thus, the empirical evidence backs up hypothesis 1, indicating that higher auditor quality is associated with lower levels of tax avoidance among audit clients.

Our study revealed a negative and statistically significant coefficient for audit fees, which aligns with the idea that better auditor quality is negatively correlated with corporate tax avoidance. This result is consistent with Kanagaretnam et al. (2016), as their study showed clear evidence that the quality of auditing is negatively related to the likelihood of tax aggressiveness, even after accounting for other factors, such as the characteristics of the home country's tax system.

Our research aligns with the findings of Lestari and Nedya's (2019) study, which demonstrated that higher audit fees set by auditors lead to improved audit quality, ultimately reducing tax avoidance strategies. Similarly, the results of our study corroborate those of Riguen et al. (2020), who discovered a negative relationship between corporate tax avoidance and audit fees. This suggests that companies with higher audit fees are less likely to engage in tax avoidance practices. Tax avoidance could be seen as a manifestation of the agency theory, which leads to decisions that prioritize a manager's personal interests. As a result, it is a challenge for stakeholders to develop strategies for controlling incentives and reducing agency costs (Jensen & Meckling, 1976). By utilizing their tax departments and agencies and dedicating more time, auditors can better evaluate the validity of tax items included in estimates for shareholders and analysts.

For the ETR control variables, we find that firm size (SIZE) positively affects the ETR tax avoidance measure ($p < 0.01$). Consistent with Lanis and Richardson (2012), our analysis reveals that the regression coefficient for LEV is positive and exhibits a statistically significant association with tax aggressiveness ($p < 0.01$). This finding is consistent with prior research suggesting that corporations with higher levels of leverage are more likely to employ tax-deductible interest payments to facilitate tax aggressiveness within their organization. Also, we observe that the regression coefficient for MVB is negative and significantly associated with tax avoidance ($p < 0.01$).

**Table 6.** The impact of audit quality on tax avoidance.

| | Tax Avoidance (ETR) | | |
|---|---|---|---|
| **VARIABLES** | **(OLS)** | **(RE)** | **(FE)** |
| AUD_FEES | −0.0387 ***<br>(0.382) | −0.0241 **<br>(0.825) | −0.0263 **<br>(0.560) |
| AC Ind | −0.0712 ***<br>(0.0644) | −0.0612 ***<br>(0.00814) | −0.0257 **<br>(0.0709) |
| AC meetings | −0.139 *<br>(0.0254) | −0.304 **<br>(0.0738) | −0.348 *<br>(0.282) |
| Size | 0.805 **<br>(0.319) | 0.726<br>(0.759) | 2.387 ***<br>(0.473) |
| LEV | 0.047 ***<br>(0.421) | 0.0347 *<br>(3.125) | 0.0714 ***<br>(0.535) |
| Growth | 0.668 ***<br>(0.831) | 0.395 **<br>(0.0425) | 0.453 **<br>(0.633) |
| MVB | −0.532 ***<br>(0.103) | −0.180 *<br>(0.154) | −0.196 *<br>(0.128) |
| Constant | −1.365 **<br>(1.236) | −1.668 **<br>(1.581) | −1.37 **<br>(2.083) |
| Std. error adj | Robust Cluster | Robust Cluster | Robust Cluster |
| Industry and Year effect | Included | Included | Included |
| Breusch and Pagan LM test | 2102.97 *** | | |
| Hausman test | | 241.163 *** | |
| Observations | 1815 | 1815 | 1815 |
| R-squared | 27.6 | 32.34 | 28.36 |

Notes: *, **, and *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively. Source: Authors' own creation.

In addition, in the second hypothesis, we aim to investigate whether the role of a female audit committee chair has an impact on the connection between audit quality and corporate tax avoidance. Specifically, we explore the moderating effect of FAC-CHAIR in this context. Our findings are illustrated in Table 7. This study unveils that the connection between audit fees and corporate tax avoidance becomes more pronounced in companies with higher levels of FAC-CHAIR ($p < 0.01$). Our findings align with Saleh et al. (2021), who revealed that firms with a female chairperson of the audit committee request increased audit efforts, even after accounting for self-selection bias and other variables affecting audit fees or auditor selection. In this context, the presence of females on the board stimulates demand for higher audit quality, which helps to restrain managers' opportunistic behavior (Riguen et al., 2020). In return, this promotes openness and responsibility within the firms, leading to ethical choices and boosting the confidence of those involved. In essence, the data displayed in Table 7 reveal that the relationship between audit quality and corporate tax avoidance becomes increasingly pronounced with a higher proportion of female chairpersons on the audit committee. This observation highlights the potential impact of gender diversity within corporate governance structures on tax-related strategies, and it underscores the importance of considering gender dynamics in conversations about audit effectiveness and tax management practices.

**Table 7.** The moderating role of audit committee female chairs on audit quality and tax avoidance.

| | Tax Avoidance (ETR) | | |
|---|---|---|---|
| **VARIABLES** | **(OLS)** | **(RE)** | **(FE)** |
| AUD_FEES | −0.0290 ***<br>(0.416) | −0.0723 **<br>(0.902) | −0.0665 ***<br>(0.612) |
| FAC-CHAIR | −0.0164 ***<br>(0.128) | 0.0466 *<br>(0.394) | 0.0241 *<br>(0.756) |
| FAC-CHAIR*AUD_FEES | −0.0164 ***<br>(0.328) | −0.0792 **<br>(0.612) | −0.0572 *<br>(0.918) |
| AC Ind | −0.0521 ***<br>(0.0278) | −0.0312 ***<br>(0.00914) | −0.0107 **<br>(0.0209) |
| AC meetings | −0.327 *<br>(0.0174) | −0.204 **<br>(0.0938) | −0.288 *<br>(0.182) |
| Size | 0.683 **<br>(0.348) | −0.198 *<br>(0.867) | 0.418 *<br>(0.524) |
| LEV | 0.227 ***<br>(0.342) | 0.751 *<br>(0.496) | 0.239 **<br>(0.290) |
| Growth | 0.371 ***<br>(0.412) | 0.695 **<br>(0.898) | 0.342 **<br>(1.779) |
| MVB | −0.707 ***<br>(0.117) | −0.0891 *<br>(0.183) | −0.459 ***<br>(0.150) |
| Constant | −1.173 **<br>(1.457) | −1.301 **<br>(1.231) | −1.344 **<br>(1.168) |
| Std. error adj | Robust Cluster | Robust Cluster | Robust Cluster |
| Industry and Year effect | Included | Included | Included |
| Breusch and Pagan LM test | 2009.23 *** | | |
| Hausman test | | 198.231 *** | |
| Observations | 1815 | 1815 | 1815 |
| R-squared | 29.73 | 34.09 | 21.07 |

Notes: *, **, and *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively. Source: Authors' own creation

### *4.4. Robustness Check*

The Ordinary Least Squares (OLS) results could potentially be affected by an endogeneity problem, which we mitigate using the heteroskedasticity-based technique introduced by Lewbel (2012). This approach is considered valid, as it has been widely employed in numerous studies to address similar issues (Wongsinhirun et al., 2024). We utilize Lewbel's (2012) heteroscedastic identification method to validate our findings, as presented in Table 8. This method differs from traditional techniques in that it does not depend on instrumental variables. Instead, it relies on heteroskedasticity to achieve identification. This can be achieved without exclusion restrictions, as long as there is a vector of exogenous variables (Z) and the error terms are heteroskedastic. Z can be a subset of the exogenous X variables or even equal to X. In the first stage, each endogenous variable is regressed on Z to generate a vector of residuals ê. These residuals are then used to construct instruments in the form of (Z-Z-bar) ê, where Z-bar is the mean of Z. The identification requires heteroskedastic error terms in the first stage (Lewbel, 2012). Overall, Lewbel (2012) has a detailed discussion of this method, which supports our main results.

**Table 8.** Regression results using Lewbel (2012).

| | Tax Avoidance (ETR) | |
|---|---|---|
| **VARIABLES** | **Lewbel (2012)** | **Lewbel (2012)** |
| AUD_FEES | −0.0843 ***<br>(1.409) | −0.0298 ***<br>(0.485) |
| FAC-CHAIR | - | 0.0284 ***<br>(0.818) |
| FAC-CHAIR*AUD_FEES | - | −0.0723 ***<br>(0.786) |
| AC Ind | −0.0918 *<br>(0.378) | −0.0764 ***<br>(0.218) |
| AC meetings | −0.533 *<br>(0.0271) | −0.372 **<br>(0.0517) |
| Size | 0.189 **<br>(0.923) | 0.734 ***<br>(0.428) |
| LEV | 0.575 **<br>(2.291) | 0.344 ***<br>(2.541) |
| Growth | 0.325 ***<br>(0.172) | 0.453 **<br>(0.258) |
| MVB | −0.298 *<br>(0.154) | −0.710 ***<br>(0.117) |
| Constant | −3.208 ***<br>(2.877) | −2.199 ***<br>(2.345) |
| Observations | 1815 | 1815 |
| R-squared | 19.41 | 22.52 |

Notes: *, **, and *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively. Source: Authors' own creation.

## 5. Conclusions

The purpose of this study is to investigate the effect of audit quality on corporate tax avoidance practices with a moderating role of audit committee female chairpersons. Based on a sample of 165 UK-listed firms over the 2011–2021 period, our finding reveals that audit quality has a negative impact on tax avoidance. Moreover, female chairpersons on audit committees have strengthened the negative relationship between audit quality and tax avoidance. Our results validate the theoretical assertion that the presence of a female on an audit committee enhances its monitoring function concerning financial reporting and auditing matters. Moreover, the UK context offers interesting perspectives, particularly in light of its voluntary approach to promoting gender diversity among corporate boards. As the UK regulatory framework is being enhanced with respect to corporate tax strategies, it becomes particularly pertinent in light of conversations surrounding tax avoidance.

This research delves into the theoretical consequences, practical applications, and policy implications pertaining to the association between audit quality, tax avoidance, and the representation of females on corporate boards and audit committees. Specifically, it examines the potential influence of female audit committees and auditors in curbing corporate tax avoidance in a rapidly changing market setting. The results of this research will be particularly useful to tax policymakers who are struggling with issues related to declining corporate tax revenues.

In practical terms, this study provides useful insights for policymakers concerned with corporate tax avoidance. As governments around the world are tackling declining corporate tax revenues, promoting gender diversity in audit committees and boards could be another tool in the fight against tax avoidance. Diversity may strengthen governance and corporate accountability, so it is an area for regulatory intervention.

Firms may also benefit from having women in leadership roles in audit committees, as our findings show that gender diversity contributes to better governance and plays a big role in reducing unethical financial practices, like tax avoidance. Practitioners and boards of directors should consider promoting diversity not just as a social responsibility but also as a business strategy to improve financial integrity and corporate reputation.

From a theoretical perspective, our study supports the idea that diversity in corporate governance, particularly in audit committees, matters for firm behavior, particularly in financial reporting and tax compliance. Our findings also challenge the traditional view of audit quality by introducing gender diversity as a moderator. This theoretical extension provides a more complete picture of how leadership dynamics, particularly gender, affect corporate governance outcomes.

This study has some limitations that future research could address. It looks at female leadership in audit committees without considering other variables, like Big 4 auditors or audit tenure, which would give a more complete picture. The UK context may not be generalizable, and the analysis is only for a specific time period, so it may have missed long-term trends. Unobservable factors, like leadership styles or governance practices, and other forms of diversity, like educational backgrounds, are not considered. The proxies for tax avoidance may not capture its complexity, and the study design does not allow for causal inferences. Future research could add more variables, contexts, and methods to build on these findings.

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