“Do female audit committee characteristics influence audit fees? Evidence from the UK”

AUTHORS	Naila Amara Saad Bourouis Sajead Mowafaq Alshdaifat Houssam Bouzgarrou Hany Elbardan

ARTICLE INFO	Naila Amara, Saad Bourouis, Sajead Mowafaq Alshdaifat, Houssam Bouzgarrou and Hany Elbardan (2025). Do female audit committee characteristics influence audit fees? Evidence from the UK. *Problems and Perspectives in Management*, *23*(2), 621-633. doi:10.21511/ppm.23(2).2025.45
DOI	http://dx.doi.org/10.21511/ppm.23(2).2025.45
RELEASED ON	Friday, 06 June 2025
RECEIVED ON	Friday, 29 November 2024
ACCEPTED ON	Tuesday, 20 May 2025
LICENSE	This work is licensed under a Creative Commons Attribution 4.0 International License
JOURNAL	"Problems and Perspectives in Management"
ISSN PRINT	1727-7051
ISSN ONLINE	1810-5467
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
49	0	6

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Naila Amara (Tunisia), **Saad Bourouis** (Tunisia), **Sajead Mowafaq Alshdaifat** (Jordan), **Houssam Bouzgarrou** (Tunisia), **Hany Elbardan** (United Kingdom, Egypt, Kuwait)

DO FEMALE AUDIT COMMITTEE CHARACTERISTICS INFLUENCE AUDIT FEES? EVIDENCE FROM THE UK

Received on: 29th of November, 2024
Accepted on: 20th of May, 2025
Published on: 6th of June, 2025

Naila Amara, Ph.D. Candidate, Researcher, Department of Accounting and Finance, Institute of Higher Commercial Studies in Sousse (IHEC), University of Sousse, Tunisia.

Saad Bourouis, Ph.D., Assistant Professor, Department of Accounting and Finance, Institute of Higher Commercial Studies in Sousse (IHEC), University of Sousse, Tunisia.

Sajead Mowafaq Alshdaifat, Ph.D., Assistant Professor, Financial and Accounting Sciences Department, Faculty of Business, Middle East University, Jordan. (Corresponding author)

Houssam Bouzgarrou, Ph.D., Professor, Department of Accounting and Finance, Higher Institute of Finance and Taxation of Sousse, University of Sousse, Tunisia.

Hany Elbardan, Ph.D., Associate Professor, Department of Accounting, Finance and Economics, Bournemouth University Business School, United Kingdom; Accounting and Auditing Department, Faculty of Business, Alexandria University, Egypt; Gulf Financial Center, Gulf University for Science and Technology, Kuwait.

Conflict of interest statement:
Author(s) reported no conflict of interest

Abstract

This study examines the effect of female representation on audit fees in listed UK companies, concentrating on the demographic characteristics of female directors, specifically age and nationality. Using a sample of 165 FTSE 350 companies from 2011 to 2021, generalized least squares regression models are employed to test the link between female audit committee members and audit fees from both the demand and supply sides. The results show a negative relationship between the proportion of females on audit committees and audit fees with a coefficient of –0.2273 ($p < 0.05$). Thus, higher female representation tends to lower audit costs. However, when considering demographic characteristics, the age and nationality of female members have a positive effect on audit costs, with coefficients of 0.0145 ($p < 0.01$) and 0.5546 ($p < 0.01$), respectively. Thus, while gender diversity reduces audit costs overall, experienced (older) female directors and those from diverse national backgrounds may add to audit complexity and, therefore, increase fees. The implications of these findings are relevant to policymakers and corporate governance bodies. Diversity policies should go beyond simple gender quotas. Instead, they should include a broader set of demographic attributes when promoting female representation on audit committees to achieve audit quality and cost efficiency.

Keywords audit fees, audit committee, gender diversity, female, age, nationality, UK

JEL Classification G34, M41, M42, H83

INTRODUCTION

During a period when corporate accountability is falling under growing examination, audit committees are a fundamental pillar to enabling the integrity of financial governance (Onatuyeh et al., 2024). Though regulatory codes like the UK Corporate Governance Code (UKCGC) stress the technical competence of audit committee members at least one of whom must have recent and relevant financial experience (UKCGC, C.3.1; Habbash et al., 2013) the operational effectiveness of such committees remains contentious. Going beyond formal compliance, stakeholders now turn their attention to how audit committee gender diversity composition affects governance performance.

Amendments to the UKCGC (2018) have further highlighted the need for transparent and merit-based appointments to boards, particularly to those concerned with financial management and risk control (Armstrong et al., 2021). The amendments follow increased international recognition that the quality of governance is not merely a structural matter, but a matter of representation and judgment. And for all the discussion of advancement with these reforms, they stop short of gender quotas and instead embrace a voluntary disclosure approach an approach that is subject to the significant questions regarding the actual effect of diversity on audit-related results.

Women's representation on audit committees has been a focus here not only as a matter of equity, but as a potential driver of enhanced audit quality, internal controls, and financial reporting. Its proponents argue that audit committees with gender diversity will be more likely to exert greater control and deter opportunistic managerial actions (Pucheta-Martínez et al., 2016; Zalata et al., 2022). The empirical evidence is inconclusive, especially regarding audit fees a fundamental proxy for audit effort, risk evaluation, and use of resources. While other research demonstrates an insignificant or negative relationship (Ittonen et al., 2010; Velte, 2018), some indicate more significant governance impacts (Ud Din et al., 2021). This paper clears this uncertainty by examining if audit committee gender composition exerts a visible impact on audit fees.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Audit committee attributes and audit fees have been of significant interest in recent years (Alharasis et al., 2023; Azizkhani et al., 2023; Ghafran & O'Sullivan, 2017). The association is primarily viewed as a matter of supply and demand for audit services (Ittonen et al., 2010; Shalhoob, 2024). From the demand side, stringent audit committees, particularly those composed of women members, require more intense audits as they are cautious and risk-averse (Saleh et al., 2021). The result is a higher fee because the external auditors must exert greater effort in fulfilling these elevated expectations (Garcia-Blandon et al., 2023). From the supply side, robust internal controls supported by sound audit committees alleviate external audit efforts and control risk, thereby decreasing audit fees (Alharasis et al., 2022; Nekhili et al., 2020).

There is inconclusive empirical evidence on the impact of women's representation on audit committees on audit fees. Demand-side arguments posit that women audit committee members have stronger ethical standards and are more conscientious in their monitoring function, thereby creating demand for high-quality audits and greater audit fees (Byrne et al., 2021). In support of this opinion, Mnif Sellami and Cherif (2020) discovered a positive relationship between the representation of women audit committees and audit fees in listed Swedish firms. Miglani and Ahmed (2019) also validated that audit efforts enhanced with female members of audit committees and, therefore, the fees, as well because of the higher cost incurred by the external auditors.

On the other hand, studies supporting the supply-side view suggest that female audit committee members increase internal controls, reducing the need for external auditing. Ittonen et al. (2010) found a negative relationship between female representation and audit fees in US firms because auditors perceive less risk in companies with diverse audit committees. Alkebsee et al. (2021) found that female directors of audit committees reduce audit risk and audit fees in Chinese firms. Despite these opposite findings, the role of gender diversity in audit outcomes is still essential, so it is worth focusing on in corporate governance research (Saleh & Maigoshi, 2024; Harakati et al., 2024a; Mansour et al., 2024a).

Besides, nationality diversity is also being recognized as one of the most significant elements of board governance. Multinational boards offer additional expertise, cultural sensitivity, and global insight to the board, thereby enhancing decision-making and governance (Ruigrok et al., 2007; Van Veen & Elbertsen, 2008). In the audit committee setting, women members with diverse national backgrounds introduce cross-cultural knowledge and new problem-solving approaches, which reflect the extent of external auditing.

National diversity is especially pertinent in a globalized world, where firms face complex regulatory and operational challenges. Diversified audit committees can deal with such sophistication by taking advantage of the experience and networks of their members (Harakati et al., 2024b). For instance, audit committee members of various nationalities are more capable of handling multinational operations, cross-border compliance, and international account-

http://dx.doi.org/10.21511/ppm.23(2).2025.45

ing financial reporting standards (Shubita, 2022, 2023). This multinational experience enhances the committee's governance capabilities and influences external audit strategies (Alharasis et al., 2024; Mansour et al., 2024b).

Literature presumes that the nationality diversity of audit committee members results in better monitoring quality, which is in line with the requirement for audit fees. For instance, Mnif Sellami and Cherif (2020) argue that foreign directors of audit committees bring diverse expertise and networks, which enhance governance and lead to increased audit assurance and lower fees. Likewise, Alshabibi et al. (2022) and Harjoto et al. (2019) have discovered that the existence of foreign directors in monitoring and decision-making processes results in improved audit quality and increased fees. Haniffa and Cooke (2002) also align with the discovery that boards that are more culturally diverse are more effective at balancing the interests of various stakeholders and need more elaborate audit procedures to reduce various risk profiles.

Audit committee members are also seen to have higher ethical standards and greater attention to detail, which complement the global mindset of foreign directors (Salhab et al., 2023). Together, they create a more stringent control mechanism, resulting in a greater demand for meticulous audit procedures and higher fees. For instance, García-Blandón et al. (2021) discovered that intersectionality between gender and nationality results in improved financial reporting as well as adherence to international standards, both of which necessitate more comprehensive audits.

Moreover, age diversity on boards and committees has emerged as a fundamental demographic aspect of corporate governance studies (Ab Aziz et al., 2025; Shubita & Alrawashedh, 2023). Older directors are perceived to be more experienced, wise, and conservative in risk management, which can influence the demand for external audit services (Amara et al., 2025a; Bataineh et al., 2023; Abu-AlSondos et al., 2024; Dao et al., 2013). Younger directors would also be viewed as more innovative and ethical, and this would influence their style of monitoring and governance (Hafsi & Turgut, 2013).

For audit committees, older female members would favor high-quality external audits in an attempt to reduce risks, in agreement with the demand side view (Ferrero-Ferrero et al., 2015). Xiang and Qin (2017) found that older female members of audit committees tend to advocate for higher audit quality in order to mitigate risk concerns. Female audit committee members who are relatively younger can emphasize new governance practices and lower audit fees and scope. There is limited empirical evidence on the association between age diversity and audit fees. Mnif Sellami and Cherif (2020) established that older audit committee members are better able to monitor the activities of the board, resulting in better financial reporting quality and greater demand for audit services. Komal et al. (2023) discovered that the accounting knowledge of audit committee members is influenced by age, which in turn affects their ability to detect earnings management and their demand for audit services.

In summary, previous research has shown the importance of gender diversity in corporate governance with mixed results on audit fees. Some studies suggest that female representation improves board effectiveness and reduces risk, while others highlight the complexity introduced by demographic factors such as age and nationality. This study builds on that by incorporating demographic characteristics into the analysis to get a more detailed view of how female audit committee members impact audit pricing. This study extends the literature by identifying the impact of female representation on audit fees in listed UK companies, focusing on the demographic characteristics of female directors (age and nationality).

This study aims to examine how female representation and demographic diversity on audit committees influence audit fees in listed UK companies.

Based on the insights from prior literature, the following hypotheses are proposed:

H1: *There is a negative relationship between female representation on audit committees and audit fees.*

H2: *There is a positive relationship between the nationality diversity of female members on audit committees and audit fees.*

http://dx.doi.org/10.21511/ppm.23(2).2025.45

H3: *There is a positive relationship between the age diversity of female members on audit committees and audit fees.*

2. METHODS

The sample of this study consists of firms that were listed on the FTSE 350 index between 2011 and 2021. There are multiple reasons for selecting this particular time frame. It firstly covers a robust decade of developments in corporate governance amidst responses to significant regulatory changes, such as the era when the UK Corporate Governance Code was revised and the ongoing narrative from the 2008 financial crash, which were to speak of governance in the mid-teens and onwards. Second, it encompasses the Brexit referendum and the early stages of the COVID-19 pandemic, two defining events that challenged firms' resilience and ESG practices, thus providing an interesting context for investigating strategic sustainability and governance dynamics. While newer data are now available, the cut-off date of 2021 was chosen to ensure completeness and comparability of the data as well as for appropriate lag time for post-event outcomes to become apparent. The time frame provides a long enough time horizon to capture meaningful trends, shifts in corporate behavior, and long-term results. Financial firms are excluded as sector-specific regulatory frameworks would obfuscate non-financial firm comparisons. Moreover, firms with missing data on any of the 11 key variables were excluded, yielding a final sample of 165 firms and 1,815 firm-year observations. The financial data were obtained from Thomson Reuters Eikon, and the governance data were manually collected from annual reports, ensuring a high degree of data integrity. The sample selection process and industry distribution are described in Table 1, which mirrors the FTSE 350 composition in general.

Table 1. Sample selection and distribution

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

Industry	Number	Percentage
Real Estate	18	10.90
Consumer Staples	17	10.30
Health Care	9	5.45
Industrials	49	29.70
Technology	9	5.45
Consumer Discretionary	30	18.18
Telecommunications	3	1.82
Basic Materials	14	8.48
Energy	16	9.70
Total sample across industries	**165**	**100%**

2.1. Variable measurement

The dependent variable in this study is audit fees, measured as the natural log of fees paid to external auditors. This is consistent with previous studies (Aldamen et al., 2018; Abbott et al., 2003; Mnif Sellami & Cherif, 2020), where the natural log of audit fees is used as a proxy for audit quality. Therefore, the variable AUD_FEES is defined as a log of audit fees, which reflects the audit effort and complexity of the engagement.

The main independent variables are the gender composition of the audit committee, specifically the proportion of women members, their nationality, and age. To proxy for gender diversity in the audit committee, different proxies are employed as utilized in the literature (Aldamen et al., 2018). These include the number of female audit committee members (the quantity of female audit committee members) and the proportion of females on the audit committee (the proportion of female audit committee members to the total audit committee members. A dummy variable for female representation takes the value of 1 if there is at least one female on the audit committee and 0 otherwise (Ittonen et al., 2010; Mnif Sellami & Cherif, 2020). Next, female members' nationality on audit committees is a relevant factor. A dummy variable is employed, that is 1 if there is a foreign female member in the audit committee and 0 otherwise. The variable captures the possible influence of global thinking and governance that can influence audit procedures and fees. Female audit committee members' age is an experience and maturity measure that impacts decision-making and audit quality (Xiang & Qin, 2017). The variable measures how the age of female directors translates to their need for audit services in terms of experience.

http://dx.doi.org/10.21511/ppm.23(2).2025.45

Audit committee size is the number of directors serving on the audit committee. Larger audit committees can decrease audit fees through increased monitoring effectiveness and ease of communication. Audit committee independence is the percentage of independent non-executive directors on the audit committee out of total members. An increased percentage of independent members will influence the effectiveness of the committee and audit fee. Audit committee expertise is the financial expertise of the audit committee, measured by the percentage of members with financial or audit experience. Increased expertise will decrease audit complexity and fees.

Board size is the total number of directors on the board. Larger boards would be able to bring in more skills and experiences and affect audit demands. Board independence refers to the proportion of independent non-executive directors on the board to the total number of directors. Board independence is crucial for effective governance and oversight. CEO duality is a dummy variable; 1 if the CEO is also the chairman of the board, 0 otherwise. CEO duality may cause conflicts of interest, and as a result, there will be greater risk and monitoring, hence the higher audit fees.

Leverage is the debt ratio of the firm, which is total debt/total assets. Greater leverage implies greater financial risk, which can call for more extensive audits and, hence, higher audit fees. The market-to-book ratio indicates the growth opportunities of the firm. Companies with a higher MTB ratio tend to engage in more sophisticated financial transactions, which require more detailed audits and, consequently, higher fees. The current ratio measures current assets divided by current liabilities. Finally, audit quality 1 if the firm audited by big 4 firms, 0 otherwise.

2.2. Models and estimation method

In this study, the generalized least squares ordinary (GLS) model was used to analyze the data. The proposed regression model includes the interest and control variables. Therefore, here are the basic generalized least squares ordinary (GLS) models.

Based on H1, model (1) is assessed as detailed below:

$$\begin{aligned} AUD\_FEES_{i,t} &= \alpha_0 + \beta_1 PFAC_{i,t} \\ &+ \beta_2 AC\_Size_{i,t} + \beta_3 AC\_IND_{i,t} \\ &+ \beta_4 AC\_Expertise_{i,t} + \beta_5 B\_Size_{i,t} \\ &+ \beta_6 B\_IND_{i,t} + \beta_7 Duality_{i,t} \\ &+ \beta_8 Lev_{i,t} + \beta_9 MTB_{i,t} + \beta_{10} Current\_Ratio_{i,t} \\ &+ \beta_{11} big4_{i,t} + \varepsilon_{i,t}, \end{aligned} \tag{1}$$

According to H2, model (2) is assessed as detailed below:

$$\begin{aligned} AUD\_FEES_{i,t} &= \alpha_0 \\ &+ \beta_1 DFAC\_Nationality_{i,t} + \beta_2 AC\_Size_{i,t} \\ &+ \beta_3 AC\_IND_{i,t} + \beta_4 AC\_Expertise_{i,t} \\ &+ \beta_5 B\_Size_{i,t} + \beta_6 B\_IND_{i,t} + \beta_7 Duality_{i,t} \\ &+ \beta_8 Lev_{i,t} + \beta_9 MTB_{i,t} + \beta_{10} Current\_Ratio_{i,t} \\ &+ \beta_{11} big4_{i,t} + \varepsilon_{i,t}, \end{aligned} \tag{2}$$

Considering H3, model (3) is assessed as detailed below:

$$\begin{aligned} AUD\_FEES_{i,t} &= \alpha_0 + \beta_1 \left(FAC\_Age\right)_{i,t} \\ &+ \beta_2 AC\_Size_{i,t} + \beta_3 AC\_IND_{i,t} \\ &+ \beta_4 AC\_Expertise_{i,t} + \beta_5 B\_Size_{i,t} \\ &+ \beta_6 B\_IND_{i,t} + \beta_7 Duality_{i,t} \\ &+ \beta_8 Lev_{i,t} + \beta_9 MTB_{i,t} + \beta_{10} Current\_Ratio_{i,t} \\ &+ \beta_{11} big4_{i,t} + \varepsilon_{i,t}, \end{aligned} \tag{3}$$

where $AUD\_FEES_{i,t}$ – Audit fees for firm i at time t, α_0 – Intercept, $PFAC_{i,t}$ – Presence of females on the audit committee, $DFAC\_Nationality_{i,t}$ – Diversity in audit committee nationality, $FAC\_Age_{i,t}$ – Average age of audit committee members, $AC\_Size_{i,t}$ – Size of the audit committee, $AC\_IND_{i,t}$ – Proportion of independent members on the audit committee, $AC\_Expertise_{i,t}$ – Proportion of audit committee members with financial expertise, $B\_Size_{i,t}$ – Size of the board of directors, $B\_IND_{i,t}$ – Proportion of independent board members, $Duality_{i,t}$ – CEO duality (1 if CEO is also board chair, 0 otherwise), $Lev_{i,t}$ – Leverage ratio, $MTB_{i,t}$ – Market-to-book ratio, $Current\_Ratio_{i,t}$ – Current assets divided by current liabilities, $Big4_{i,t}$ – Dummy variable (1 if firm is audited by a Big 4 auditor, 0 otherwise), $\varepsilon_{i,t}$ – Error term.

2.3. Descriptive statistics

Table 2 shows the descriptive statistics for the variables in the study. Audit fees (AUD_FEES) range from 2.773 to 14.865, with a mean of 7.304, indicating a significant variation in audit costs. Female representation on audit committees shows variation, with PFAC ranging from 0 to 1 with a mean of 0.346. DFAC_Nationality has a mean of 0.497, so almost half of the audit committees have female members from foreign countries. FAC_Age ranges from 32 to 89, with a mean of 57.168, indicating a significant age distribution. AC_Size ranges from 0 to 8 with a mean of 3.87, so most committees are small. AC_IND is high, with a mean of 94.539. AC_Expertise is also high, with a mean of 0.961. Board characteristics show that board size ranges from 1 to 22 with a mean of 9.279. B_IND is 61.163%. Duality is relatively rare, with a mean of 0.076. Firm financial characteristics reveal that leverage ranges from 0 to 2.698, with a mean of 0.213, suggesting variation in firms' financial risk. MTB ranges from –1191 to 965.690, with a mean of 5.154, showing variation in growth opportunities. Current_Ratio ranges from 0.13 to 29.270 with a mean of 1.68, so there is variation in liquidity. Most firms are audited by the Big Four accounting firms (BIG4), with a mean of 0.977.

Table 2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
AUD_FEES	1,815	7.304	1.386	2.773	14.865
PFAC	1,815	0.346	0.255	0	1
DFAC_Nationality	1,815	0.497	0.500	0	1
FAC_Age	1,815	57.168	7.980	32	89
AC_Size	1,815	3.870	1.182	0	8
AC_IND	1,815	94.539	12.573	0	100
AC_Expertise	1,815	0.961	0.193	0	1
B_Size	1,815	9.279	2.391	1	22
B_IND	1,815	61.163	13.534	0	100
Duality	1,815	0.076	0.265	0	1
Lev	1,815	0.213	0.187	0	2.698
MTB	1,815	5.154	49.792	–1191	965.690
Current_Ratio	1,815	1.680	1.499	0.130	29.270
big4	1,815	0.977	0.151	0	1

Note: AUD_FEES – audit fees; PFAC – number of female audit committee members; DFAC_Nationality – female members' nationality in the audit committee; FAC_Age – age of female members of the audit committee; AC_Size – audit committee size; AC_IND – audit committee independence; AC_Expertise – audit committee expertise; B_Size – board size; B_IND – board independence; Duality – CEO duality; Lev – leverage; MTB – market-to-book ratio; Current_Ratio – current ratio; big4 – Big4 firm.

2.4. Correlation matrix

A Pearson correlation matrix was run for the variables in this study to check for multicollinearity among the independent variables (Table 3). All the correlation coefficients are below 0.8, the thresh-

Table 3. Pearson correlation

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AUD_FEES	1													
PFAC	0.073*	1												
DFAC_Nationality	0.299*	–0.062*	1											
FAC_Age	0.118*	0.058	0.059*	1										
AC_Size	0.149*	–0.072*	0.134*	0.017	1									
AC_IND	0.098*	0.025	0.071*	0.021	–0.039	1								
AC_Expertise	0.008	0.119*	0.000	0.013	0.138*	–0.033	1							
B_Size	0.495*	0.024	0.098*	–0.003	0.330*	–0.008	0.139*	1						
B_IND	0.363*	0.166*	0.161*	0.046	0.108*	0.384*	0.042	0.074*	1					
Duality	–0.210*	–0.032	–0.080*	0.086*	–0.039	0.027	–0.013	–0.079*	–0.196*	1				
Lev	0.123*	0.094*	0.052*	–0.040	0.069*	–0.083*	0.020	0.144*	–0.007	–0.125*	1			
MTB	–0.115*	–0.007	–0.009	–0.054	–0.034	0.018	0.014	–0.040	–0.019	0.010	–0.009	1		
Current_Ratio	–0.113*	–0.083*	–0.032	0.125*	–0.047	0.018	0.022	–0.128*	–0.120*	0.230*	–0.211*	–0.017	1	
big4	0.085*	0.002	0.057*	–0.041	.014	0.174*	–0.030	0.126*	0.022	0.044	–0.089*	0.014	0.041	1

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. AUD_FEES – audit fees; PFAC – number of female audit committee members; DFAC_Nationality – female members' nationality in the audit committee; FAC_Age – age of female members of the audit committee; AC_Size – audit committee size; AC_IND – audit committee independence; AC_Expertise – audit committee expertise; B_Size – board size; B_IND – board independence; Duality – CEO duality; Lev – leverage; MTB – market-to-book ratio; Current_Ratio – current ratio; big4 – Big4 firm.

http://dx.doi.org/10.21511/ppm.23(2).2025.45

old for multicollinearity. In fact, all are below 0.5, so the independent variables are independent of each other. Therefore, no multicollinearity and all variables will be included in the regression.

Besides the correlation matrix, Variance Inflation Factors (VIFs) were calculated for each model to check for multicollinearity. All VIFs are less than 10 (Table 4), so no multicollinearity. To check for heteroscedasticity in the data, this study used the Breusch-Pagan/Cook-Weisberg test. The results show that heteroscedasticity is present in all three models, but the p-values are slightly different across models (Model 1: chi2(1) = 2.34, p > chi2 = 0.1261; Model 2: chi2(1) = 0.03, p > chi2 = 0.8673; Model 3: chi2(1) = 0.69, p > chi2 = 0.4074). Finally, to check for autocorrelation, this study employed the Wooldridge test, which revealed that all three models exhibit significant autocorrelation (Prob > F = 0.0000). Given these results, the Generalized Least Squares (GLS) estimation method was used, as it is robust to heteroscedasticity and autocorrelation in the error terms, thus get more accurate regression results.

Table 4. Variance inflation factors (VIF)

Variables	MODEL 1	MODEL 2	MODEL 3
PFAC	1.068	–	–
DFAC_Nationality	–	1.137	–
FAC_Age	–	–	1.033
AC_Size	1.137	1.121	1.110
AC_IND	1.215	1.224	1.203
AC_Expertise	1.043	1.011	1.009
B_SIZE	1.186	1.368	1.194
B_IND	1.322	1.209	1.288
Duality	1.121	1.087	1.088
Lev	1.141	1.169	1.166
MTB	1.005	1.007	1.011
Current_Ratio	1.134	1.117	1.135
Big4	1.065	1.101	1.096
Mean Vif	1.131	1.141	1.121

Note: AUD_FEES – audit fees; PFAC – number of female audit committee members; DFAC_Nationality – female members' nationality in the audit committee; FAC_Age – age of female members of the audit committee; AC_Size – audit committee size; AC_IND – audit committee independence; AC_Expertise – audit committee expertise; B_Size – board size; B_IND – board independence; Duality – CEO duality; Lev – leverage; MTB – market-to-book ratio; Current_Ratio – current ratio; big4 – Big4 firm.

3. RESULTS

Table 5 shows the regression results for the impact of female audit committee characteristics on audit fees. Three models are run: Model 1 looks at the proportion of females on the audit committee (PFAC), Model 2 checks the nationality of female members on the audit committee (DFAC_Nationality), and Model 3 tests the average age of female audit committee members (FAC_Age) and audit fees.

Model 1 examines how the percentage of female members on the audit committee (PFAC) affects audit fees (AUD_FEES). The results show a significant negative relationship between PFAC and audit fees (coefficient = −0.2273, $p < 0.05$). Thus, H1 Supported. This indicate that more diverse audit committee with more female representation means lower audit fees. This finding is consistent with the supply-side view that female directors enhance internal monitoring, reduce audit risk, and decrease the need for external auditors. Adams and Baker (2021) and Nekhili et al. (2020) support this argument, showing that firms with female directors on the audit committee have stronger internal controls and better financial reporting, which reduces the need for external audits. Alkebsee et al. (2021) and Garcia-Blandon et al. (2023) found that firms with female CFOs or female members on the audit committee have lower audit fees due to reduced audit risks. However, Lai et al. (2017) found the opposite results; boards with female directors demand higher audit quality, which would lead to higher audit fees, supporting the demand-side view.

In contrast, Model 2 and Model 3 show different results. Model 2 examines the impact of female members' nationality on the audit committee (DFAC_Nationality) and reveals a positive and significant relationship with audit fees (0.5546, $p < 0.01$). Therefore, H2 Supported. This highlights that audit committees with female members from different nationalities have higher audit fees. Including foreign nationals may add complexity and cost to auditing international operations, which supports the demand side.

Model 3 examines the impact of the age of female audit committee members (FAC_Age) on audit fees. The results show a positive and significant relationship (0.0145, $p < 0.01$). Hence, H3 Supported. Suggesting that older female directors on the audit committee are associated with higher audit fees. Older committee members may bring more experience and expertise to the table, leading to more complex audit requirements, which in turn result in higher fees.

Increasing the proportion of female directors on the audit committee can improve internal controls, reduce audit risk, and lower audit fees. However, the nationality diversity of female directors leads to higher audit fees due to the added complexity of auditing international operations, so firms should consider the additional costs when adding foreign female members to their audit committee. Older female directors with more experience and expertise may command higher fees as more complex audits are required. While this brings value, companies must balance the benefits of experienced directors with the costs.

Table 5. Results of GLS regression analysis

Variables	Model (1) PFAC	Model (2) DFAC_ Nationality	Model (3) FAC_Age
PFAC	–0.2273** (0.1069)	–	–
DFAC_Nationality	–	0.5546*** (0.0585)	–
FAC_Age	–	–	0.0145*** (0.0038)
AC_size	–0.0609** (0.0257)	–0.0566** (0.0268)	–0.0329 (0.0272)
AC_IND	–0.0054** (0.0024)	–0.0051* (0.0029)	–0.0037 (0.0028)
AC_Expertise	–0.4786*** (0.1475)	–0.5535*** (0.1613)	–0.3934* (0.2124)
B_Size	0.2894*** (0.0128)	0.2628*** (0.0143)	0.2805*** (0.0148)
B_IND	0.0319*** (0.0023)	0.0292*** (0.0026)	0.0335*** (0.0027)
Duality	–0.3842*** (0.1032)	–0.3792*** (0.1125)	–0.3258*** (0.1183)
Lev	1.4118*** (0.1821)	1.6159*** (0.2107)	1.3692*** (0.2041)
MTB	–0.0025*** (0.0005)	–0.0023*** (0.0005)	–0.0022*** (0.0005)
Curent Ratio	0.0277 (0.0174)	0.0037 (0.0193)	–0.0264 (0.0228)
Big4	0.3973** (0.1854)	0.6436*** (0.2103)	0.4093* (0.2117)
Constant	3.4366*** (0.3133)	3.2842*** (0.3596)	2.2029*** (0.4395)
Observations	1,815	1,815	1,815
R–squared	27.36	23.51	29.69

Note: ***, **, and * represent significance at 1, 5, and 10% levels, respectively. AUD_FEES = audit fees; PFAC = number of female audit committee members; DFAC_Nationality = female members' nationality in the audit committee; FAC_Age = age of female members of the audit committee; AC_Size = audit committee size; AC_IND = audit committee independence; AC_Expertise = audit committee expertise; B_Size = board size; B_IND = board independence; Duality = CEO duality; Lev = leverage; MTB = market-to-book ratio; Current_Ratio = current ratio; big4 = Big4 firm.

Endogeneity is a significant concern in corporate governance research, especially when there is reverse causality between key variables. This study used a two-stage least squares (2SLS) regression model following Alkebsee et al. (2021) to address this issue. This helps to minimize bias caused by endogeneity, especially reverse causality between female representation on audit committees and audit fees. 2SLS was used to ensure the results are robust and reliable, as shown in Table 6. An essential step in addressing endogeneity is to identify an instrumental variable (IV) that affects the decision to appoint female directors to the audit committee without directly affecting audit fees. This study uses two IVs: the experience of female members on the audit committee and female chairpersons on the committee. These variables are strongly related to the likelihood of appointing women but have no direct connection to audit fees. The assumption that the instruments are exogenous is tested, meaning they are not associated with the error terms in the model. The results point that this assumption cannot be rejected; therefore, these instruments are valid, and the model is well-specified. This confirms the results and ensures that endogeneity has not biased this analysis.

Table 6. Results of 2SLS regression

Variables	2SLS regression		
	Model 1	Model 2	Model 3
PFAC	–0.1709***	–	–
	(0.4325)		
DFAC_Nationality	–	0.3379***	–
		(0.0456)	
FAC_Age	–	–	0.0462***
			(0.0035)
AC_size	–0.1176***	–0.0618**	–0.0343
	(0.0329)	(0.0272)	(0.0263)
AC_IND	–0.0092***	–0.0048*	–0.0029
	(0.0031)	(0.0026)	(0.0027)
AC_Expertise	0.0504	–0.5231***	–0.3919*
	(0.1974)	(0.1602)	(0.2136)
B_Size	0.2981***	0.2719***	0.2789***
	(0.0159)	(0.0135)	(0.0144)
B_IND	0.0416***	0.0324***	0.0318***
	(0.0032)	(0.0023)	(0.0026)
Duality	–0.3181**	–0.3125***	–0.3173**
	(0.1284)	(0.1114)	(0.1167)
Lev	0.8894***	0.6267***	0.3494***
	(0.2356)	(0.1310)	(0.1482)

http://dx.doi.org/10.21511/ppm.23(2).2025.45

Table 6 (cont.). Results of 2SLS regression

Variables	2SLS regression		
	Model 1	Model 2	Model 3
MTB	−0.0026***	−0.1021***	−0.722***
	(0.0016)	(0.135)	(0.205)
Current_Ratio	0.0026	0.0054	−0.0257
	(0.0219)	(0.0192)	(0.0223)
big4	0.4541**	0.5982***	0.4235*
	(0.2302)	(0.2068)	(0.2187)
Constant	3.7605***	1.2681***	1.817***
	(0.1914)	(0.3487)	(0.4281)
Observations	1,815	1,815	1,815
R–squared	14.77	21.47	27.01

Note: ***, **, and * represent significance at 1, 5, and 10% levels, respectively. AUD_FEES = audit fees; PFAC = number of female audit committee members; DFAC_Nationality = female members' nationality in the audit committee; FAC_Age = age of female members of the audit committee; AC_Size = audit committee size; AC_IND = audit committee independence; AC_Expertise = audit committee expertise; B_Size = board size; B_IND = board independence; Duality = CEO duality; Lev = leverage; MTB = market-to-book ratio; Current_Ratio = current ratio; big4 = Big4 firm.

4. DISCUSSION

This study adds to the gender diversity in the corporate governance debate by showing the complex relationship between female audit committee characteristics and audit fees. Specifically, the results show that while female representation in the audit committee is associated with lower audit costs, the diversity in age and nationality among female members is countervailing, resulting in higher audit fees. This is consistent with and builds on prior literature that highlights the importance of demographic attributes beyond mere gender representation. From an agency theory perspective, the negative relationship between female representation and audit fees suggests that gender-diverse audit committees may enhance monitoring efficiency, reducing agency costs and, thus, audit fees (Alshdaifat et al., 2025; Alharasis et al., 2023; Azizkhani et al., 2023). Female directors are often associated with higher levels of diligence and ethical decision-making, which can lead to better financial oversight and reduced perceived risk by auditors (Saleh et al., 2021). This finding is consistent with previous studies that suggest diverse governance structures can lead to cost efficiencies in auditing by reducing information asymmetry and improving financial reporting quality (Ghafran & O'Sullivan, 2017). However, the positive relationship between nationality and age diversity between female audit committee members and audit fees suggests an alternative dimension to the governance-audit cost link. From a resource dependence theory perspective, diverse audit committees bring different perspectives and expertise which can enhance the decision-making process but may also increase audit complexity. Nationality diversity introduces cross-cultural variations in risk perception and regulatory interpretations and requires more audit procedures (Haniffa & Cooke, 2002). Similarly, age diversity may reflect differences in professional experience and perspectives on financial reporting risks, which may lead to more rigorous audit demands and, consequently, higher fees (Shubita & Alrawashedh, 2023). These findings are consistent with studies that argue diversity increases the need for more audit effort due to different viewpoints and risk aversion levels (Ittonen et al., 2010; Alharasis et al., 2024). Moreover, the role of nationality diversity is more significant in a globalized world where firms face complex regulatory and operational challenges. Diverse audit committees with members from different nationalities are better equipped to navigate cross-border compliance and international financial reporting standards (Shubita, 2023). The diversity in cultural backgrounds brings in a wider scope of expertise, which enhances governance and leads to better audit quality and higher fees (Mansour et al., 2024b). The age diversity in the study also highlights how demographic factors affect audit fees. Older female members tend to prefer high-quality external audits due to their experience and risk-averse nature, which is consistent with the demand side view (Ferrero-Ferrero et al., 2015; Xiang & Qin, 2017). Younger female members, on the other hand, may prefer innovative governance practices, which leads to lower audit fees (Hafsi & Turgut, 2013).

CONCLUSION

This study aimed to examine the impact of female representation on audit fees in listed UK companies, focusing on the demographic characteristics of female directors (age and nationality). By analyzing data from 165 FTSE 350 firms over an 11-year period (2011–2021) using GLS and 2SLS regression models, the results show that increased female representation on the audit committee is associated with lower audit fees. Furthermore, female-diverse audit committees improve internal controls and reduce audit costs. However, having foreign female directors on the audit committee is associated with higher audit fees, possibly due to cross-border operations. Older female directors also contribute to higher audit fees, probably because they have more experience and higher oversight.

These findings offer important insights into the role of gender diversity on audit committees and its implications for audit fees. Policymakers and regulators may leverage these results to promote corporate governance, as gender-diverse audit committees can improve financial reporting quality and audit costs. Moreover, this study contributes to the growing literature on gender diversity in corporate governance by incorporating demographic factors such as age and nationality, providing a more nuanced understanding of their effects on audit fees.

Despite its contributions, this study has some limitations. The dataset is limited to the period ending in 2021, necessitating future research with more recent data to validate these findings. Additionally, the quantitative approach, while robust, could be complemented by qualitative methods such as interviews further to explore the dynamics of gender diversity on audit committees. Future studies may also broaden the scope to cover other diversity dimensions, such as ethnicity and educational background, to better understand the involvement of diversity in corporate governance.

AUTHOR CONTRIBUTIONS

Conceptualization: Naila Amara, Houssam Bouzgarrou, Sajead Mowafaq Alshdaifat, Saad Bourouis, Hany Elbardan.
Data curation: Naila Amara, Sajead Mowafaq Alshdaifat.
Formal analysis: Naila Amara, Sajead Mowafaq Alshdaifat, Saad Bourouis.
Investigation: Naila Amara, Saad Bourouis, Hany Elbardan.
Methodology: Naila Amara, Sajead Mowafaq Alshdaifat.
Project administration: Naila Amara, Saad Bourouis.
Supervision: Saad Bourouis, Houssam Bouzgarrou.
Validation: Hany Elbardan, Saad Bourouis, Houssam Bouzgarrou.
Visualization: Houssam Bouzgarrou, Sajead Mowafaq Alshdaifat.
Writing – original draft: Naila Amara, Houssam Bouzgarrou, Sajead Mowafaq Alshdaifat, Saad Bourouis, Hany Elbardan.
Writing – review & editing: Naila Amara, Houssam Bouzgarrou, Sajead Mowafaq Alshdaifat, Saad Bourouis, Hany Elbardan.

ACKNOWLEDGMENT

This study received full funding from the Middle East University, Amman, Jordan.

REFERENCES

1. Ab Aziz, N. H., Alshdaifat, S. M., & Al Amosh, H. (2025). ESG controversies and firm performance in ASEAN: Do board gender diversity and sustainability committee matter? *Business Strategy & Development, 8*(1), Article e70094. https://doi.org/10.1002/bsd2.70094
2. Abbott, L. J., Parker, S., Peters, G.F., & Raghunandan, K. (2003). The association between audit committee characteristics and audit fees. *AUDITING: A Journal of Practice & Theory, 22*(2), 17-32. https://doi.org/10.2308/aud.2003.22.2.17
3. Abu-AlSondos, I. A., Alkhwaldi, A. F., Shehadeh, M., Ali, B. J. A., & Al Nasar, M. R. (2024). The role of Industry 4.0 technologies in enabling knowledge management practices: United Arab Emirates perspective. In A. M. A. Musleh Al-Sartawi, M. Helmy Abd Wahab, & K. Hussainey (Eds.), *Global Economic Revolutions: Big Data Governance and Business Analytics for Sustainability* (pp. 145-156).

http://dx.doi.org/10.21511/ppm.23(2).2025.45

Cham: Springer. https://doi.org/10.1007/978-3-031-50518-8_12

4. Adams, M., & Baker, P. L. (2021). Does boardroom nationality affect the performance of UK insurers? *British Accounting Review, 53*(5). https://doi.org/10.1016/j.bar.2020.100923

5. Aldamen, H., Hollindale, J., & Ziegelmayer, J. L. (2018). Female audit committee members and their influence on audit fees. *Accounting and Finance, 58*(1), 57-89. https://doi.org/10.1111/acfi.12248

6. Alharasis, E. E., Alidarous, M., & Jamaani, F. (2023). Auditor industry expertise and external audit prices: empirical evidence from Amman Stock Exchange-listed companies. *Asian Journal of Accounting Research, 8*(1), 94-107. https://doi.org/10.1108/AJAR-02-2022-0051

7. Alharasis, E. E., Marei, A., Almakhadmeh, A. A. R., Abdullah, S., & Lutfi, A. (2024). An evaluation of financial statement quality in pre-versus post-IFRS-7 implementation: The case of Iraqi banking industry. *Discover Sustainability, 5*(1), Article 277. https://doi.org/10.1007/s43621-024-00487-w

8. Alharasis, E. E., Tarawneh, A. S., Shehadeh, M., Haddad, H., Marei, A., & Hasan, E. F. (2022). Reimbursement costs of auditing financial assets measured by fair value model in Jordanian financial firms' annual reports. *Sustainability, 14*(17), Article 10620. https://doi.org/10.3390/su141710620

9. Alkebsee, R. H., Tian, G.-L., Usman, M., Siddique, M. A., & Alhebry, A. A. (2021). Gender diversity in audit committees and audit fees: Evidence from China. *Managerial Auditing Journal, 36*(1), 72-104. https://doi.org/10.1108/MAJ-06-2019-2326

10. Alshabibi, B., Pria, S., & Hussainey, K. (2022). Nationality diversity in corporate boards and tax avoidance: Evidence from Oman. *Administrative Sciences, 12*(3). https://doi.org/10.3390/admsci12030111

11. Alshdaifat, S. M., Alharasis, E. E., Ab Aziz, N. H., Bataineh, I., & Al Amosh, H. (2025). Governance in crisis: Do different types of ownership influence firm performance in GCC countries amid Covid-19? *Cogent Business & Management, 12*(1), Article 2463576. https://doi.org/10.1080/23311975.2025.2463576

12. Amara, N., Bourouis, S., Alshdaifat, S. M., Bouzgarrou, H., & Al Amosh, H. (2025a). The impact of audit quality and female audit committee characteristics on earnings management: Evidence from the UK. *Journal of Risk and Financial Management, 18*(3), Article 136. https://doi.org/10.3390/jrfm18030136

13. Armstrong, S., Mclaughlin, C., Moustafa, M., & Elamer, A.A. (2021). Audit committee diversity and corporate scandals: Evidence from the UK. *International Journal of Accounting and Information Management*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3903732

14. Azizkhani, M., Hossain, S., & Nguyen, M. (2023). Effects of audit committee chair characteristics on auditor choice, audit fee and audit quality. *Accounting and Finance, 63*(3), 3675-3707. https://doi.org/10.1111/acfi.13058

15. Bataineh, A., Abu-AlSondos, I., Idris, M., Mushtaha, A., & Qasim, D. (2023). The role of big data analytics in driving innovation in digital marketing. *2023 9th International Conference on Optimization and Applications (ICOA)*. Abu Dhabi, United Arab Emirates. https://doi.org/10.1109/ICOA58279.2023.10308854

16. Byrne, A., Chadwick, I. C., & Hancock, A. J. (2021). Women leaders' views on demand-side strategies. *Journal of Managerial Psychology, 36*(1), 31-50. https://doi.org/10.1108/JMP-03-2019-0155

17. Dao, M., Huang, H. W., & Zhu, J. (2013). The effects of audit committee members' age and additional directorships on the cost of equity capital in the USA. *European Accounting Review, 22*(3), 607-643. https://doi.org/10.1080/09638180.2012.739823

18. Ferrero-Ferrero, I., Fernández-Izquierdo, M. Á., & Muñoz-Torres, M. J. (2015). Age diversity: An empirical study in the board of directors. *Cybernetics and Systems, 46*(3-4), 249-270. http://dx.doi.org/10.1080/01969722.2015.1012894

19. García Blandón, J., Castillo-Merino, D., Argilés Bosch, J. M., & Ravenda, D. (2021). Mandatory joint audit and audit quality in the context of the European blue chips. *Business Economics and Management (JBEM), 22*(5), 1378-1395. Retrieved from https://hdl.handle.net/10419/317528

20. Garcia-Blandon, J., Argilés-Bosch, J.M., Ravenda, D., & Castillo-Merino, D. (2023). Women leading the audit process and audit fees: A European study. *European Research on Management and Business Economics, 29*(1). https://doi.org/10.1016/j.iedeen.2022.100206

21. Ghafran, C., & O'Sullivan, N. (2017). The impact of audit committee expertise on audit quality: Evidence from UK audit fees. *British Accounting Review, 49*(6), 578-593. https://doi.org/10.1016/j.bar.2017.09.008

22. Habbash, M., Sindezingue, C., & Salama, A. (2013). The effect of audit committee characteristics on earnings management: Evidence from the United Kingdom. *International Journal of Disclosure and Governance, 10*(1), 13-38. https://doi.org/10.1057/jdg.2012.2

23. Hafsi, T., & Turgut, G. (2013). Boardroom diversity and its effect on social performance: Conceptualization and empirical evidence. *Journal of Business Ethics, 112*(3), 463-479. https://doi.org/10.1007/s10551-012-1272-z

24. Haniffa, R. M., & Cooke, T. E. (2002). Culture, corporate governance and disclosure in Malaysian corporations. *Abacus, 38*(3), 317-349. https://doi.org/10.1111/1467-6281.00112

25. Harakati, R., Ghazouani, I., & Hlioui, Z. (2024a). CEO gender and climate change commitment: The mediating effect of environmental regulation perception. *Corporate Social Responsibility and Environmental Management,*

31(5), 4630-4650. https://doi.org/10.1002/csr.2809

26. Harakati, R., Ghazouani, I., & Hlioui, Z. (2024b). Investigating environmental prioritization: role of financial resources and female entrepreneurship in the Mediterranean region. *EuroMed Journal of Business*. http://dx.doi.org/10.1108/EMJB-09-2023-0254
27. Harjoto, M. A., Laksmana, I., & Yang, Y. W. (2019). Board nationality and educational background diversity and corporate social performance. *Corporate Governance: The International Journal of Business in Society, 19*(2), 217-239. https://doi.org/10.1108/CG-04-2018-0138
28. Ittonen, K., Vähämaa, S., & Miettinen, J. (2010). Does female representation on audit committees affect audit fees? *Quarterly Journal of Finance and Accounting, 49*(3-4), 113-139. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1314243
29. Komal, B., Bilal, Ezeani, E., Shahzad, A., Usman, M., & Sun, J. (2023). Age diversity of audit committee financial experts, ownership structure and earnings management: Evidence from China. *International Journal of Finance & Economics, 28*(3), 2664-2682. https://doi.org/10.1002/ijfe.2556
30. Lai, K. M. Y., Srinidhi, B., Gul, F.A., & Tsui, J.S.L. (2017). Board gender diversity, auditor fees, and auditor choice. *Contemporary Accounting Research, 34*(3), 1681-1714. https://doi.org/10.1111/1911-3846.12313
31. Mansour, M., Al Zobi, M. T., Altawalbeh, M., Abu Alim, S., Lutfi, A., Marashdeh, Z., & Al Barrak, T. (2024a). Female leadership and environmental innovation: Do gender boards make a difference? *Discover Sustainability, 5*(1), Article 331. https://doi.org/10.1007/s43621-024-00545-3
32. Mansour, M., Shubita, M. F., Lutfi, A., Saleh, M. W., & Saad, M. (2024b). Female CEOs and green innovation: Evidence from Asian firms. *Sustainability, 16*(21), Article 9404. https://doi.org/10.3390/su16219404
33. Miglani, S., & Ahmed, K. (2019). Gender diversity on audit committees and its impact on audit fees: Evidence from India. *Accounting Research Journal, 32*(4), 568-586. https://doi.org/10.1108/ARJ-01-2018-0001
34. Mnif Sellami, Y., & Cherif, I. (2020). Female audit committee directorship and audit fees. *Managerial Auditing Journal, 35*(3), 398-428. https://doi.org/10.1108/MAJ-12-2018-2121
35. Nekhili, M., Gull, M.A., Chtioui, T., & Radhouane, I. (2020). Gender-diverse boards and audit fees: What difference does gender quota legislation make? *Journal of Business Finance & Accounting, 47*(1-2), 52-99. https://doi.org/10.1111/jbfa.12409
36. Onatuyeh, E., Aniefor, S., Orife, C., Ogbolu, L., & Osevwe-Okoroyibo, E. (2024). The impact of auditor attributes and firm size on financial reporting timeliness of listed firms. *Investment Management and Financial Innovations, 21*(4), 116-127. https://doi.org/10.21511/imfi.21(4).2024.10
37. Pucheta-Martínez, M. C., Bel-Oms, I., & Olcina-Sempere, G. (2016). Corporate governance, female directors and quality of financial information. *Business Ethics, the Environment & Responsibility, 25*(4), 363-385. https://doi.org/10.1111/beer.12123
38. Ruigrok, W., Peck, S., & Tacheva, S. (2007). Nationality and gender diversity on Swiss corporate boards. *Corporate Governance: An International Review, 15*(4), 546-557. https://doi.org/10.1111/j.1467-8683.2007.00587.x
39. Saleh, M. W., & Maigoshi, Z. S. (2024). The nexus of ESG and environmental sustainability: Does gender diversity make a difference in Asian companies? *Environment, Development and Sustainability*. Retrieved from https://link.springer.com/article/10.1007/s10668-024-04498-5
40. Saleh, M. W., Zaid, M. A., Shurafa, R., Maigoshi, Z. S., Mansour, M., & Zaid, A. (2021). Does board gender enhance Palestinian firm performance? The moderating role of corporate social responsibility. *Corporate Governance: The International Journal of Business in Society, 21*(4), 685-701. https://doi.org/10.1108/CG-08-2020-0325
41. Salhab, H., Allahham, M., Abu-AlSondos, I., Frangieh, R., Alkhwaldi, A., & Ali, B. (2023). Inventory competition, artificial intelligence, and quality improvement decisions in supply chains with digital marketing. *Uncertain Supply Chain Management, 11*(4), 1915-1924. https://doi.org/10.5267/j.uscm.2023.8.009
42. Shalhoob, H. (2024). Impact of auditor characteristics on audit quality during COVID-19: Evidence from Saudi Arabia. *Problems and Perspectives in Management, 22*(4), 138-148. https://doi.org/10.21511/ppm.22(4).2024.11
43. Shubita, M., & Alrawashedh, N. H. (2023). Corporate governance components and intellectual capital: Evidence from Jordanian banks. *Investment Management and Financial Innovations, 20*(4), 272-282. https://doi.org/10.21511/imfi.20(4).2023.22
44. Shubita, M. F. (2022). Intellectual capital and industrial firms' growth: Evidence from Jordanian manufacturing listed firms. *Problems and Perspectives in Management, 20*(3), 325-334. http://dx.doi.org/10.21511/ppm.20(3).2022.26
45. Ud Din, N., Chenga, X., Ahmad, B., Sheikh, M. F., Adedigba, O. G., Zhao, Y., & Nazneen, Sh. (2021). Gender diversity in the audit committee and the efficiency of internal control and financial reporting quality. *Economic Research-Ekonomska Istrazivanja, 34*(1), 1170-1189. https://doi.org/10.1080/1331677X.2020.1820357
46. Van Veen, K., & Elbertsen, J. (2008). Governance regimes and nationality diversity in corporate boards: A comparative study of Germany, the Netherlands and the United Kingdom. *Corporate Governance: An International Review, 16*(5), 386-399. https://doi.org/10.1111/j.1467-8683.2008.00698.x

http://dx.doi.org/10.21511/ppm.23(2).2025.45

47. Velte, P. (2018). Does gender diversity in the audit committee influence key audit matters' readability in the audit report? UK evidence. *Corporate Social Responsibility and Environmental Management, 25*(5), 748-755. https://doi.org/10.1002/csr.1491

48. Xiang, R., & Qin, M. (2017). Female audit committee member's characteristics and high quality external audit demand. In J. Xu, A. Hajiyev, S. Nickel, & M. Gen (Eds.), *Proceedings of the Tenth International Conference on Management Science and Engineering Management* (pp. 857-870). Singapore: Springer. https://doi.org/10.1007/978-981-10-1837-4_71

49. Zalata, A. M., Ntim, C. G., Alsohagy, M. H., & Malagila, J. (2022). Gender diversity and earnings management: The case of female directors with financial background. *Review of Quantitative Finance and Accounting, 58*(1), 101-136. https://doi.org/10.1007/s11156-021-00991-4