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ORIGINAL ARTICLE

A comparative study of the relationship between audit quality and earnings management in the markets of Iraq and Oman

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ABSTRACT

The present study investigates the relationship between audit quality and earnings management in banks listed on the Stock Exchange of Iraq and Oman. This paper used audit firm size, auditors' industry expertise, audit report timeliness, auditor change, and auditors' opinions to measure audit quality. Financial statements, notes attached to financial statements, and reports of independent auditors of 28 banks listed on the Iraqi Stock Exchange and 8 banks listed on the Oman Stock Exchange during the financial period of 7 years (2015 to 2021), and hypotheses were tested using EViews software and panel data. The results of the hypothesis testing showed no significant relationship between the firm size and the auditors' change and earnings management for both countries (Iraq and Oman). This is while the relationship between the auditor's industry expertise, the timely presentation of the audit report, and the auditor's opinion and earnings management for both countries (Iraq and Oman) is negative.

KEYWORDS

independent audit quality; earnings management; audit committee

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1. Introduction

Financial statements result from the accounting process and are essential in a firm's performance evaluation (Muslim et al., 2019). Since disclosed profits are among the most critical and influential financial statements, they significantly influence the performance evaluation process, business activities, administrative decisions, and investment decisions (Awuye, 2022). The term earnings management refers to the fact that managers manipulate earnings to present a misleading picture of the company's financial condition to achieve some desirable goals (Strakova, 2021), such as preventing losses, meeting market expectations, avoiding violations of debt covenant, and other motivations (Strakova, 2021). Earnings management, on the one hand, damages the quality of earnings and, on the other hand, misleads users of financial reports. The financial scandals that have occurred in the past in advanced countries such as the United States of America and the United Kingdom have raised awareness of the need for transparency among stakeholders alike, increasing credibility to protect shareholders (Kwarbai and Osho, 2021), as well as ensuring the preservation

of the correctness of financial reports; because it is an essential source of information, the misuse of which may harm the parties involved in decision-making (Lannai et al., 2021). Earnings management is one of the most critical challenges of monitoring mechanisms that seek to solve the negative impact on financial reporting (Jaggi and Tsui, 2007).

The efforts to limit earnings management practices, even in developed countries, have not provided sufficient assurance that financial reporting is free from earnings management (Pornupatham, 2006). Due to the existence of a space in front of the preparers of financial statements and considering the freedom to choose from among the existing accounting policies and methods within the scope of international financial reporting standards, the management has more discretion in determining appropriate methods and policies to disclose profits that are suitable for their goals (Toumeh and Yahya, 2019). In this case, stock investors, creditors, suppliers, and customers are among the most prominent victims (Al-Ta'amneh, 2019). Investor confidence mainly depends on the strength of the capital market and various monitoring mechanisms, including external auditing (Chang and Sun, 2009). Employing external independent auditors as a monitoring and controlling mechanism is considered a fundamental requirement to ensure the reliability of the corporate governance structure, which may prevent fraud commitment and earning manipulation and increase the reliability of financial statements (Almasria, 2022). The demand for audit services stems from the separation between shareholder (owner) and manager (agent), which may lead to two critical things, including (1) the inconsistency of information between owners and agents; and (2) the opportunistic behavior of managers (Almasria, 2018). The agency theory shows a contradictory relationship between the owner and manager, which can lead to a conflict of interest because each party tries to maximize their interests. Therefore, one of the most important financial domains that need to be fully considered by professional practitioners and academic bodies is creative accounting, which might be implemented by earning management procedures, particularly in emerging markets, such as Iraq and Oman, which are suffering from inefficiency, weaker corporate governance and investor protection mechanisms. Consequently, investigating the influential factors related to the auditors as a corporate governance mechanism on the extremity of earning management in these countries might be an important research gap the current paper is willing to fill. Strictly speaking, this paper seeks to answer whether external auditors' characteristics may positively impact the degree of earning management among companies.

Information asymmetry is an opportunity for management to implement earnings management, so monitoring is essential to protect shareholders' interests and prepare reliable financial reports (Wati and Gultom, 2022). Therefore, independent auditing is seen as another critical control mechanism that helps to align the interests of shareholders and managers (Idris et al., 2018). In addition, the auditor's primary duties include searching for and discovering substantial distortions, correcting such errors, and, in some cases, preventing any deletion, fraud, or misrepresentation in financial statements. Financial scandals and the collapse of some companies in several developed countries have led to doubts and questions about whether an external audit effectively limits earnings management. In addition, the wave of audit failures in the capital market has led to increased concern about audit quality. This leads to the need for quality audits for reliable financial reporting and corporate governance mechanisms to continue to be encouraged and become a priority in the company (Anindita and Rohman, 2021).

The outcome of the study may extend the accounting and auditing literature significantly. Initially, this is among the pioneer initiatives investigating the impact of some specific characteristics of auditors, including audit opinion, audit report lag, audit tenure, audit independence, and industry specialization, on the level of earning management in the Iraq and Oman markets. Prior

efforts have mostly considered the role of internal auditors' characteristics (Alyaarub et al., 2021), Islamic corporate governances (Elghuweel et al., 2017), environmental corporate governances (Elghuweel, 2015; Ahmed et al., 2021), firm specific characteristics (Alareeni, 2018), board characteristics (Liu and Tsai, 2015; Idan et al., 2022), other fraudulent activities (Talab et al., 2017), and external audit quality (Rahman et al., 2021; Abdulkarem and Jassim, 2022) on the degree of earning management in Iraq and Oman countries. Therefore, this study might be considered a comprehensive effort concerning the role of auditors in mitigating agency conflicts. In other words, this paper aims to provide evidence regarding the characteristics of independent auditing in limiting earnings management practices. In addition, it improves awareness of the vital role of auditing in monitoring the transparency and credibility of financial reporting. The results of the present study can help independent auditors, regulatory bodies, and legislators limit the occurrence of earnings management and increase the quality of control mechanisms.

The rest of the study is organized as follows. The second section includes the literature review and hypothesis development. In the third section, the authors have elaborated on the statistical population and employed methodology. The results are reported in the fourth section, and the fifth section embraces the discussion and conclusion of the study.

2. Theoretical principles and literature review

Financial reports are essential for users to obtain accurate and timely financial information for various economic decisions. Hence, the performance of earnings management is vital as one of the most important tools to influence these reports to report targeted financial status for companies that wish to attract investment and achieve the interests of shareholders and managers. Hence, earnings management is one of the essential things; since it is a process to beautify financial data and hide defects and accurate information, it is undesirable (Alghemary, 2021). Based on this, the cornerstone of earnings management. Regarding financial reporting, the company's management has the necessary space and opportunity to manipulate the figures to improve the company in front of the stakeholders. However, this image does not correspond to the fair image of the company (Isaksson and Qvarsell, 2021).

Generally, earnings management occurs when managers use the flexibility available in accounting options to manipulate the earnings figure to mislead stakeholders about the company's underlying economic performance. Accordingly, earnings management can be considered a choice that managers make concerning existing accounting practices or procedures to achieve predetermined objectives. Earnings management can be defined as the manipulation of financial statements by managers within the existing limits under accounting principles to disclose misleading information to users of financial statements to achieve specific goals (Helda et al., 2022).

Almahrog and Lasyoud (2021) pointed out that earnings management is a process in which accounting knowledge and skills are used to influence the figures presented in financial reports by complying with the regulations related to accounting principles.

Managers can generally manipulate the presented financial statements to achieve some of the desired goals due to conflicts of interest between the management and their various stakeholders. Hence, their reliability needs to be questioned. One of the main pillars of the accountability process is audit because accountability is related to the existence of reliable and valid information.

Moreover, this validity and reliability related to reviewing the information provided by a person independent of the producers is realized. Therefore, the quality of independent audits is expected to directly affect the validity, accuracy, and reliability of financial reports and information provided. Alzoubi (2018) mentions that audit quality can be a control mechanism that prevents company managers from manipulating profits. Audit quality refers to the independent auditor's ability to detect errors and irregularities in financial reports and reduce information asymmetry between management and shareholders. Also, audit quality is achieved by the audit firm applying a set of policies and procedures to verify that the audit process is carried out under the requirements of the audit standards (Sherwood et al., 2019).

Krishnan et al. (2019) stated that audit quality is related to the auditor's ability to reduce or limit overall audit risks. The level of assurance indicates the quality of the audit the independent auditor provides to the users of financial reports. That is, it reflects the accuracy of the auditor's information to the stakeholders. In general, the quality of the audit process may vary from auditor to auditor, but a high-quality audit should result in high-quality information. In other words, financial statements audited by skilled independent auditors will likely be free of material irregularities and errors (Baskar et al., 2018).

Moreover, Toy et al. (2019) believe that audit quality is achieved by complying with standards and considerations related to audit quality control. The importance of audit quality has increased in recent years due to the increase in manipulation and fraud in financial reports, which, with the increase, has led to several lawsuits from accounting firms such as Arthur Andersen. This draws attention to the need to verify the quality of the audit process to overcome these pressures (Bhaskar and Flower, 2019).

In general, audit quality is based on two main pillars: the auditor's ability to detect material misstatements and errors in financial reports and the auditor's independence, which allows him to take the appropriate position to disclose those errors and misstatements. In general, the size of audit firms is accepted as a measure of efficiency and independence, given that large audit firms are more capable of providing what is needed for high-quality audits. In addition, these institutions have a greater incentive to perform high-quality audits due to their reputation. Also, the increasing litigation risks prompt them to maintain their independence in providing audit services (Awuye, 2022). Considering the relationship between the work of auditors and the level of confidence in financial reports prepared by managers, the effectiveness and quality of the audit process have an inverse relationship with the ability to limit earnings management. In other words, earnings management is different in its levels according to independent auditors' quality level of performance. Moreover, audit quality is conditioned by a group of independent factors and variables used as criteria to determine the quality level. Among the most important of these variables are the firm size, industry expertise, auditor's report timeliness, the auditor's change, and the auditor's opinion (Rashed, 2020), which will be discussed further, and the effect of each of them in limiting the method earnings management is as follows.

2.1. Audit firm size and earnings management

Size is considered one of the most influential factors in audit quality, so the size of the audit firm is also one factor determining its choice by customers. Considering the market's trust in large audit firms on the one hand and the ability of these firms to fulfill their obligations when demanding compensation from their clients on the other hand (Kanakriyah, 2020), the size of the audit firm can be measured through several variables, including the size of the assets owned by the

company, market share, and the total number of employees of the company (Mohammed and Saeed, 2018). Also, Almalhuf (2020) believes that large audit institutions have several characteristics that these companies have, unlike small companies, among which we can refer to the ability to plan and implement high-quality audits. Possess the ability to provide specialized training for your workforce, have an interest in continuing education, and invest heavily in knowledge.

In addition to paying attention to reputation as one of the moral assets of the company, the ability to compete in the labor market and the possibility of providing various consulting services are important. Also, Hee (2018) emphasized the importance of the role of the regulatory environment for the audit profession in improving the audit quality level by activating the accountability method for audit institutions and imposing various penalties for violating relevant laws and regulations. Finally, as a result of the previous arguments, the first hypothesis can be formulated as follows:

H1: There is a negative relationship between audit firm size and earnings management.

2.2. Industry expertise and earnings management

Industry expertise means the auditor has in-depth knowledge, understanding, and extensive experience of the company's business, industry, and operations. In addition to having a deep understanding of how to apply the general and specific accounting standards and practices of the client's industry and extensive knowledge of auditing standards are necessary to perform a high-quality audit where the industry and nature of the client's business affect the risks of material misstatement in the client's financial statements (Yeboah et al., 2023). Several previous studies, including (Garcia-Blandon and Argiles-Bosch, 2018 and Boubaker et al., 2018), provided evidence that industry expertise and knowledge are among the main factors influencing the level of audit quality. The auditor's expertise in a specific industry enables him to perform the audit process better and more professionally, thereby increasing the possibility of discovering earnings management practices (Fossung and La Fortune, 2019; Q. Guo et al., 2022). Therefore, audit institutions use expert auditors in this industry and provide the necessary resources for training to gain new jobs and gain more market share by providing specialized audit services in various industries (Garcia-Blandon and Argiles-Bosch, 2018; Guo et al., 2022).

Rashed (2020) believes a positive relationship exists between each audit quality and expertise in the industry. He states that expertise in the industry, although of little importance in traditional audit tasks, is significant in complex audit tasks requiring the auditor to have skills, knowledge, and expertise in the industry where the audited unit operates. This helps him reach distinct and strong judgments that reflect the audit process's quality in detecting errors, manipulation, and fraud in financial reports. Furthermore, it prevents or limits management's ability to apply earnings management. Finally, as a result of the previous arguments, the second hypothesis can be formulated as follows:

H2: There is a negative relationship between expertise in the auditor industry and earnings management.

2.3. Auditor's report timeliness and earnings management

The delay in completing the audit process or the delay in announcing the audit results is the most influential factor at the time of the profit announcement, which helps determine the reaction

of the labor market to the profit announced by the company. Therefore, pressure is placed on the independent auditor to complete the audit process on time. The delay in the audit report is defined as the period that continues from the end of the company's financial period to the independent auditor's signing of the audit report (Singh et al., 2022). In this context, researchers (Aigienohuwa and Uniamikogbo, 2021; Waris and Haji Din, 2023) believe that the reason for the delay may be due to companies' reluctance to disclose bad results and, as a result, spend more time applying earnings management techniques to change those results. Previous literature has confirmed that audit reporting is delayed as earnings management activities increase (Habib et al., 2019). In this context, Fakhfakh and Jarboui (2022) believe that the destructive results of companies create a strong incentive for managers to manipulate accounting numbers to hide the results and improve the lousy performance of those companies. Therefore, earnings management increases audit risks, forcing auditors to implement more procedures and prolonging the audit process, delaying the audit report. This was confirmed by (Šušak, 2020), who showed that companies that engage in earnings management have more delays in preparing financial reports.

This variable is measured by the number of days between the end of the financial period and the date of the audit report, which shows the duration of the audit delay. Therefore, audit quality positively correlates with a high level of ability to promptly provide the necessary information to the stakeholders (Almalhuf, 2020). Finally, as a result of the previous arguments, the third hypothesis can be formulated as follows:

H3: A negative relationship exists between the timely audit report and earnings management.

2.4. Auditor change (the duration of auditor's relationship with the employer) and earnings management

Another variable for the audited independence test is the length of the relationship with the employer. In this regard, two conflicting opinions exist about the duration of the relationship between the auditor and the employer. The first indicates that the long relationship between the auditor and the employer hurts the auditor's independence and objectivity. Moreover, on the other hand, the second opinion shows that the long relationship between the auditor and the employer increases his knowledge regarding the client's industry, and as a result, the more expertise in the industry, the higher the quality of the audit. This issue was confirmed by Shahwan (2021), who explained that the increase in the auditor's expertise in the client's industry leads to an increase in the duration of his cooperation to audit the client's financial statements. Due to his extensive knowledge of the nature of the company's work, the ability to plan and implement the audit process with a high ability to discover manipulations and fundamental mistakes in financial statements that positively reflect on the quality of the audit.

On the contrary, the study conducted by two authors (Quick and Schmidt, 2018) showed that the length of time required to change the auditor harms audit quality. This issue was confirmed by Rashed (2020), who explained that the length of the contractual period between the auditor and the employer negatively affects the auditor's performance, limiting the possibility of discovering earnings management practices. He believes that this is either due to the emergence of common interests between the auditor and the employer or as a result of the employer's exploitation of the reduced level of professional care on the part of the auditor as a result of his previous knowledge of various aspects of the activity during the long period of relationship with the employer. In this

context, Ijaz (2019) believes that the longer the auditor stays with the employer, the greater the possibility of the auditor losing independence. He adds that the auditor's long-term relationship with the employer reduces the auditor's professional doubt. Finally, as a result of the previous arguments, Jaharum's hypothesis can be compiled as follows:

H4: There is a negative relationship between auditor change and earnings management.

2.5. Auditor's opinion and earnings management

An independent audit provides an unbiased review of the information provided by agents. which leads to an increase in the level of trust and assurance of the accuracy and fairness of that information. Therefore, the auditor's opinion is an essential tool to guide users of financial statements regarding the performance and problems that the company may face. In addition, providing a clean audit opinion is an assurance and guarantee that supports various stakeholders' reliance on the information in the audited financial statements. While giving a conditional opinion leads to not trusting that information (Moalla, 2017).

Previous literature has provided conflicting results regarding the direct relationship between earnings management and auditors' opinions. For example, Tsipouridou and Spathis (2014) confirm no close relationship between audit opinion and earnings management. Likewise, Rusmanto et al. (2014) concluded that earnings management does not necessarily affect auditor opinion.

Also, the opinion provided by the auditors is one of the variables that can be used to test their independence. The more independent the auditor, the greater the chance of a modified opinion if there are inconsistencies in management's financial statements and reports. Moreover, vice versa, the lower the auditor's independence, the less likely he is to issue a modified opinion on financial reports that do not accurately represent the company's economic status. Therefore, a positive relationship is likely between non-audit services with high fees and audit reports with unmodified opinions. That is, auditors who perform services other than auditing for their clients lead to a violation of their independence. This indicates a negative relationship between each non-audit service fee and the final opinion of the audit process. In other words, the higher the fee for services unrelated to the audit process, the better. The probability of giving a revised opinion on financial statements that do not reflect the actual economic status of the company is reduced (Ijaz, 2019). Finally, as a result of the previous arguments, the fifth hypothesis can be formulated as follows:

H5: There is a negative relationship between the auditor's opinion and management.

3. Research methodology

The current research is applied in terms of purpose and descriptive-survey research regarding the data collection method. The methodology of this research is based on past information.

Necessary information for measuring the study variables is collected from the audited financial statements of companies, which are reported on the official websites of the Iraq Stock Exchange[1] and the Muscat Stock Exchange[2]; the official websites of listed banks are also used to extract

[1.] http://www.isx-iq.net/

[2.] https://www.msx.om/

data. Several regression models have been used to measure the research variables. The statistical population of this research is all the banks admitted to the stock exchange of Iraq and Oman in the period from 2015 to 2021 after applying the following conditions:

The date of their acceptance in the Iraq and Oman Stock Exchange Organization was before 2015, and they should be on the list of listed banks by the end of 2021.

The end of the financial year of all banks should be the same, and in addition to this, there should be no change of activity or financial year during the desired period.

Accessing the financial information required to extract the required data is possible.

The limitations mentioned above are considered for data collection in order to increase the integrity and harmony among the collected data. Having collected the required information from the financial statements of listed banks, data are transmitted into the Excel sheets in order to classify them and compute them based on the affiliated equations. Then, the summarized and cohered data are transmitted into EViews software for implementing the pre-regression tests; after conducting the necessary tests, the regression analyses are applied, and the outcomes of the tests are reported in the tables of the manuscript.

3.1. Research variables and model

This research uses audit quality as an independent variable, audit committee, ownership structure, financial leverage, asset return rate, operating cash flow, firm size as control variables, and earnings management as a dependent variable. Therefore, to investigate the impact of audit quality on earnings management, the following model is used:

$$DAC = a_0 + a_5(AUDSPEC_{it}) + a_6(AUDOPIN_{it}) + a_7(TIMELIENSS_{it}) + a_8(AUDITSWITCH_{it}) + a_9(BIG4_{it}) + a_1(ACINDEP_{it}) + a_2(ACSIZE_{it}) + a_3(ACMEET_{it}) + a_4(ACEXPERT_{it}) + a_{10}(INSTOWON_{it}) + a_{11}(STATEOWN_{it}) + a_{12}(BLOCKHWON) + a_{13}(LEVG_{it}) + a_{14}(ROA_{it}) + a_{15}(CFO_{it}) + a_{16}(SIZE_{it}) + \varepsilon$$

In the above model, the variables are defined in **Table 1**.

Table 1. The Operational definition variable.

Sign	Variable	Operational definition
AUDSPEC	Auditor's industry expertise	A dummy variable that takes the value of 1 if the company is audited by an industry expert auditor and zero otherwise. (Based on market share).
AUDOPIN	Auditor's opinion type	A dummy variable whose value is 1 if the auditor submits a modified audit opinion in that year and 0 otherwise.
TIMELIENSS	Audit delay	(LOG) The number of days from the financial year's end to the audit report's date.
AUDSWITCH	Change of auditor	A dummy variable is set to 1 if the auditor changes and zero otherwise.
Big4	Audit firm size	A dummy variable takes the value of 1 if the big 4 audit firms audit the company and zero otherwise. The researcher will determine these 4 institutions based on their information.

Table 1. (Continued).

Sign	Variable	Operational definition
DAC	Discretionary accruals	Estimated using the modified Jones model (1995), specified as follows: $AT_t/A_{t-1} = \beta1(1/A_{t-1}) + \beta2(\Delta REV_t - \Delta REC_t/A_{t-1}) + \beta3(\Delta PPE_t/A_{t-1}) + 3$. TA_t (total accruals) = accounting earnings – CFO. $A_{i,t-1}$ = total asset in year $t-1$. $\Delta REV_{i,t}$ = the difference in operating revenue. $\Delta REC_{i,t}$ = the difference of accounts receivable. $\Delta PPE_{i,t}$ = the difference of gross property plant and equipment.
ACINDEP	Audit committee independence	The ratio of independent audit committee members to total committee members. This variable is added to control the potential role of audit committee characteristics on the earning management procedures, as evidenced by prior studies (Mishra and Malhotra, 2016; Juhmani, 2017).
ACSIZE	Audit committee size	The total number of audit committee members. This variable is added to control the potential role of audit committee characteristics on the earning management procedures, as evidenced by prior studies (Mishra and Malhotra, 2016; Juhmani, 2017).
ACMEET	Audit committee meetings	The number of meetings held by the audit committee in a year. This variable is added to control the potential role of audit committee characteristics on the earning management procedures, as evidenced by prior studies (Mishra and Malhotra, 2016; Juhmani, 2017).
ACEXPERT	Financial experience	A dummy variable whose value is 1 if at least one independent financial expert is a member of the audit committee and zero otherwise. This variable is added to control the potential role of audit committee characteristics on the earning management procedures, as evidenced by prior studies (Mishra and Malhotra, 2016; Juhmani, 2017).
INSTOWN	Institutional ownership	The average percentage of shares owned by institutional investors. Since prior studies have argued that institutional ownership may influence earnings management (Ramalingegowda et al., 2021; Elyasiani et al., 2017; Hunjra et al., 2020), we included this variable.
STATEOWN	Governmental ownership	Percentage of total shares owned by the government. Prior academics have documented that organizations owned by governmental bodies may show different earning reporting behaviours (Alhadab et al., 2021; X. Chen et al., 2008; Ben Rejeb Attia et al., 2020).
BLOCKOWN	Foreign ownership	A dummy variable that takes the value 1 if the firm has a foreign shareholder that owns 10% or more of the outstanding shares, zero otherwise. As it is evidenced in the literature that having foreign investors may influence earnings management (Han et al., 2022; J. Guo et al., 2015), this variable is added to the model.
LEVG	Leverage	Total long-term debt divided by total assets. This variable is added to control the impact of capital structure on earnings management (Jelinek, 2007; Zamri et al., 2013)
ROA	The rate of return on assets	Net profit divided by total assets at the beginning of the year. We added this variable into the model as previous findings document that profitability is related to earning management (Kapoor and Goel, 2017; Kalbuana et al., 2022).
COF	Operating cash flow	Cash flows from operating activities are divided by total assets at the beginning of the period. It is added to control the impact of liquidity on earning management (Bhundia, 2012; Chung et al., 2005).
SIZE	Size of the company	The logarithm of the market value of total assets at the end of the year. Finally, we added size as Ali et al. (2015) and Ruwanti et al. (2018) find that larger firms are more likely to practice earning management.

4. Data analysis

4.1. Descriptive statistics

The current study has used the regression model to investigate earnings management methods and the role of independent audit quality. This research data relates to 28 Iraqi and 8 Omani banks from 2015 to 2021. Every year, we have examined 196 Iraqi and 56 Omani banks, so they have been studied in general. **Tables 2** and **3** show the information related to the research variables, including the number of observations, average, standard deviation, minimum, and maximum separately for the two countries.

Table 2. Descriptive statistics of the variables of Iraq.

Sign	Variable	Observation	Mean	Standard deviation	Minimum	Maximum
Dac	Discretionary accruals	196	–0.012	0.281	–0.758	0.621
Audspec	Auditor's industry expertise	190	0.495***	0.501	0.000	1.000
Audopin	Auditor's opinion type	189	0.032	0.176	0.000	1.000
Timeliness	Audit delay	189	2.012	0.576	0.000	2.879
Audswitch	Change of auditor	189	0.206	0.406	0.000	1.000
big4	Audit firm size	189	0.921	0.271	0.000	1.000
Acindep	Audit committee independence	183	0.318***	0.051	0.250	0.500
Acsize	Audit committee size	191	3.084	0.770	0.000	4.000
Acmeet	Audit committee meetings	177	6.423	5.934	1.000	23.000
Acexpert	Financial experience	177	0.510	0.502	0.000	1.000
Instown	Institutional ownership	182	0.767	0.214	0.116	0.993
Stateown	governmental possession	177	0.003***	0.012	0.000	0.0497
Blockown	Foreign ownership	177	0.288	0.348	0.000	0.910
Levg	Financial Leverage	189	0.483	0.388	0.001	2.471
Roa	Return on assets	189	0.009	0.019	–0.104	0.081
Cof	Operational cash flow	189	8.300***	99.667	–5.537	1360.417
Size	Firm size	189	26.871	0.571	24.534	28.231

**** is the significant level at 99 percent.*
Source: research findings.

The lowest average of Iraq's variables is related to the discretionary accruals with −0.012, and the highest is related to the firm size variable with 26.871. The lowest standard deviation of Iraq data is for the state ownership variable, and the highest dispersion is related to the operational cash flow. Iraq's minimum and maximum data for the operational cash flow variable.

In **Table 3**, the lowest average of Oman variables is related to the discretionary accruals and the highest average is related to the firm size average. The lowest standard deviation of Oman data is for the return on assets, and the highest dispersion is related to audit committee meetings. Oman's minimum data is for discretionary accruals and the maximum is for the firm size. A t-test was used to compare the average data of the two countries. Most of the research data have no significant

differences with each other. Only the difference in the four variables is significant. The number of board meetings in Iraq is at the level of 95%, and the operational cash flow is at the level of 99%, which is more reliable than in Oman. In contrast, state ownership, audit committee independence, and auditor's industry expertise are higher in Oman at the 99% confidence level than in Iraq.

Table 3. Descriptive statistics of Oman variables.

Sign	Variable	Observation	Mean	Standard deviation	Minimum	Maximum
Dac	Discretionary accruals	56	–1.830	0.135427	–0.409	0.279
Audspec	Auditor's industry expertise	56	0.964***	0.187	0.000	1.000
Audopin	Auditor's opinion type	56	0.036	0.187	0.000	1.000
Timeliness	Audit delay	56	1.793	0.080	1.398	1.863
Audswitch	Change of auditor	56	0.107	0.312	0.000	1.000
big4	Audit firm size	56	0.964	0.187	0.000	1.000
Acindep	Audit committee independence	56	0.729***	0.096	0.667	1.000
Acsize	Audit committee size	56	3.893	1.073	3.000	6.000
Acmeet	Audit committee meetings	56	5.946	2.604	3.000	13.000
Acexpert	Financial experience	56	0.964	0.187	0.000	1.000
Instown	Institutional ownership	56	0.438	0.379	0.000	0.903
Stateown	governmental possession	56	0.245***	0.216	0.000	0.612
Blockown	Foreign ownership	56	0.149	0.173	0.000	0.449
Levg	Financial Leverage	56	0.804	0.144	0.177	0.891
Roa	Return on assets	56	0.010	0.006	–0.021	0.023
Cof	Operational cash flow	56	0.038***	0.182	–0.185	0.569
Size	Firm size	56	21.806	0.745	19.662	23.294

**** is the significant level at 99 percent.*

4.2. Multicollinearity test

The variance inflation factor (VIF) is a statistical technique applied to estimate multicollinearity in regression analysis. Multicollinearity occurs when two or more independent variables in a regression model are highly correlated, which can cause problems in estimating the individual coefficients of these variables. The VIF test helps identify the extent to which multicollinearity is present in a regression model.

According to the results of VIF tests, reported in **Table 4**, for both countries, Iraq and Oman, respectively, all the variables' values are less than 5, indicating less concern for multicollinearity among the variables since values below 5 are often considered acceptable by scientists.

Table 4. The results of the VIF test.

Iraq			Oman		
Variable	**VIF**	**1/VIF**	**Variable**	**VIF**	**1/VIF**
Size	4.29	0.233	Levg	4.55	0.22
Timeliness	2.07	0.482	Stateown	4.44	0.225
Cof	1.92	0.52	Acmeet	4.42	0.226
Acmeet	1.9	0.526	Acindep	3.12	0.32
Levg	1.88	0.533	Size	2.91	0.343
Acexpert	1.86	0.537	Instown	2.39	0.418
Audopin	1.85	0.54	Blockown	2.04	0.49
Blockown	1.79	0.559	Roa	1.89	0.529
Stateown	1.68	0.595	Acsize	1.87	0.535
Instown	1.45	0.688	Y2020	1.78	0.561
Audswitch	1.37	0.729	Y2021	1.77	0.564
Acsize	1.36	0.734	Cof	1.72	0.581
Roa	1.34	0.744	Y2016	1.68	0.595
Audspec	1.32	0.755	Y2018	1.60	0.624
Big4	1.23	0.815	Timeliness	1.57	0.637
Y2017	1.15	0.868	Audspec	1.47	0.681
			Y2019	1.46	0.686
			Audswitch	1.08	0.927
			Audopin	1.07	0.939
			Acexpert	1.02	0.98
			Big4	1.02	0.983
Mean VIF	1.79		Mean VIF	2.14	

4.3. Correlation coefficient

The correlation coefficients between variables are reported in **Tables 5** and **6** for Iraq and Oman.

Table 5. The results of Pearson's correlation coefficient for Iraq.

Variables	Acindep	Acsize	Ac~et	Ac~ert	Au~pec	Au~pin	Ti~ess	A~tch	In~wn	St~wn	Bl~wn	Big4	Levg	Roa	Cof	Size
Acindep	1.00															
Acsize	−1.00	1.00														
Acmeet	−0.32	0.32	1.00													
Acexpert	−0.37	0.37	0.70	1.00												
Audspec	−0.41	0.41	0.09	0.08	1.00											
Audopin	0.17	−0.17	−0.32	−0.20	0.10	1.00										
Timeliness	−0.47	0.47	0.50	0.56	−0.01	0.09	1.00									
Audswitch	−0.33	0.33	−0.04	0.18	0.23	0.14	0.43	1.00								

Table 5. (Continued).

Variables	Acindep	Acsize	Ac~et	Ac~ert	Au~pec	Au~pin	Ti~ess	A~tch	In~wn	St~wn	Bl~wn	Big4	Levg	Roa	Cof	Size
Instown	−0.37	0.37	0.70	0.37	−0.20	−0.40	0.47	0.14	1.00							
Stateown	0.11	−0.11	−0.21	0.03	−0.27	0.67	0.18	0.33	−0.27	1.00						
Blockown	0.22	−0.22	−0.41	−0.59	−0.31	−0.33	−0.44	0.03	0.11	−0.22	1.00					
Big4	−0.19	0.19	0.36	0.29	0.47	0.29	0.18	0.24	−0.03	0.19	−0.63	1.00				
Levg	−0.64	0.64	0.01	−0.01	0.26	−0.18	0.34	0.62	0.30	−0.07	0.23	−0.06	1.00			
Roa	0.14	−0.14	−0.51	−0.60	−0.06	0.48	−0.21	0.03	−0.41	0.52	0.18	0.15	0.06	1.00		
Cof	0.19	−0.19	−0.31	−0.47	−0.17	0.10	0.18	0.20	−0.06	0.23	0.13	0.01	0.16	0.52	1.00	
Size	0.10	−0.10	−0.79	−0.68	0.05	0.12	−0.37	0.38	−0.33	0.12	0.61	−0.29	0.47	0.50	0.46	1.00

Table 6. The results of Pearson's correlation coefficient for Oman.

Variables	Acindep	Acsize	Ac~et	Ac~ert	Au~pec	Au~pin	Ti~ess	A~tch	In~wn	St~wn	Bl~wn	Big4	Levg	Roa	Cof	Size
Acindep	1.00															
Acsize	−0.18	1.00														
Acmeet	−0.30	0.14	1.00													
Acexpert	0.13	−0.38	0.00	1.00												
Audspec	0.04	0.07	−0.23	−0.04	1.00											
Audopin	−0.04	−0.07	−0.11	0.04	0.04	1.00										
Timeliness	0.07	0.05	−0.17	−0.09	0.46	0.09	1.00									
Audswitch	0.16	0.09	0.05	0.07	0.07	−0.07	0.03	1.00								
Instown	−0.43	0.32	0.55	−0.15	−0.16	0.18	-−0.03	0.03	1.00							
Stateown	0.21	−0.04	0.53	0.10	−0.15	−0.10	−0.05	0.24	0.49	1.00						
Blockown	−0.10	0.40	−0.04	−0.03	−0.03	0.03	−0.09	0.09	0.44	0.34	1.00					
Big4	0.13	−0.11	−0.08	−0.04	−0.04	0.04	−0.04	−0.24	−0.17	−0.01	−0.03	1.00				
Levg	−0.81	0.12	0.22	−0.09	−0.04	0.07	−0.11	−0.17	0.42	−0.24	0.31	−0.06	1.00			
Roa	−0.03	−0.18	−0.01	−0.02	−0.15	−0.25	−0.21	0.09	−0.03	−0.02	0.19	0.01	0.35	1.00		
Cof	−0.08	−0.07	0.06	0.05	0.03	0.19	0.07	−0.09	−0.08	−0.14	0.06	−0.10	0.21	0.07	1.00	
Size	−0.42	−0.03	0.35	0.07	−0.06	0.01	−0.15	−0.18	0.07	−0.24	0.03	−0.05	0.61	0.43	0.47	1.00

4.4. Model estimation and results estimation

According to the topics elaborated in the theoretical part, the experimental model is estimated based on the methods of fixed and random effects of panel data. These models include:

$$DAC = a_0 + a_5(AUDSPEC_{it}) + a_6(AUDOPIN_{it}) + a_7(TIMELIENSS_{it}) + a_8(AUDITSWITCH_{it}) + a_9(BIG4_{it}) + a_1(ACINDEP_{it}) + a_2(ACSIZE_{it}) + a_3(ACMEET_{it}) + a_4(ACEXPERT_{it}) + a_{10}(INSTOWON_{it}) + a_{11}(STATEOWN_{it}) + a_{12}(BLOCKHWON) + a_{13}(LEVG_{it}) + a_{14}(ROA_{it}) + a_{15}(CFO_{it}) + a_{16}(SIZE_{it}) + \varepsilon$$

To estimate the model, first, whether the data is consolidated or tabular should be checked by the F test. The zero hypothesis in this test expresses that the data is consolidated, and the one hypothesis expresses the tabular nature of the data. Suppose the H0 hypothesis is rejected after performing the F test. In that case, the question arises as to which of the fixed and random effects models can be

investigated, which is determined by the Hausman test.

Table 7. F-Limer test to determine the panel or pooling method.

Country	Test type	Test statistic	Significance level
Iraq	F-Limer	12.60	0.000
Oman	F-Limer	5.990	0.000

According to the results of the F-Limer test in **Table 7**, the F statistic calculated for the Iraq and Oman models equals 12.60 and 5.99, respectively. The null hypothesis that the data are pooled is rejected at the 99% confidence level for all four regressions. Therefore, the panel data model should be used to estimate the coefficients of these models. Therefore, we should use the Hausman test to determine fixed or random effects, as presented in **Table 8.**

Table 8. Hausman test to determine fixed effects or random effects.

Country	Test type	Test statistic	Significance level
Iraq	Hausman	32.040	0.010
Oman	Hausman	10.390	0.973

The results in **Table 8** show that the Hausman test statistic was obtained based on the model estimation for Iraq and Oman, respectively (32.040) and (10.390). The statistic obtained for Iraq is more than the value in the table, and the null hypothesis is rejected at the 99% confidence level. Therefore, the fixed effects model is more appropriate for estimating the Iraq model. However, for Oman, the calculated statistic is lower than the value in the table, and the null hypothesis is not rejected. The random effects method is the most suitable method to estimate this model.

According to the results of the F-test of the two countries, it should be estimated using the panel data method. Also, by performing the Hausman test, it was determined that to achieve the best regression estimation of this model, the fixed effects data method should be used for Iraq, and the random effects data method should be used for the country of Oman. In addition, according to the results of **Table 9**, this model has homogeneous variance in both countries, according to the results of the Breusch-Pagan/Cook Weisberg variance heterogeneity test. Also, according to the Woodridge serial correlation test results, Iraq's regression has a serial correlation at the 90% confidence level, and Oman's regression has no serial correlation. The specification of the reset code model shows that this model does not have omitted variables, and therefore, the results are not biased.

Table 9. The results of the regression tests of the two countries separately.

Test	Iraq		Oman	
	Chi2 or F	P-value	Chi2 or F	P-value
Breusch-Pagan	0.550	0.460	0.990	0.321
Wooldridge test	12.711	0.071	2.334	0.170
Ramsey-RESET	1.310	0.270	1.470	0.221

Note: The null hypotheses of the three tests are, respectively, homogeneity variance, absence of serial correlation, and absence of the omitted variable.
Source: research findings.

In **Table 9**, the first column shows the results of estimating the research model using the random effects method for Iraq. The second column is the estimation results of the research model using the random effects method for Oman. Since the residuals of this variance model are identical and have serial correlation, to evaluate the model better, fixed and robust random effects methods have been used to solve the problems of classical assumptions and their non-establishment with this method. The Audspec variable coefficient for Iraq and Oman is calculated as −0.276 and −0.032, respectively, which are significant at 95% and 99% levels. Therefore, there is a negative and significant relationship between expert auditing in the industry and earnings management. The Audopin variable coefficient for the two countries of Iraq and Oman is equal to −0.265 and −0.012, respectively, at the 99% confidence level. Therefore, both countries have a negative and significant relationship between auditors' opinions and earnings management. The timeliness variable coefficient for Iraq and Oman was calculated as −5.706 and −0.048, respectively, which are significant at the 95% level. Therefore, there is a negative and significant relationship between auditor delay and earnings management. The variable coefficient of Audswitch for Iraq and Oman is 0.567 and 0.015, respectively, at the 90% confidence level. Therefore, both countries have a positive and significant relationship between auditor change and earnings management. The variable coefficient of Acindep for Iraq and Oman is calculated as −0.525 and −0.028, respectively, which are significant at 99% and 90% levels. Therefore, there is a negative and significant relationship between the independence of the audit committee and earnings management. The Acsize variable coefficients for Iraq and Oman are −0.381 and −0.062, respectively, at 99 and 95 percent confidence levels. Therefore, for both countries, there is a negative and significant relationship between the size of the audit committee and earnings management. The Acmeet variable coefficient for Iraq and Oman is calculated as −0.313 and −0.300, respectively, which are significant at 90% and 99% levels. Therefore, a negative and significant relationship exists between audit committee meetings and earnings management. The variable coefficient of Acexpert for the two countries of Iraq and Oman is equal to −0.746 and −0.002, respectively, at the 99% confidence level. Therefore, both countries have a negative and significant relationship between financial experience and earnings management. Considering the significance of the above coefficients, the second hypothesis of the research, that there is a significant relationship between the quality of independent auditing and earnings management, is confirmed.

H1: There is a negative relationship between audit firm size and earnings management.

The results of **Table 10** show that the regression coefficient corresponding to the size of the auditing institute is (0.189) for Iraq and (0.020) for Oman, and the significance level related to it is (0.240) for Iraq and (0.268) for Oman, then for both countries it is more than 0.05; Therefore, with 0.95 confidence, the effect of the size of the auditing firm on the earnings management of the company is not significant, (0.05 < 0.240 P-value) for Iraq and (0.05 < 0.268 P-value) for Oman. It denotes that large audit firms are not likely to provide high quality services to their clients; large audit firms in emerging markets are mostly subjected to the number of their clients or staff, not too high quality services (Al-Thuneibat et al., 2011). In line with our findings, Vander Bauwhede et al. (2003) do not show evidence that audit quality, measured by audit firm size constrains income-increasing earnings management. In this regard, Elghuweel et al. (2017) document that board size, audit firm size, the presence of a corporate governance committee and board gender diversity have no significant impact on the extent of earning management in the Oman business environment.

Al-Thuneibat et al. (2011) document that the size of an audit firm has no significant impact on the quality of services provided in emerging markets, particularly Jordan. In this regard, Alyaarubi et al. (2021) show that the internal audit quality is likely to mitigate the earning management in Oman, indicating that earning management in Oman might be subjected to other corporate governance mechanisms. Qamhan et al. (2018) found a negative association between earnings management and meeting attendance of audit committee members. In contrast, extensive literature shows that the size of audit firms may increase the quality of provided services. For example, in a meta-analysis, Salehi, Fakhri Mahmoudi and Daemi Gah (2019) show that the size of an audit firm positively contributes to the quality of the services provided.

Table 10. Model estimation results for both countries separately.

Variable	Sign	Iraq		Oman	
		Coefficient	P-value	Coefficient	P-value
The size of the audit firm	Big4	−0.185	0.248	0.020	0.268
Auditors' industry expertise	Audspec	−0.278	0.032	−0.020	0.02
Audit delay	Timeliness	−5.706	0.045	−0.048	0.044
Change of auditor	Audswitch	0.567	0.089	0.015	0.058
Auditor's opinion type	Audopin	−0.265	0.000	−0.012	0.005
Experience of auditors	Audspec	−0.746	0.000	−0.002	0.000
Audit committee size	Acsize	−0.381	0.001	−0.062	0.045
Audit committee meetings	Acmeet	−0.313	0.071	−0.300	0.001
Financial experience	Acexpert	−0.746	0.000	−0.002	0.000
Institutional ownership	Instown	−0.074	0.000	−0.031	0.061
State ownership	Stateown	−17.450	0.083	−0.045	0.074
Foreign ownership	Blockown	−0.003	0.000	−0.326	0.001
lever	Levg	3.252	0.046	0.171	0.204
The rate of return on assets	Roa	−1.069	0.614	3.527	0.017
Operating cash flow	Cof	2.399	0.046	0.932	0.000
Firm size	Size	−3.132	0.051	−0.106	0.000
	Y2016			0.071	0.000
	Y2017	−0.885	0.034		
	Y2018			−0.116	0.000
	Y2019			0.133	0.012
	Y2020			−0.067	0.011
	Y2021			−0.101	0.020
	_Cons	89.539	0.048	2.231	0.000
	R2		95.53		92.50
	Obs	134		56	
	Wald/F test	60.67	0.001	33.19	0.000
	Norm of resid		0.925		0.219

Source: research findings.

So, considering the collected information, the test of the first sub-hypothesis of the research since the size of the audit firm has a negative relationship with earnings management is rejected with a confidence of 0.95 for each country.

H2: There is a negative relationship between expertise in the auditor industry and earnings management.

The results of **Table 10** show that the regression coefficient corresponding to specialization in the accounting industry is (0.02) for Oman and (0.032) for Iraq, and the significance level related to that is (0.278) for Iraq and (0.020)) for Oman, so for both countries it is less than 0.05; on the other hand, the mentioned coefficient is negative for both countries. In other words, with a certainty of 0.95, the effect of expertise in the accounting industry on earnings management is opposite and significant for both countries, (value—p = 0.020 < 0.05) for Iraq and (p-*Value* = 0.002 < 0.05) for both countries) for the country of Oman and with the increase of the specialization index in the accounting industry, the amount of earnings management decreases. It means that one of the paramount characteristics of auditors might be having in-depth knowledge about the industry in which the client firm is operating. For example, identifying the details of financial statements as well as the potential risky procedures that clients might employ to manipulate earnings are likely to assist auditors in implementing high-quality audit work. Relatedly, Daemigah (2020a), in a meta-analysis, suggests that audit industry expertise is likely to have a significant impact on audit fees, which is reported as a quality measure. In line with our findings, Baatwah et al. (2021) find that the firm-specific expertise of the external internal audit function provider is significantly associated with lower real earnings management in the Oman business environment. In addition, Baatwah, Al-Qadasi and Al-Ebel (2020) document that a leader with religious belief and accounting expertise dramatically lowers real earning management. Hsu and Liao (2023) suggest that auditors with industry expertise care about their reputation in detecting accruals and thus put more effort into constraining overproduction, not cutting discretionary expenses.

H3: A negative relationship exists between the timely audit report and earnings management.

The regression coefficient corresponding to the timeliness of the audit report is −5.706 for Iraq and −0.048 for Oman, and the significance level related to it is 0.045 for Iraq and 0.044 for Oman. It is less than 0.05 for both countries. On the other hand, the mentioned coefficient is negative for both countries. In other words, with the certainty of 0.95, the effect of the timeliness of the audit report on earnings management is opposite and significant for both countries (value—p = 0.045 < 0.05) for Iraq and (value—p = 0.044 < 0.05) for the country of Oman and with the increase of the timeliness index of the audit report, the amount of earnings management decreases. This means that timelier issuance of audit reports (or financial statements) may reduce the likelihood of earning manipulations in client firms. It is expected that the confidence of auditors, the great amount of audit effort put into the work, and the experience and expertise of auditors to manage the audit work effectively and efficiently promptly is likely to improve the quality of financial statements. Also, the quality of internal corporate governance, such as active and larger audit committees, may shorten audit delays. In accordance with our findings, Fakhfakh and Jarboui (2022) show that firms which manage their earnings upward are more likely to accelerate the release of their financial statements. Chai and Tung (2002) also suggest that the market anticipates unfavorable earnings news when it observes reporting delays. As a consequence, late reporters appear to make the most of a bad

situation by employing income-decreasing accruals in big-bath-type earnings management and in contractual renegotiations. They find that the magnitude of income–reducing abnormal accruals is related to the reporting lag. However, external and environmental conditions such as the financial crisis (Salehi, Fakhri Mahmoudi and Daemi Gah, 2019) and the COVID-19 pandemic (Bajary et al., 2023), cost stickiness (Salehi et al., 2018) and product market competition (Salehi, Daemi and Akbari, 2020) must be considered when the auditors' services quality and lag are being assessed.

H4: There is a negative relationship between auditor change and earnings management.

The results of **Table 10** show that the regression coefficient corresponding to the change in accounting is 0.567 for the country of Iraq and 0.015 for Oman, and the significance level related to it is 0.089 for Iraq and (0.058) for Oman, then for both countries it is more than 0.05; therefore, with the certainty of 0.95, the effect of accounting change on the company's earnings management was not significant, 0.089 < 0.05 value for Iraq and 0.058 < 0.058 value for Oman and with the changes in the accounting change index, there is not much change in the company's earnings management. It also delineates that the increased frequency of audit firms may increase the possibility of earning management among the companies. One potential explanation of such findings might be the shallow knowledge of lower tenured auditors about the details of companies' financial and operational procedures. In this sense, Yasser and Soliman (2018) demonstrate that audit tenure is significantly correlated with the quality of provided services. Davis et al. (2022) find a significant and negative relation between tenure and signed discretionary accruals. C. Y. Chen et al. (2008) document that discretionary accruals' absolute and positive values decrease significantly with audit partner and firm tenure. Inconsistent with our findings, Johnson et al. (2002), studying the correlation between audit tenure and absolute discretionary accruals, find that short tenure is associated with larger absolute discretionary accruals but long tenure is not, which suggests that long audit firm tenures are not associated with a decline in earnings quality. Myers et al. (2003), assessing the association between audit firm tenure and earning management, contend that the degree of accruals declines with longer audit firm tenure. Moreover, they show that longer audit tenure is correlated with less intense income-increasing and less income-decreasing accruals, suggesting that the greater audit tenure may limit earnings management.

H5: There is a negative relationship between the auditor's opinion and management.

The regression coefficient corresponding to the auditor's opinion is −0.265 for the country of Iraq and −0.012 for Oman, and the level of significance related to it is 0.000 for Iraq and 0.005 for Oman, so each of the two countries is less than 0.05; on the other hand, the mentioned coefficient is negative for both countries. In other words, with a certainty of 0.95, the effect of the auditor's opinion on earnings management is opposite and significant for both countries, with 0.05 < 0.000 P-value for Iraq and 0.005 < 0.005 value for Iraq. for the country of Oman and with the increase of the auditor's opinion index, the amount of earnings management decreases. Such findings also denote that the likelihood of receiving a modified audit opinion declines the propensity of managers to manipulate earnings. As discussed in the literature, those auditors issue modified opinions to provide high-quality services. Accordingly, Xiao et al. (2020) suggest that audit effort is important in improving audit quality by influencing the audit process and audit opinion. It has also been discovered that audit quality moderates the relationship between audit opinion and earnings management (Imen and Anis, 2021). Omid (2015) argue that the issuance of modified audit opinion

is likely to decrease the earning management among Iranian companies. Johl et al. (2007) articulate that Big 5 auditors in Malaysia appear to qualify more frequently than their non-Big 5 counterparts when high abnormal accruals are present. Denoting that the high-quality audit service provision by Big 5 auditors is likely to be effective when there are potentialities for earning management in corporations. Herbohn and Ragunathan (2008) show that firms receiving inherent uncertainty modifications have greater earnings (accruals) persistence than others. This is consistent with the proposition that managers have made policy choices in reporting current earnings, with which their auditors disagree, that will likely result in a greater ability to forecast the firm's future earnings. Habbash and Alghamdi (2017) indicate that only auditor opinion indicates earnings management practice in Saudi Arabia. Collectively, these findings are in line with our documents arguing that the type of audit opinion is likely to determine the quality of financial reporting.

5. Discussion and conclusion

The quality of the independent audit directly affects the validity, accuracy, and reliability of the financial reports and information provided. Audit quality refers to the auditor's ability to detect errors and irregularities in financial reports and reduce information asymmetry between management and shareholders. Therefore, the audit process might be one of the most important factors preventing and reducing earnings management practices. Among the most important factors for audit quality promoters auditing firm's size, industry expertise, the timely audit report, audit tenure, and the auditor's opinion might be considered. Therefore, the main objective of the current paper is to assess the impact of audit quality attributes on the degree of earning management in companies.

According to the results obtained, there is no significant association between the size of an audit firm and earning management. This might be the reason that larger audit firms listed in Iraq and Oman countries do not necessarily offer high-quality services to the financial markets. Further findings reveal that other characteristics of auditors, including industry expertise, audit report timeliness and the possibility of issuing a modified opinion may decrease the likelihood of practicing earning management strategies. Such findings imply the important role of these variables in the improved quality of audit services. Finally, the findings show that the frequency of changing audit firms may impair the quality of reported earnings. Due to frequent switching, these findings argue that new auditors do not have the opportunity to gain an in-depth comprehension of Noticeably, our findings are robust according to the applied regressions for both Iraq and Oman countries.

Our findings are in line with the prior studies showing a negative relationship between the size of the audit firm and earnings management (Kanakriyah, 2020) and a negative relationship between audit tenure and earnings management (Shahwan, 2021). Moreover, the findings of the current paper support the findings of Shahwan (2021), Almalhuf (2020) and Ijaz (2019), demonstrating that audit industry specialization, timelier audit reports and type of audit opinion are effective in declining earning management.

Corresponding to the findings of this paper, there are several implications for auditors, investors, board members and policymakers. Auditors may use the outcome of this study to improve the quality of their services by categorizing their staff among different industries to increase their knowledge in that specific industry. Also, timely and modified opinions are likely to improve the quality of their work in the presence of market practitioners and client firms. Moreover, investors may enjoy lower agency conflict by increasing the audit tenure and promoting auditors' knowledge

about the operation of their companies. In this regard, board members may also complement the audit process by providing them with necessary and critical information regarding any potential internal control deficiency. Additionally, policymakers may use our findings to significantly promote the general condition of financial markets by designing and enforcing regulations that may limit the audit switch and support the audit report timeliness and expertise. Finally, macroeconomists may use the findings of this study to have accurate predictions regarding the macroeconomic indicators such as unemployment rate (Salehi, Daemi Gah, et al., 2021) and GDP growth dispersion (Daemigah, 2020b), since it is documented that accounting earnings are likely to determine the macroeconomic parameters.

Similar to many empirical investigations, the present effort encounters certain limitations that warrant thorough consideration. As is commonly understood, the efficacy of parametric tests can be significantly influenced by the sample size being analyzed. When dealing with small sample sizes, there is a risk of insufficient statistical power, which may impede the ability to identify substantial effects. Conversely, when working with large sample sizes, the potential arises for achieving statistically significant results even when the effects in question are practically trivial. Readers must take note of the significant disparities in sample sizes among the countries under investigation, which can be attributed to the varying numbers of listed companies in these nations. One must exercise caution when attempting to extrapolate the current study's findings to broader populations or different contextual settings that possess distinct institutional structures. This caution is especially pertinent for countries devoid of abundant natural resources like oil or gas, as the chosen countries in this study might be the major players in the global natural resource market. In summary, it is essential to be cognizant of these limitations inherent in the current research when considering its implications and generalizability, given the nuanced relationship between sample size and statistical power and the specific economic and institutional characteristics of the countries studied.

Based on the findings of this paper, several suggestions for prospective researchers are made. (1) Earnings management detection techniques: developing and refining techniques and models for detecting earnings management. Future academics may explore advanced statistical and machine learning methods to better identify instances of earnings manipulation; (2) cross-cultural studies investigating how earning management practices vary across different cultures and regions. They can also explore whether cultural factors influence the prevalence and methods of earnings management. It is notable that Iraq and Oman as two Arabic countries share many characteristics; (3) industry-specific study: conducting in-depth studies on specific industries to understand how earning management practices differ; and (4) impact on shareholders: examining the impact of earnings management on shareholder value and investor decision-making.

Author contributions

Conceptualization, YAAKW, MABV and MS; methodology, YAAKW; software, YAAKW; validation, MABV, MS and YAAKW; formal analysis, MS; investigation, YAAKW and MABV; resources, YAAKW; data curation, YAAKW; writing—original draft preparation, YAAKW; writing—review and editing, YAAKW; visualization, MS; supervision, MS; project administration, MABV; funding acquisition, YAAKW. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

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