



Influential Factors Affecting Earnings Management in Public Listed Companies: A Conceptual Model

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ABSTRACT

The issue of earnings management in public listed companies has gained an increasing attention from academicians and policy makers due to its impact on stakeholders' decision-making. Researchers found that the main factors influencing earnings management can be grouped under internal and external corporate governance aspects. This study proposed a comprehensive model combining some internal and external corporate governance factors affecting earnings management. Based on a review and synthesis of relevant literature, the current study concludes that audit committee characteristics, auditor reputation and audit opinion have a significant impact on earnings management. Further, we predict that auditor reputation has a potential mediating role on the relationship between audit committee characteristics and earnings management, and on the relationship between audit committee characteristics and audit opinion. This research extends the scholarship on earnings management literature and has the potential to provide a set of recommendations to investors and regulatory entities.

Keywords: Earnings Management, Audit Committee, Audit Opinion, Auditor Reputation

JEL Classifications: M41, M42, M48

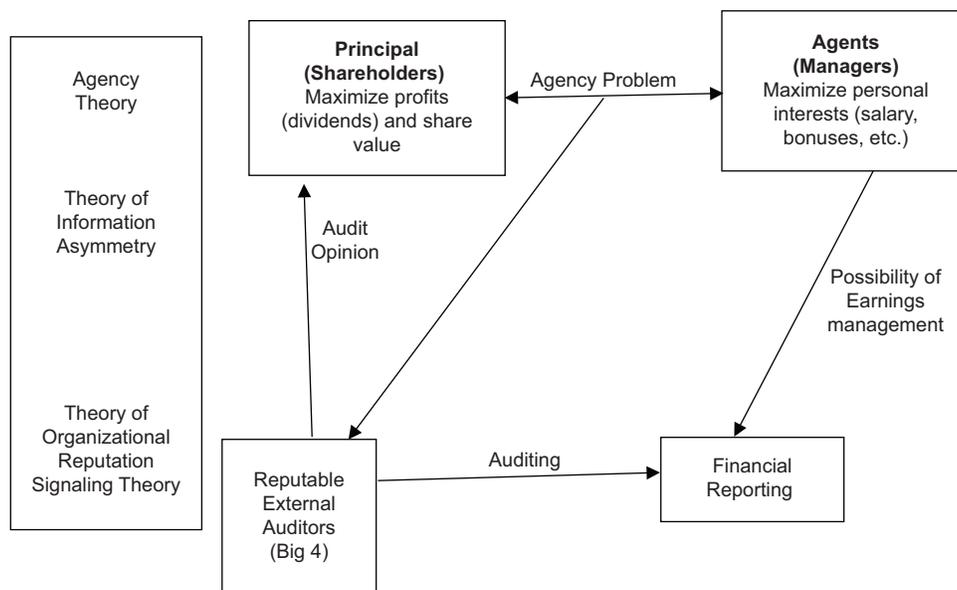
1. INTRODUCTION

Financial reporting presented by listed companies and audit reports issued by external auditors maintain a significant impact on stakeholders' decisions. Corporate accounting scandals emphasized the influential role of auditing in ensuring both the soundness of financial statements and the quality of reported earnings (Maijor and Vanstraelen, 2006; Lin and Hwang, 2010). Audit committees and external auditors, as corporate governance actors, provide supervision that is expected to reduce the potential for earnings management. Accordingly, numerous studies focused on examining the association between audit quality and earnings management. However, most of those studies were conducted in a western context and provide inconsistent evidence (Arnedo et al., 2008; Lin and Hwang, 2010; Maijor and Varstraelen, 2006; Piot and Janin, 2007).

2. THEORETICAL FRAMEWORK

Recognizing the main research aim which is to develop a comprehensive model of earning management in public listed companies, we argue that four fundamental theories are relevant to this research: agency theory, theory of information asymmetry, theory of organizational reputation, and signaling theory. Figure 1 depicts the theoretical frame of our research.

The agency theory proposed by Jensen and Meckling (1976) explains the agency relationship between the principal as the owner or shareholders and the manager who acts as an agent. Managers are hired by the principal to operate in his or her best interests and report to him or her. According to the agency theory, audit quality is an efficient monitoring instrument that aids in detecting managerial manipulation and aligning the interests of shareholders and managers (Alzoubi, 2016). Similarly, Gerayli et al. (2011) found that

Figure 1: Visualization of Theoretical Basis

the demand for external auditing is triggered by agency problems. Because earnings management affects reported earnings quality, the level of information asymmetry between the agent (manager) and the principals (shareholders) grows (Quttainah et al., 2013).

The auditor profession plays a critical role in minimizing agency conflict between the principal and the agent, according to agency theory. Jensen and Meckling's (1976) agency theory defines the agency relationship between the principal, who is the owner or shareholders, and the management, who works as an agent. The prevalence of type II agency problems necessitated the existence of independent assurance and control over financial reporting disclosure (Fan and Wong, 2005). Furthermore, different types of investors are likely to pursue different goals, with some emphasizing social welfare or communal principles while others prioritize personal wealth maximization.

Akerlof's (1970) theory of information asymmetry stated that the seller (management) has superior knowledge than the buyer (investors, principal). Information asymmetry is a condition in which management and shareholders have different levels of knowledge and access to information about the company's financial issues (Christiani and Nugrahanti, 2014). This research argues that the theory of information asymmetry is relevant in the public listed companies as managers may involve in earning manipulation based on their power and control.

According to signaling theory, corporations may utilize audit partner reputation as a screening method when choosing audit partners. The duty of external auditors in this scenario is to ensure that the company's financial statements comply with widely accepted accounting principles and accurately reflect the underlying economic events (Chi et al., 2011). According to Houque et al. (2017), companies that hire high-quality auditors have a lower level of accrual earnings management.

Because of information asymmetry, signaling theory emerges. This idea demonstrates how information signals to other parties

might lessen asymmetry. Principals do not trust agents because of asymmetry of knowledge and personal interests that arise in the context of agency relations. This distrust can be minimized by excellent external governance through quality audits that align the interests of agents and principals (Jensen and Meckling, 1976). The current study advocates the presence of information asymmetry and argues that it has a significant impact on selecting qualified auditors from big4 companies.

3. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

3.1. Earnings Management

Earnings management, according to Sasaninejad et al. (2014), is the intervention in the process of determining profit that is undertaken in accordance with the management's desired aims. Earnings management affects the decision-making process of all company stakeholders, including investors, regulators, and analysts, as one of the key elements that trigger corporate performance deception (Dichev et al., 2013; Krishnan, 2003). Earnings management, according to Healy and Wahlen (1999), happens when managers manipulate financial reporting by employing judgment to deceive stakeholders about the company's underlying economic performance or to influence contractual outcomes based on the reported earnings.

Managing earnings through deceptive reporting or other ways in order to manipulate share prices for personal gain may come at the expense of other stakeholders, notably those who finance the company (Ioana and Mariana, 2014). The self-interest motivation of senior managers, the self-interest motivation of other stakeholders, in the capital market, the company's motivation to raise the stock price, and the motivation to comply with government regulation are all factors to consider when it comes to earnings management motivation. Scholars say that a CEO's overconfidence in earnings management is motivated by a desire to boost his or her public image (Hribar and Yang, 2016; Kouaib and Jarbou, 2014).

3.2. Audit Committee Characteristics

Audit committees are typically seen as a key component of a company's overall governance structure, with a focus on audit quality and financial reporting oversight (Baxter & Cotter, 2009). Apart from the benefits of forming an audit committee, past research has suggested that the size, independence, experience, and frequency of audit committee meetings may have an impact on the effectiveness of oversight (Carcello et al., 2011; Sun et al., 2014; Zgarni and Halioui, 2016). Previous research has looked into the relationship between the many characteristics that characterize audit committee effectiveness and various earnings management practices. The three elements of audit committee characteristics in relation to earnings management are examined in this study: audit size, meetings, and independence.

3.3. Auditor Reputation

In the auditing literature, the concept of auditor reputation has gained widespread acceptance. The auditor reputation hypothesis holds that auditors do high-quality audits to develop a positive reputation in the marketplace so that they may retain clients and receive fee premiums, according to Bergner et al. (2020). Following an audit failure and consequent loss of reputation, Big N firms lose major audit clients and revenues (Skinner and Srinivasan, 2012).

The auditor serves a critical function in both preserving investor rights and uncovering internal wrongdoing (Newman et al., 2005). As a result of their reputation and high litigation issues, the top four auditors provide higher audit quality (Defond and Zhang, 2014). Reputable auditing organizations, such as the Big Four, tend to provide superior services because they hire the best auditors and provide them with a system of training and procedures that are thought to be of greater quality and effectiveness (Christiantie and Christiawan, 2013; Rusmin, 2010). Due to their incentive to avoid potential risks and promote their reputation, big audit firms are more likely to discover earnings manipulation than small audit companies (Khalil and Ozkan, 2016).

The external auditor is a third party involved in resolving conflicts between the principal (shareholders) and the agent (board of directors), as the agent may not always work in the principal's best interests (Barzegar and Salehi, 2008).

When compared to low-quality auditors, Zehri and Shabou (2011) argued that high-quality auditors are more likely to detect problematic accounting practices by clients and report substantial errors and misstatements. As a result, increased audit quality can better control earnings management and, as a result, improve financial report quality. Various indicators have been used as proxies for audit quality in previous studies in the linked literature. According to several research, improved auditing quality reduces accruals-based earnings management (Okolie, 2014; Soliman and Ragab, 2014; Gerayli et al., 2011).

3.4. Audit Opinions

The accountant's investigation effort culminates in an auditor's opinion (Hsiao et al., 2010). Auditors must first gather and examine audit evidence before expressing a judgment on whether the

audited financial statements comply with the financial reporting framework. This conclusion is included in the audit report, which is distributed to users of the financial statements of the company (Porter et al., 2003). Internal governance methods' impact on reducing profits manipulation been previously studied in the literature (Abdelsalam et al., 2016; Leventis et al., 2013). Management decisions, on the other hand, must be scrutinized to prevent opportunistic behavior such as earnings manipulation (Lassoued et al., 2018).

As a result, auditors should not only provide their judgment on whether a company's financial statement was prepared in accordance with reporting rules, but also flag any transactions that are questionable in order to protect both creditors and shareholders (Alhadab and Clacher, 2018). The amount to which financial statement users may trust audit judgments is determined by the quality of the audit undertaken, which is critical to capital market stability. Carp and Georgescu (2019) emphasize the importance of audit opinions in improving the quality of financial data, as evaluated by the degree of sales manipulation (under the aspect of value and the time when the transactions were made).

3.5. Hypothesis Development

This research has seven main research hypotheses predicting the association between audit committee characteristics, auditor reputation, audit opinions, and earnings management in public listed companies.

3.6. Audit Committee Characteristics and Earnings Management

According to Vafeas (2005), the efficacy of monitoring is related to the size of the audit committee, and tiny audit committees are unable to complete all functions properly. Because it reduces the likelihood of restating financial statements, the size of the audit committee leads to improved audit quality and a high level of earnings quality (Agyei-Mensah and Yeboah, 2019). According to previous research, the optimal size for an audit committee is four members (Abbott et al., 2004; Cohen et al., 2008). Managers' involvement in earnings manipulation has been demonstrated to be reduced when audit committees are larger (Lin et al., 2006).

Mishra and Malhotra (2016) found that the size of the audit committee, the number of directorships held by audit committee members, and the frequency of audit committee meetings all have a substantial impact on earnings quality. Other audit committee characteristics in India do not appear to have a substantial impact on earnings management. The board of directors, the audit committee, and the audit size are all statistically significant in decreasing earnings management, according to Zehri and Zgarn (2020). Previous research has revealed a link between the audit committee's size and earnings management activities.

Ghosh et al. (2010) revealed that in enterprises with small audit committees, discretionary accruals are high, implying that an audit committee with a large number of members has sufficient skills and knowledge and is more successful in financial reporting monitoring. According to Salihi and Jibril (2015), the size of

an audit committee has a substantial impact on the amount of earnings management. Guided by these argumentations, this study argues that the size of the audit committee plays a major role in influencing earnings management and tends to empirically test the following hypothesis:

H_{1a} : The size of audit committees has a negative impact on earnings management in public listed companies.

According to Sharma and Kuang (2014), audit committee independence leads to less effective earnings management. Salleh (2014) investigated the influence of audit committee independence on earnings management and discovered that audit committee independence was more successful at reducing earnings management. Independent audit committees have a significant and direct relationship with accruals profit management, according to Al-Rassas and Kamardin (2016). According to Baxter and Cotter (2009), the audit committee's independence reduces the likelihood of earnings management. According to Sun et al. (2014), audit committee independence is linked to lower discretionary accruals. According to Klein (2002) and Soliman and Ragab (2014), raising the percentage of independent directors on audit committees reduces the number of anomalous accruals.

The audit committee's primary responsibility is to ensure the accuracy of financial data. Members of the audit committee can make more objective judgements and dare to reveal financial malfeasance as their independence improves, reducing the chance for earnings management. The audit committee's independence enhances the company's internal oversight force, which may effectively limit earnings manipulation and improve the transparency of information connected to the company's internal condition, thereby improving the quality of earnings data. The following research hypothesis can be used to examine the validity of this argument in publicly traded companies:

H_{1b} : The presence of independent audit committees has a negative impact on earnings management in public listed companies.

Karla and Bedard (2004) indicated that the activity level of committee meetings is determined by two factors: the tasks it must fulfill and the number of meetings held. The importance of meeting frequency has been reported in previous studies. Audit committee meetings are linked to low discretionary accruals, according to Katmon and Al Farooque (2017). Previous research has shown that having audit committee members meet on a regular basis improves the firm's governance and reduces managers' involvement in profits manipulation (Abbott et al., 2004; Zgarni et al., 2016).

An active audit committee with more frequent meetings is more efficient and linked to effective monitoring procedures (Sun et al., 2014). As a result, audit committee meetings have a considerable impact on profits quality, according to Lin and Hwang (2010). In addition, according to Ebrahim (2007), more active audit committees diminish earnings manipulation. According to the literature reviewed above, a high frequency of audit committee meetings can lower the risk of financial fraud and accounting errors. The audit committee meeting facilitates communication between the audit committee members and the external auditors.

External auditors can report difficulties in their work to the audit committee in a timely manner, preventing management from manipulating earnings. Therefore, formulate and test the following hypothesis based on the above literature:

H_{1c} : The frequency of audit committees' meetings has a negative impact on earnings management in public listed companies.

3.7. Auditor Opinions and Earnings Management

According to Rosner (2003) and Charitou et al. (2007), qualified audit opinions cause troubled firm managers to be more conservative in their financial reporting. According to Etemadi et al. (2013), distressed enterprises are driven to use conservative techniques in earnings reporting under the threat of an audit opinion. As a result, a qualified audit opinion puts pressure on management to be more careful with their earnings. Arnedo et al. (2008) investigated the association between qualified audit opinion and earnings management in a Spanish environment, using a sample of private pre-bankrupt companies. They separated qualified audit opinions into two categories: those based on going-concern difficulties and those based on other factors. They discovered a link between earnings management and qualified opinion on going-concern concerns that was negative (Herbohn and Rangunathan, 2008).

According to Gajevszky (2014), the likelihood of managing earnings decreases when a qualified audit report is issued. In the case of Romanian listed businesses, audit opinion is thus negatively associated to discretionary accruals. Firms receiving changed opinions have lower earnings persistence than firms receiving unqualified opinions, according to Vichitsarawong and Pornupatham (2015), and the degree of earnings persistence varies by type of modification.

Gajevszky (2014) studied the impact of the auditor's opinion on earnings management in Romania. According to the analysis, organizations with qualified audit views manage much more negative discretionary accruals than those with unqualified audit opinions. Elfouzi and Zarai (2009) investigated the impact of audit views and audit firm reputation on earnings management as assessed by discretionary accruals in the context of 53 non-financial Tunisian enterprises from 2002 to 2007. They discovered that the likelihood of managing earnings in an upward trend is linked to the issue of changed audit opinions and the presence of non-Big 4 auditors.

On the basis of a UK sample, Alhadab (2016) investigated the relationship between audit report and real-based and accrual-based earnings management, arguing that firms receiving qualified audit reports have distinct characteristics than firms receiving unqualified audit reports. While previous study has primarily focused on US data, Johl et al. (2007) used Malaysian data to investigate the relationship between audit reports and accrual earnings management. According to Johl et al. (2007), Malaysia's Big 5 audit firms offer more qualified audit opinions when their clients have a higher degree of discretionary accruals.

Francis and Krishnan (1999) investigated the relationship between auditor reports (by the issue of updated audit reports) and accrual

earnings management (proxied by the level of discretionary accruals). Their reasoning was that audit firms in the United States will try to mitigate risk by lowering the threshold for issuing a modified audit report when their clients demonstrate a higher level of accrual earnings management. This research intends to test the assumption that receiving qualified opinions are signals of earnings management, while receiving unqualified opinions are signals of higher earnings quality. Thus, the following hypothesis was stated as follows:

H₂: Earnings management is negatively related to receiving unqualified opinions in public listed companies.

3.8. Audit Committee and Auditor Reputation

The selection of an independent auditor is a crucial step in a lengthy process aimed at maintaining financial reporting quality (Gerged et al., 2020). The agency theory and corporate governance systems are used to guide this process. The audit committee's involvement in the corporate governance mechanism is supposed to promote audit quality by overseeing the company's financial statements' reliability and the efficacy of internal control over the financial statements. Audit committees, according to Mustafa et al. (2018), might improve client incentives to use strong external monitoring methods.

When the audit quality of a company's financial reporting is questioned, it's likely that the company may change auditors to avoid the capital market ramifications of potentially incorrect financial reporting (Hennes et al., 2011). These advantages must, however, be weighed against the expenses of switching auditors. First, organizations must pay for the time and effort it takes to find and hire a new audit firm. Second, incumbent auditors build client-specific knowledge and competence that is costly to acquire for a new auditor (DeAngelo, 1981). Third, the supply of auditors is limited in the short term, particularly when a large number of companies are looking for new auditors at the same time (Kohlbeck et al., 2008).

Larger boards, institutional ownership, and foreign ownership all have a significant and positive relationship with appointing Big 4 auditors, according to El-Dyasty and Elamer (2021). Larger boards and foreign owners are less likely to hire third-tier auditors, whereas powerful CEOs (duality) and independent directors are more likely to hire second-tier auditors instead of Big 4. As a result, a large number of research in both developed and developing nations looked into the relationship between corporate governance mechanisms and auditor selection (Cho and Wu, 2014; Quick et al., 2018). The goal of these studies was to figure out why companies use audit firms depending on internal corporate governance processes and ownership structure. The fundamental result of such studies is that selecting an auditor is a difficult decision that is influenced by a number of competing considerations.

According to Liu et al. (2015), high-quality auditors (Big auditors) are more likely to be hired by powerful CEOs as a sign of excellent financial reporting quality. Because of worries about monetary or reputational damages that may result from lawsuits or SEC punishments, Abbott and Parker (2000) stated that independent

and active audit committee members require a high degree of audit quality. Furthermore, Abbott and Parker (2000) discovered that organizations with non-employee audit committees that meet at least twice a year are more likely to use specialists. In 2001 and 2002, audit committees at Birner Dental Management Services, Inc and eMagin both dismissed Arthur Andersen LLP as their chief accountant, according to Chen and Zhou (2007).

Firms with more independent audit committees, audit committees with more financial expertise, and audit committees with larger boards fired Andersen earlier, according to Chen and Zhou (2007). Firms with larger and more active audit committees, on the other hand, were more likely to select a Big 4 firm as the successor auditor. Beasley et al. (2009) use replies from 42 public businesses in the United States to provide insight into audit committee methods. In general, audit committee members rely largely on the external auditor to carry out their financial reporting quality oversight.

At the same time, the committees are responsible for overseeing the external auditor. According to the authors, frequent and relevant meetings between the audit committee and the external auditor are crucial for effective audit committee monitoring which is confirmed by auditors. In an interview with US auditors, Cohen and Zarowin (2010) discovered that auditors believe audit committees have been more active and diligent in the recent decade. Thus, this study advocates the vital role of the audit committee in influencing the selection of external auditors and intends to test the following hypotheses:

H_{3a}: The larger the size of the audit committee, the higher the probability that the listed company will be audited by the big 4.

H_{3b}: The higher the independence of audit committees, the higher the probability that the listed company will be audited by the big 4.

H_{3c}: The more meetings held by audit committees, the higher the probability that the listed company will be audited by the big 4.

3.9. Auditor Reputation and Earnings Management

According to Salehi and Abedini (2008), audit quality is linked to the quality of information contained in financial statements, and these financial statements should be less likely to contain major misstatements because they are audited by high-quality auditors (reputable audit firms). Audit firm reputation and size are a key determinant of audit quality, assuming that such firms have sufficient resources and experience to conduct a high-quality audit (Aronmwan et al., 2013).

According to Zahmatkesh and Rezazadeh (2017), the auditor's professional competence, responsibility, and objectivity have a substantial impact on the audit quality. Skinner and Srinivasan (2012) produced exceptional evidence on the importance of an auditor's reputation for quality in their analysis of ChuoAoyama's audit failure of Kanebo, a prominent Japanese cosmetics business whose management engaged in massive accounting fraud. Individuals are encouraged to manage their perceptions in order to establish a sense of self within the organization (Bozeman and

Kacmar, 1997). Reputable auditing companies see their reputation as a result of their organization's assessment of their compliance with its standards and expectations (Ferris et al., 2003).

Aronmwan et al. (2013) reported a positive significant association between audit firm reputation and Nigerian Stock Exchange audit quality, and recommend that corporations hire audit firms with an established track record of audit quality and reputation.

A negative association between earnings manipulation and big audit firms has been demonstrated by Francis and Yu (2009) and Lin and Hwang (2010). Chaiwut et al. (2020), in their study of the impact of external auditors' reputation on earnings management, found that the higher an external auditor's reputation, the greater the load placed on external directors and auditors. As a result, the management's ability to supervise and monitor its working procedures is harmed. Auditors serve two important functions for capital market participants: they give information and they provide insurance (Hakim and Omri, 2010).

Big business auditors are also a constraint on earnings management, according to Krishnan (2003) and Chi et al. (2011). Taiwan (Chen et al., 2005; Chiang et al., 2011), Europe (Tendeloo and Vanstraelen, 2008), and Iran (Tendeloo and Vanstraelen, 2008) have all reported similar findings (Gerayli et al., 2011). Kanagaretnam et al. (2010) used a sample of 29 banks from 29 countries to investigate the relationship between auditor reputation and earnings management in banks. Their findings showed that auditor reputation, as measured by auditor type and specialty, has hampered income-increasing earnings management. Chaiwut et al. (2020) claimed that auditor reputation is critical in earnings management mitigation.

Reputable auditors, according to DeAngelo (1981), are better able to detect major misstatements in financial accounts and are more likely to report what they uncover than other auditors. A Big 5 auditor's reputation can put them out of business, as Arthur Andersen learned the hard way (Huang and Li, 2009). External auditors' reputation has a detrimental impact on earnings management in Indonesian non-financial listed businesses, according to Kutha and Susan (2021). In Tunisian public listed businesses, Kouaib and Jarboui (2014) discovered that auditor reputation has a negative and considerable impact on earnings management. As a result of the above literature review and previous signal theory analysis, we can conclude that auditor reputation, as a type of external governance mechanism, is a signal of audit quality that helps to reduce information asymmetry and incompleteness in the management process of publicly traded companies, improve internal control quality, and inhibit earnings management behavior. Accordingly, the following hypothesis is developed as follows:

H₄: Public listed firms audited by Big 4 audit firms engage less earnings management than firms audited by non-Big 4 auditors

3.10. Mediation Effect of Auditor Reputation on the Relationship between the Audit Committee and Earnings Management

Because they have an international reputation, significant clientele, and use advanced technology in their operations, the big four public accounting firms are frequently thought to have higher audit quality. Big auditors have more skill, resources, and experience,

and are better able to spot a significant financial statement abnormality (Rusmin, 2010). Several research (Sun and Liu, 2011; Memiş and Cetenak, 2012; Taktak and Mbarki, 2014) have looked into the impact of auditor reputation on earnings management.

Big-4, Co-audit, audit committee size, and audit committee independence are all factors that limit profits management methods, according to Salem et al. (2021). Between 2003 and 2009, Alves (2013) found a favorable association between the existence of an audit committee, external audit, and discretionary accruals among 33 non-financial listed Portuguese enterprises. However, according to Alves (2013), having an audit committee and an external auditor together reduces earnings management. According to Eriandani et al. (2020), the more effective the audit committee is combined with the use of one of the big four auditors, the less prevalent earnings management will be, implying that the auditor's reputation also strengthens the relationship between audit committee effectiveness and earnings management. Therefore, this study argues that auditor reputation plays a fundamental mediating role between audit committee characteristics and earnings management derive the following hypotheses:

H_{5a}: Earnings management is negatively related to audit committee size when a public listed company is audited by a Big 4.

H_{5b}: Earnings management is negatively related to independent audit committee when public listed company audited by a Big 4.

H_{5c}: Earnings management is negatively related to the frequency of audit committee meetings when a public listed company is audited by a Big 4.

3.11. Auditor Reputation and Audit opinions

The reputation impacts of high-quality audits, such as client addition and retention, as well as enhanced audit fees, generate significant quasi-rents for audit firms (DeAngelo, 1981; Firth and Smith, 1992). The audit opinions issued are a watershed moment in determining the degree of conformity with the standards governing the preparation of financial reports. Audit views might be used to coerce the earnings management process due to the high exposure to the quality of financial statements. According to Barac et al. (2017), 29 percent of comments given in the case of Croatian enterprises point to the presence of earnings management, which is used to hide poor performance from investors, lenders, and authorities.

Given the importance of audit firms in ensuring the integrity of financial reporting quality, previous research has looked at several proxies of audit quality, such as auditor reports, and found evidence that the issuance of a qualified audit report is linked to the level of accrual earnings management (Francis and Krishnan, 1999; Johl et al., 2007). According to Etemadi et al. (2013), struggling enterprises are driven to use conservative techniques in earnings reporting under the threat of an audit opinion.

As an independent party, the auditor plays a critical function in providing guarantees and oversight, preserving investor rights, and uncovering fraud by internal parties (Newman et al., 2005). According to Defond and Zhang (2014), the big N auditor is linked to minimal fraud and discretionary accruals, indicating a

low audit risk. Similarly, Johnstone and Bedrad (2004) and Defond and Zhang (2014) found that major four auditing firms choose low-risk customers to reduce audit risk. This means that auditors from large public audit firms (in this case, the Big 4) will provide audit opinions appropriate to the client’s financial condition and circumstances in order to avoid the risk of litigation or sanction from government regulations, which would damage the public accounting firm’s reputation. Hence, this research argues that auditor reputation has a significant impact on issuing an audit opinion through testing the following hypothesis:

H₆: Public listed companies audited by Big 4 are more likely to receive unqualified opinions.

3.12. Mediation Role of Auditor Reputation on the Relationship between the Audit Committee and Audit Opinion

As an independent party, the auditor plays a critical function in providing guarantees and oversight, preserving investor rights,

and uncovering fraud by internal parties (Newman et al., 2005). According to Defond and Zhang (2014), the big N auditor is linked to minimal fraud and discretionary accruals, indicating a low audit risk. Similarly, Johnstone and Bedrad (2004) and Defond and Zhang (2014) found that major four auditing firms choose low-risk customers to reduce audit risk. This means that auditors from large public audit firms (in this case, the Big 4) will provide audit opinions appropriate to the client’s financial condition and circumstances in order to avoid the risk of litigation or sanction from government regulations, which would damage the public accounting firm’s reputation.

Joint audit quality, according to Abdelmoula (2020), is dependent on external auditor reputation, competence, and independence, and is defined as the auditing of financial statements by two independent auditors, with both auditors signing the audit report. According to Guan et al. (2016), auditors play a critical role in guaranteeing the quality of financial reporting, which is critical information for financial statement users. Auditors as external parties, according to Defond and Zhang (2014) and Guan et al. (2016), want to be independent in fulfilling their tasks in order to protect their reputations by avoiding audit risks such as litigation risk, reputation risk, and regulatory risk. In a sample of 162 French banks from 2005 to 2012, Hadriche (2015) found that strong auditor reputation and qualified audit opinion have a detrimental impact on earnings management. Furthermore, as compared to non-reputable audit firms, reputable audit firms are more motivated to make the fewest blunders and errors possible (Bigus, 2015). As a result, respected audit firms do higher-quality

Figure 2: Proposed Conceptual Framework

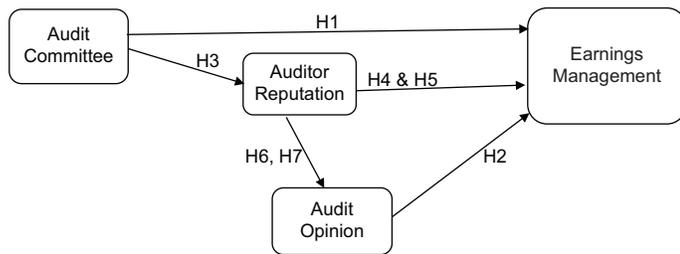


Table 1: Summary of Research Hypotheses

Path Relationship	Correspondent Hypotheses
Empirical Research Audit Committee Characteristics & Earnings Management	H1a: The size of audit committees has a negative impact on earnings management in public listed companies. H1b: The presence of independent audit committees has a negative impact on earnings management in public listed companies. H1c: The frequency of audit committees’ meetings has a negative impact on earnings management in public listed companies.
Empirical Research Audit Opinions & Earnings Management	H2: Earnings management is negatively related to receiving unqualified opinions in public listed companies.
1. Mediation effect of auditor reputation between the audit committee and earnings management	H3a: The larger the size of the audit committee, the higher the probability that the listed company will be audited by the big 4. H3b: The higher the independence of audit committees, the higher the probability that the listed company will be audited by the big 4. H3c: The more meetings held by audit committees, the higher the probability that the listed company will be audited by the big 4.
2. Mediation effect of auditor reputation between the audit committee and audit opinions	H4: Public listed firms audited by Big 4 audit firms engage less earnings management than firms audited by non-Big 4 auditors. H5a: Earnings management is negatively related to audit committee size when a public listed company is audited by a Big 4. H5b: Earnings management is negatively related to independent audit committee when public listed company audited by a Big 4. H5c: Earnings management is negatively related to the frequency of audit committee meetings when a public listed company is audited by a Big 4. H6: Public listed companies audited by Big 4 are more likely to receive unqualified opinions. H7a: Listed companies with big-size audit committees are more likely to receive unqualified opinions when they are audited by a Big 4. H7b: Listed companies with independent audit committees are more likely to receive unqualified opinions when they are audited by a Big 4. H7c: Listed companies with audit committees maintaining frequent meetings are more likely to receive unqualified opinions when they are audited by a Big 4.

audits because they can tell their clients that their financial data is of greater quality (Aronmwan et al., 2013). In this approach, customers whose audits were performed by Big 4 audit firms had higher profit comeback reflectivity than those companies whose audits were performed by non-Big 4 audit firms (Teoh and Wong, 1993). When compared to non-Big 4 audit companies, the Big 4 audit firms are more efficient at facilitating clients' income manipulation, with evidence indicating that non-Big 4 audit firm customers execute worse quality auditing because they have a higher quantity of discretionary accruals (Francis and Wang, 2008). Based on this argumentation, this research tends to empirically test the following hypotheses:

H_{7a}: Listed companies with big-size audit committees are more likely to receive unqualified opinions when they are audited by a Big 4.

H_{7b}: Listed companies with independent audit committees are more likely to receive unqualified opinions when they are audited by a Big 4.

H_{7c}: Listed companies with audit committees maintaining frequent meetings are more likely to receive unqualified opinions when they are audited by a Big 4.

Figure 2 depicts the conceptual framework. Table 1 summarizes the predicted seven relationships among the study variable shown.

4. CONCLUSION

This research intended to develop a conceptual model of earning management in public listed companies. We believe that the empirical investigation of the proposed model provides useful information for regulators and shareholders in mainly whether the audit committee and external auditor's opinion mitigate earnings management and enhance earnings quality, especially in firms with highly concentrated equity ownership. It also improves the internal and external supervision of earnings information of listed companies and alleviates the phenomenon of insufficient information for investors, to speed up the operation efficiency of the capital market. This study extends previous research on the influencing factors and mechanisms of earnings management through developing a comprehensive model to examine the direct impact of the audit committee, auditor reputation, and audit opinion on earnings management as well as examining the potential mediating role of auditor reputation.

REFERENCES

- Abbott, L.J., Parker, S. (2000), Auditor selection and audit committee characteristics. *Auditing: A Journal of Practice and Theory*, 19(2), 47-66.
- Abbott, L.J., Parker, S., Peters, G.F. (2004), Audit committee characteristics and restatements. *Auditing: A Journal of Practice and Theory*, 23(1), 69-87.
- Abdelmoula, L. (2020), Impact of auditor's competence, independence and reputation on the joint audit quality: The Tunisian context. *Academy of Accounting and Financial Studies*, 24(3), 1-10.
- Abdelsalam, O., Dimitropoulos, P., Elnahass, M., Leventis, S. (2016), Earnings management behaviors under different monitoring mechanisms: The case of Islamic and conventional banks. *Journal of Economic Behavior and Organization*, 132, 155-173.
- Agyei-Mensah, B.K., Yeboah, M. (2019), Effective audit committee, audit quality, and earnings management: Evidence from the Ghana Stock Exchange. *International Journal of Managerial and Financial Accounting*, 11(2), 93-112.
- Akerlof, G. (1970), The market for lemons: Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*, 84(3), 488.
- Alhadab, M. (2016), Auditor report and earnings management: Evidence from FTSE 350 companies in the UK. *Risk Governance and Control: Financial Markets and Institutions*, 6(4), 334-344.
- Alhadab, M., Clacher, I. (2018), The impact of audit quality on real and accrual earnings management around IPOs. *The British Accounting Review*, 50(4), 442-461.
- Al-Rassas, A.H., Kamardin, H. (2016), Earnings quality and audit attributes in high concentrated ownership market. *Corporate Governance: The International Journal of Business in Society*, 16(2), 377-399.
- Alves, S. (2013), The impact of audit committee existence and external audit on earnings management. *Journal of Financial Reporting and Accounting*, 11(2), 143-165.
- Alzoubi, E.S.S. (2016), Audit quality and earnings management: Evidence from Jordan. *Journal of Applied Accounting Research*, 17(2), 170-189.
- Arnedo, L., Lizarraga, F. and Sanchez, S. (2008), Discretionary accruals and auditor behaviour in code-law contexts: An application to failing Spanish firms. *European Accounting Review*, 17(4), 641-666.
- Aronmwan, E.J., Ashafoke, T.O., Mgbame, C.O. (2013), Audit firm reputation and audit quality. *European Journal of Business and Management*, 5(7), 66-75.
- Barac, Z.A., Vuko, T., Šodan, S. (2017), What can auditors tell us about accounting manipulations? *Managerial Auditing Journal*, 32(8), 788-809.
- Barzegar, B., Salehi, M. (2008), Re-emerging of agency problem: Evidences from practicing non-audit services by independent auditors. *Journal of Audit Practice*, 5(2), 55-66.
- Beasley, M.S., Carcello, J.V., Hermanson, D.R., Neal, T.L. (2009), The audit committee oversight process. *Contemporary Accounting Research*, 26(1), 65-122.
- Bergner, J., Marquardt, B.B., Mohapatra, P. (2020), The auditor reputation cycle: A synthesis of the literature. *International Journal of Auditing*, 24(2), 292-319.
- Bigus, J. (2015), Auditor reputation under different negligence regimes. *Abacus*, 51(3), 356-378.
- Bozeman, D.P., Kaemar, K.M. (1997), A cybernetic model of impression management processes in organizations. *Organizational Behavior and Human Decision Processes*, 69(1), 9-30.
- Carcello, G.V., Hollingsworth, C., Mastrolia, S.A. (2011), The effect of PCAOB inspections on Big 4 audit quality. *Research in Accounting Regulation*, 23(2), 85-96.
- Carp, M., Georgescu, I.E. (2019), The influence of audit opinions on the degree of real earnings management. The case of Romanian listed companies. *Audit Financiar*, 17(156), 666-679.
- Chaiwut, A., Lonkani, R., Tangsomchai, C., Suwanaphan, S. (2020), Reputation of external directors, auditors and earnings management. *International Journal of Business and Globalization*, 25(1), 73-94.
- Charitou, A., Lambertides, N., Trigeorgis, L. (2007), Earnings behaviour of financially distressed firms: The role of institutional ownership. *Abacus*, 43(3), 271-296.
- Chen, K., Zhou, J. (2007), Audit committee, board characteristics, and auditor switch decisions by Andersen's clients. *Contemporary Accounting Research*, 24(4), 1085-1117.
- Chen, K.Y., Lin, K.L., Zhou, J. (2005), Audit quality and earnings management for Taiwan IPO firms. *Managerial Auditing Journal*, 20(1), 86-104.

- Chi, W., Lisic, L.L., Pevzner, M. (2011), Is enhanced audit quality associated with greater real earnings management? *Accounting Horizons*, 25(2), 315-335.
- Cho, C., Wu, C. (2014), Role of auditor in agency conflict and corporate governance: Empirical analyses of Taiwanese firms. *Chinese Management Studies*, 8(3), 333-353.
- Christiantie, J., Christiawan, Y.J. (2013), Analysis of the influence of the corporate governance mechanism and the reputation of KAP on Profit management activity. *Business Accounting Review*, 1(1), 1–11.
- Christiani, I., Nugrahanti, Y.W. (2014), The effect of audit quality on earnings management. *Journal of Accounting and Finance*, 16(1), 52-62.
- Cohen, D., Zarowin, P. (2010), Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting and Economics*, 50(1), 2-19.
- Cohen, J.R., Krishnamoorthy, G., Wright, A.M. (2008), Form versus substance: The implications for auditing practice and research of alternative perspectives on corporate governance. *Auditing A Journal of Practice and Theory*, 27(2), 181-198.
- DeAngelo, L.E. (1981), Auditor size and audit quality. *Journal of Accounting and Economics*, 3(3), 183-199.
- DeFond, M., Zhang, J. (2014), A review of archival auditing research. *Journal of Accounting and Economics*, 58(2-3), 275-326.
- Dichev, I.D., Graham, J.R., Harvey, C.R., Rajgopal, S. (2013), Earnings quality: Evidence from the Field. *Journal of Accounting and Economics*, 56(2-3), 1-33.
- Ebrahim, A. (2007), Earnings management and board activity: An additional evidence. *Review of Accounting and Finance*, 6(1), 42-58.
- El-Dyasty, M.M., Elamer, A.A. (2021), The effect of ownership structure and board characteristics on auditor choice: Evidence from Egypt. *International Journal of Disclosure and Governance*, 18(4), 362-377.
- Elfouzi, N.H., Zarai, M.A. (2009), Auditor conservatism and earnings management: Evidence from Tunisia. *Corporate Ownership and Control*, 6(3), 61-68.
- Eriandani, R., Pirzada, K., Kurniawan, M.K. (2020), The role of auditor characteristics: Earnings management and audit committee effectiveness. *Entrepreneurship and Sustainability Issues*, 7(4), 3242-3252.
- Etemadi, H., Dehkordi, H.F., Amirkhani, K. (2013), Effect of auditor opinion on discretionary accruals behavior of distressed firms: Empirical evidences from Iran. *African Journal of Business Management*, 7(20), 1956-1965.
- Fan, J.P.H., Wong, T.J. (2005), Do external auditors perform a corporate governance role in emerging markets? Evidence from East Asia. *Journal of Accounting Research*, 43(1), 35-72.
- Ferris, G.R., Blass, F.R., Douglas, C., Kolodinsky, R.W., Treadway, D.C. (2003), Personal reputation in organizations. In: Greenberg, J., editor. *Organizational Behavior: The State of the Science*. 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates Publishers. p211-246
- Firth, M., Smith, A. (1992), Selection of auditor firms by companies in the new issue market. *Applied Economics*, 24(2), 247-255.
- Francis, J., Yu, M. (2009), Big 4 office size and audit quality. *Accounting Review*, 84(5), 1521-1552.
- Francis, J.R., Maydew, E.L., Sparks, H.C. (1999), The role of Big 6 auditors in the credible reporting of accruals. *Auditing: A Journal of Practice and Theory*, 18(2), 17-34.
- Francis, J.R., Wang, D. (2008), The joint effect of investor protection and big 4 audits on earnings quality around the world. *Contemporary Accounting Research*, 25(1), 157-191.
- Gajevszky, A. (2014), The impact of auditor's opinion on earnings management: Evidence from Romania. *Network Intelligence Studies*, 2(3), 61-73.
- Gerayli, M.S., Yanesari, A.M., Ma'atooifi, A.R. (2011), Impact of audit quality on earnings management: Evidence from Iran. *International Research Journal of Finance and Economics*, 66, 77-84.
- Gerged, A.M., Mahamat, B.B., Elmghaamez, I.K. (2020), Did corporate governance compliance have an impact on auditor selection and quality? Evidence from FTSE 350. *International Journal of Disclosure and Governance*, 17(2), 51-60.
- Ghosh, A., Marra, A., Moon, D. (2010), Corporate Boards, Audit Committees, and Earnings Management: Pre- and Post-SOX Evidence. *Journal of Business Finance and Accounting*, 37(9-10), 1145-1176.
- Guan, Y., Nancy, L., Wu, D., Yang, Z. (2016), Do school ties between auditors and client executives influence audit outcomes? *Journal of Accounting and Economics*, 61(2-3), 506-525.
- Hadriiche, M. (2015), Auditor reputation, audit opinion, and earnings management: Evidence from French banking industry. *Journal of Modern Accounting and Auditing*, 11(7), 341-352.
- Hakim, F., Omri, A. (2010), Quality of the external auditor, information asymmetry, and bid-ask spread: Case of the listed Tunisian firms. *International Journal of Accounting and Information Management*, 18(1), 5-18.
- Healy, P.M., Wahlen, J.M. (1999), A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13(4), 365-383.
- Hennes, K.M., Leone, A.J., Miller, B.P. (2011), Accounting Restatements and Auditor Accountability. Working paper, The University of Oklahoma, University of Miami, and Indiana University. Available from: <http://www.ssrn.com/abstract/41735675>
- Herbohn, K., Raguathan, V. (2008), Auditor reporting and earnings management: Some additional evidence. *Accounting and Finance*, 48(4), 575-601.
- Houque, M., Ahmed, K., van Zijl, T. (2017), Audit Quality, earnings management, and cost of equity capital: Evidence from India. *International Journal of Auditing*, 21(2), 177-189.
- Hribar, P., Yang, H. (2016), CEO overconfidence and management forecasting. *Contemporary Accounting Research*, 33(1), 204-227.
- Hsiao, F.H., Lin, S.H., Hsu, A.C. (2010), Earnings management, corporate governance, and auditor's opinions: A financial distress prediction model. *Investment Management and Financial Innovations*, 7(3), 29-40.
- Huang, R.D., Li, H. (2009), Does the market dole out collective punishment? An empirical analysis of industry, geography, and Arthur Andersen's reputation. *Journal of Banking and Finance*, 33(7), 1255-1265.
- Ioana, A.N.G., Mariana, M.A.N. (2014), Study regarding the impact of the audit committee characteristics on company performance. *Studies in Business and Economics*, 9(2), 5-15.
- Jensen, M.C., Meckling, W.H. (1976), Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Johl, S., Jubb, C.A., Houghton, K.A. (2007), Earnings management and the audit opinion: Evidence from Malaysia. *Managerial Auditing Journal*, 22, 688-715.
- Johnstone, K.M., Bedard, J.C. (2004) Audit Firm Portfolio Management Decisions. *Journal Accounting Research*, 42(4), 659-690.
- Kanagaretnam, K., Lim, C.Y., Lobo, G.J. (2010), Auditor reputation and earnings management: International evidence from the banking industry. *Journal of Banking and Finance*, 34(10), 2318-2327.
- Karla, M.J., Bedard, J.C. (2004). Audit firm portfolio management decisions. *Journal of Accounting Research*, 42(4), 659-690.
- Katmon, N., Al Farooque, O. (2017), Exploring the impact of internal corporate governance on the relation between disclosure quality and earnings management in the UK listed companies. *Journal of Business Ethics*, 142(2), 345-367.
- Khalil, M., Ozkan, A. (2016), Board independence, audit quality and

- earnings management: Evidence from Egypt. *Journal of Emerging Market Finance*, 15(1), 84-118.
- Klein, A. (2002), Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, 33(3), 375-400.
- Kohlbeck, M.J., Mayhew, B.W., Murphy, P.R., Wilkins, M.S. (2008), Competition for Andersen clients. *Contemporary Accounting Research*, 25(4), 1099-1136.
- Kouaib, A., Jarboui, A. (2014), External audit quality and ownership structure: Interaction and impact on earnings management of industrial and commercial Tunisian sectors. *Journal of Economics Finance and Administrative Science*, 19(37), 78-89.
- Krishnan, G.V. (2003), Does Big 6 auditor industry expertise constrain earnings management? *Accounting Horizons*, 17, 1-16.
- Kutha, N.M., Susan, M. (2021), Institutional ownership, external auditor reputation, financial leverage, and earnings management. *Journal of Economics and Business*, 4(1), 1-8.
- Lassoued, N.A., Attia, M., Sassi, H. (2018), Earnings management in Islamic and conventional banks: Does ownership structure matter? Evidence from the MENA Region. *Journal of International Accounting, Auditing and Taxation*, 30 (1), 85-105.
- Leventis, S., Dimitropoulos, P., Owusu-Ansah, S. (2013), Corporate governance and accounting conservatism: Evidence from the banking industry. *Corporate Governance an International Review*, 21(3), 264-286.
- Lin, J.W., Hwang, M.I. (2010), Audit quality, corporate governance, and earnings management: A meta-analysis. *International Journal of Auditing*, 14(1), 57-77.
- Lin, J.W., Li, J.F., Yang, J.S. (2006), The effect of audit committee performance on earnings quality. *Managerial Auditing Journal*, 21(9), 921-933.
- Liu, Z., Ouyang, B., Sun, X. (2015), CEO power and auditor choice. *International Journal of Finance and Banking Studies*, 4(4), 44-51.
- Maijoor, S.J. Varstraelen, A. (2006), Earnings management within Europe: The effects of member state audit environment, audit firm quality and international capital markets. *Accounting and Business Research*, 36(1), 33-52.
- Memiš, M.Ü., Çetenak, E.H. (2012), Earnings management, audit quality, and legal environment: An international comparison. *International Journal of Economics and Financial Issues*, 2(4), 460-469.
- Mishra, M., Malhotra, A.K. (2016), Audit committee characteristics and earnings management: Evidence from India. *International Journal of Accounting and Financial Reporting*, 6(2), 247-273.
- Newman, D.P., Patterson, E.R., Smith, J.R. (2005), The role of auditing in investor protection. *The Accounting Review*, 80(1), 289-313.
- Piot, C., Janin, R. (2007), External auditors, audit committees and earnings management in France. *European Accounting Review*, 16(2), 429-454.
- Porter, B., Simon, J., Hatherly, D. (2003), *Principles of External Auditing*. 2nd ed. England: John Wiley and Sons.
- Quick, R., Schenk, N., Schmidt, F., Towara, T. (2018), The impact of corporate governance on auditor choice: Evidence from Germany. *Journal of Management and Governance*, 22, 251-283.
- Qutainah, M.A., Song, L., Wu, Q. (2013), Do Islamic banks employ less earnings management? *Journal of International Financial Management and Accounting*, 24(3), 203-233.
- Rosner, R.L. (2003), Earnings manipulation in failing firms. *Contemporary Accounting Research*, 20(2), 361-408.
- Rusmin, R. (2010), Auditor quality and earnings management: Singaporean evidence. *Managerial Auditing Journal*, 25(7), 618-638.
- Salehi, M., Abedini, B. (2008), Iranian angle: Worth of audit report. *SCMS Journal of Indian Management*, 4, 82-90.
- Salem, R., Usman, M., Ezeani, E. (2021), Loan loss provisions and audit quality: Evidence from MENA Islamic and conventional banks. *The Quarterly Review of Economics and Finance*, 79, 345-359.
- Salihi, A.A., Jibril, R.S. (2015), The effect of board the size and audit committee the size on earnings management in Nigerian consumer industries companies. *International Journal of Innovative Research and Development*, 4(3), 1-10.
- Salleh, N.M. (2014), Audit committee and earnings management: Pre and post MCGG. *International Review of Management and Business Research*, 3(1), 307-318.
- Sasaninejad, Y., Madrakian, H., Khodabakhsh, A. (2014), *Investigating the Relationship between Corporate Governance Ranking and Earnings Management*. United Arab Emirates: KNE Publishing.
- Sharma, V.D., Kuang, C. (2014), Voluntary audit committee characteristics, incentives, and aggressive earnings management: Evidence from New Zealand. *International Journal of Auditing*, 18(1), 76-89.
- Skinner, D.J., Srinivasan, S. (2012), Audit quality and auditor reputation: Evidence from Japan. *The Accounting Review*, 87(5), 1737-1765.
- Soliman, M.M., Ragab, A.A. (2014), Audit committee effectiveness, audit quality and earnings management: An empirical study of the listed companies in Egypt. *Research Journal of Finance and Accounting*, 5(2), 155-166.
- Sun, J., Lan, G., Liu, G. (2014), Independent audit committee characteristics and real earnings management. *Managerial Auditing Journal*, 29(2), 153-172.
- Sun, J., Liu, G. (2011), Client-specific litigation risk and audit quality differentiation. *Managerial Auditing Journal*, 26(4), 300-316.
- Taktak, N.B., Mbarki, I. (2014), Board characteristics, external auditing quality, and earnings management: Evidence from the Tunisian banks. *Journal of Accounting in Emerging Economies*, 4(1), 79-96.
- Tendeloo, B.V., Vanstraelen, A. (2008), Earnings management and audit quality in Europe: Evidence from the private client segment market. *European Accounting Review*, 17(3), 447-469.
- Teoh, S.H., Wong, T.J. (1993), Perceived auditor quality and the earnings response coefficient. *Accounting Review*, 68(2), 346-366.
- Vafeas, N. (2005), Audit committees, boards, and the quality of reported earnings. *Contemporary Accounting Research*, 22(4), 1093-1122.
- Vichitsarawong, T., Pornupatham, S. (2015), Do audit opinions reflect earnings persistence? *Managerial Auditing Journal*, 30(3), 244-276.
- Zehri, F., Shabou, R. (2011), Audit quality, corporate governance and earnings management in the context of Tunisian firms. *Journal of Administrative and Economics Science*, 1(1), 67.
- Zehri, F., Zgarni, I. (2020), Internal and external corporate governance mechanisms and earnings management: An international perspective. *Accounting and Management Information Systems*, 19(1), 33-64.
- Zgarni, I., Hlioui, K., Zehri, F. (2016), Effective audit committee, audit quality and earnings management: Evidence from Tunisia. *Journal of Accounting in Emerging Economies*, 6(2), 138-155.