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Earnings Management and Board Characteristics: Evidence from an Emerging Market

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Master in Accounting

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Resumo

A presente dissertação tem como principal objetivo analisar o impacto das características do conselho de administração na manipulação de resultados nos mercados emergentes, utilizando como referência empresas cotadas na *Indonesia Stock Exchange* entre 2018 e 2022, resultando numa amostra de 195 observações.

O nível da manipulação dos resultados nas empresas foi calculado através do método dos *accruals* discricionários, utilizado o modelo de Kothari *et al.* (2005). Para mensurar as características do conselho de administração dimensão, independência e diversidade foram utilizados os valores do número total de diretores, a percentagem de diretores independentes e a percentagem de mulheres presentes no conselho, como calculadas em estudos anteriores. Todos os dados foram obtidos através da base de dados *DataStream* da *Thomson Reuters*.

Os resultados obtidos através de regressões lineares múltiplas indicam que a presença de mulheres no conselho de administração diminui a manipulação de resultados, tal como de acordo com a literatura anterior. Foi ainda obtida evidência estatística de que uma maior percentagem de diretores independentes aumenta o nível de manipulação de resultados. No entanto, os resultados indicam que a dimensão do conselho de administração não tem efeito na manipulação de resultados.

As conclusões apresentadas contribuem para reforçar a ideia de que a mitigação da manipulação de resultados por via da presença de mulheres no conselho de administração é uma realidade nos mercados emergentes. Em contrapartida, mercados emergentes precisam de regulamentos que fortaleçam a autonomia dos diretores independentes, para que possam exercer adequadamente funções de monitoração e restringir a manipulação de resultados.

Abstract

The main objective of this dissertation is to analyse the impact of the board of directors' characteristics on earnings management in emerging markets, using as reference companies listed on the Indonesia Stock Exchange between 2018 and 2022, which resulted in a sample of 195 observations.

The level of earnings management in these companies was calculated using the discretionary accruals method, specifically the performance model from Kothari *et al.* (2005). The total number of directors, the ratio of independent directors and the percentage of women on the board, as calculated in previous studies, were used to measure the characteristics of board size, independence and diversity. All the data was obtained from the Thomson Reuters DataStream database.

The results obtained through multiple linear regressions indicate that the presence of women on the board of directors decreases earnings management based on accruals, as previously expected. Statistical evidence was also obtained that a higher percentage of independent directors increases the level of earnings management. However, the outcomes indicate that the size of the board of directors does not affect earnings management.

The findings of this dissertation reinforce the idea that the reduction of earnings manipulation via the presence of women on the board of directors is a reality in emerging markets. On the other hand, emerging markets need regulations that fortify the autonomy of independent directors so that they can adequately exercise monitoring functions and restrict earnings management.

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Abbreviations

AEM	Accrual-based Earnings Management
BoD	Board of Directors
BRICS	Group of economies of Brazil, Russia, India, China, and South Africa
EM	Earnings Management
GAAP	Generally Accepted Accounting Principles
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
MINT	Group of economies of Mexico, Indonesia, Nigeria and Turkey
OECD	Organisation for Economic Cooperation and Development
PT	Perseroan Terbatas
REM	Real Earnings Management
ROA	Return on Assets
S&P	Standard & Poor's Index
SEC	Securities and Exchange Commission
SIC	Standard Industrial Classification
UK	United Kingdom
USA	United States of America
UU PT	Undang Tentang Perseroan Terbatas

1. Introduction

Earnings management (EM) and corporate governance are two topics that have received extensive study and research in the past few decades (Afifa *et al*., 2022; Khan *et al*., 2022)). Earnings management is a crucial element in determining the quality of accounting information and is closely related to reporting, transparency, and information asymmetry (Dechow *et al*., 2010). According to the International Accounting Standards Board (IASB), the main objective of financial reporting is to disclose the organisation's financial information reliably and transparently to help its users make relevant decisions depending on the organisation's financial position and performance (IASB, 2012). Additionally, following the International Financial Reporting Standards (IFRS) Foundation (2018: A26), the faithful representation must be *"complete, neutral and free from error"* to be perfect. Therefore, earnings management can harm the faithful interpretation and comparison of financial statements for all the stakeholders (Healy and Wahlen, 1998).

Given that earnings management has already been extensively studied, this practice is closely associated with various economic theories, such as agency theory (Shleifer and Vishny, 1997; Lara *et al*., 2017; Orazalin, 2020) and resource dependency theory (Hillman and Dalziel, 2003; Orazalin, 2020; Mangala and Singla, 2021), as these theories define earnings management as the product of conflicting interests between shareholders and managers (Shleifer and Vishny, 1997), and as a dependency on external factors that lead to the manipulation of results to fulfil those needs (Hillman and Dalziel, 2003).

Since the 1990s, developing markets have become a larger portion of global commerce due to their strong development, potential and favourable demographic changes (Bruton *et al*., 2013). Over the past three decades, there has been an increasing need in the academic community to comprehend the complexity of developing markets due to the expansion of these regions' economies (Bortoluzzi *et al*., 2018). Both academics and practitioners have increased their understanding of emerging markets due to the growing interest in several economic and accounting matters (Kumar *et al*., 2022). One of the accounting subjects is earnings management; however, there is still a gap to fill in the literature. Although there are some studies about the nexus between earnings management and various board characteristics in emerging markets, Indonesia has none. Concerning corporate governance, it is crucial to have a strong board of directors (BoD) who represent shareholders' interests (Jensen and Meckling, 1976), mainly in emerging markets, which are characterised by rapid income

growth but with some failures in the sustainable development of a developed country (Bruton *et al.*, 2013; Kumar *et al.*, 2022).

In the literature on earnings management, some researchers have found relationships between earnings management based on accruals and the different characteristics of the board, with a mix of results for all the variables. Regarding the board size, based on agency theory, it was previously found that the bigger the board, the less earnings management companies practice in developed markets (Peasnell *et al.*, 2005) and emerging markets (Hashim and Devi, 2008; Khalil and Ozkan, 2016; Orazalin, 2020). On the other hand, Rahman and Ali (2006) suggested that on a smaller board, directors might be more focused on reducing earnings management. Concerning board independence, based on the resource dependency theory, it was predominantly found that the presence of independent directors minimises the practice of earnings management in emerging markets, as they are unaffected by managers' opinions and pressures (Al Daoud, 2018; Musa *et al.*, 2023; Khan *et al.*, 2022; Afifa *et al.*, 2022). However, some researchers reported that only board independence *per se* is insufficient to reduce earnings management practices, but mainly its knowledge and value (Chatterjee, 2020). Moreover, Waweru and Prot (2018) argue that board independence increases the practice of earnings management, which means that the higher the ratio of outside directors, the more the company manipulates earnings.

Finally, the board of directors' gender diversity has been widely analysed recently in the earnings management context. Although the role of women in business has developed considerably in recent years in developed countries, there is still a great concern about it in emerging markets (Ionascu *et al.*, 2018). Indeed, Waweru and Prot (2018) discovered a positive relationship between the proportion of women on BoD and earnings management in African countries. Nevertheless, most studies indicate that the higher the proportion of women on the board, the lower the level of earnings management since they are generally more ethical and socially responsible than men (Wahid, 2018; Anh and Khuong, 2022; Orazalin, 2020). Therefore, most literature supports the idea that large boards with a high level of independence and gender diversity reduce the practice of performance management.

Hence, this dissertation aims to analyse the impact of the board of directors' characteristics on earnings management in listed firms from emerging markets. As more specific objectives, this study intends to (i) relate the board's size with the level of earnings management; (ii) relate the board independence with the level of earnings management; and (iii) study the impact of women in board positions on earnings management.

The empirical analysis is based on a final sample of 195 observations of companies listed in Indonesia, covering 5 years (2018 to 2022). The methodology used is quantitative, with panel data analysis and multiple linear regression models used to investigate the relationship between the variables analysed. For the investigation, the performance model of Kothari *et al*. (2005) is used to determine discretionary accruals and estimate earnings management.

In order to implement this study, the following main research question was formulated: How does the size of the board, its independence and the presence of women on the board mitigate the practice of earnings management in emerging market companies?

The main results of our study indicate that the presence of women on the board is a key factor in minimising earnings management, as expected, which is aligned with previous research concerning both developed and emerging markets (Kyaw *et al.*, 2015; Anh and Khuong, 2022; Orazalin, 2020). Regarding board size, our findings do not meet the leading idea that it mitigates earnings management. Still, the outcome that board size does not influence the practice of earnings management is congruent with that obtained by Waweru and Prot (2018) and Mangala and Singla (2021), as more than the number of directors, what matters to decrease earnings management is their quality. On the other hand, higher board independence did not play a significant role in constraining earnings management in Indonesia, going against what was initially expected. This outcome is linked to the fact that 95 per cent of the companies are family-owned and, therefore, have a direct or indirect influence on the independent directors (Waweru and Prot, 2018; Widagdo *et al*., 2021; Rahman and Ali, 2006).

This study contributes to expanding the literature on earnings management in emerging markets, reinforcing the idea of Orazalin (2020) and Anh and Khuong (2022) that mitigating earnings management through the presence of women on the board is a reality in emerging markets. On the other hand, it supports the idea of Waweru and Prot (2018) that emerging markets need regulations that strengthen the autonomy of independent directors so that they can adequately exercise their monitoring functions to constrain earnings management (Widagdo *et al*., 2021). Thus, this information also impacts other stakeholders who seek trustworthy information from companies with good corporate governance (Afifa *et al.*, 2022).

The structure of the dissertation includes, in addition to this introduction chapter, four additional sections: the Literature Review, Methodology, Results and Conclusion. In the Literature Review section, the relevant literature about earnings management and corporate governance is presented, and the hypotheses in the investigation are formulated, followed by the Methodology section, which describes the methodology and research methods used in the

study. The Results chapter analyses and discusses the results obtained in this study and the appropriate interpretation of previously established hypotheses. Finally, the Conclusion chapter sets out the main conclusions, the contributions, some limitations of the research conducted, and future recommendations for subsequent studies on this subject.

2. Literature Review

2.1. The Concept of Earnings Management

According to the International Accounting Standards Board (IASB) (2012), through IFRS 1, one of the objectives of adopting the International Financial Reporting Standards is to *"ensure that an entity's first IFRS financial statements (...) contain high-quality information that is transparent for users and comparable over all periods presented"* (IASB, 2012: A100). Also, according to the IFRS Foundation (2018), the faithful representation of financial reports is one of the qualitative characteristics of useful financial information, as well as a core principle since the foundation of the IASB. Following the IFRS Foundation (2018, A26), the faithful representation, to be perfect, is to be *"complete, neutral and free from error"*. It is also strictly related to earnings management, as the last one may harm earnings quality (Dechow *et al.*, 2010).

Earnings management is a subject matter that has been widely studied and researched in the last few years, especially since the research from Jones (1991) and Dechow *et al.* (1995), who found ways to measure earnings management. It is a fundamental theme in the business world and a critical factor concerning accounting information quality, being also closely related to reporting, transparency and information asymmetry (Dechow *et al.*, 2010). Hence, it is a critical factor regarding the supervision of earnings quality for regulatory authorities in every country and other organisations worldwide. Moreover, it is an aspect of significant importance not only for all shareholders but also for potential investors.

Through the years, various definitions have been given to earnings management and the concept has been developing. According to Arthur Levitt, the Securities and Exchange Commission (SEC) Chairman in 1998, earnings management constitutes a significant and deliberate manipulation of results (Levitt, 1998). Schipper (1989: 92) defines earnings management as a *"purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain"*. Also, according to Healy and Wahlen (1998: 372), earnings management *"occurs when managers use their own judgement in financial reporting and in structuring transactions to alter financial reports to mislead stakeholders"*, which will influence the market's perspective of the firm. With a similar philosophy, Mulford and Comiskey (2002: 51) said that earnings management is *"the active manipulation of earnings towards a predetermined target"*. According to those authors, managers who alter the firm's accounting procedure do so to benefit themselves or the company.

These are narrower definitions compared to the one given by Walker (2013: 446), who defines earnings management as *"the use of managerial discretion over accounting choices, earnings reporting choices, and real economic decisions to influence how underlying economic events are reflected in one or more measures of earnings"*. This definition is undoubtedly broader than the last ones, assuming that not all earnings management is harmful and illegal, but that it can be legal and according to all accounting principles. Therefore, it is possible to state that there is no single definition of earnings management. This may make it difficult to measure the practice's scope and identify earnings management cases (Mangala and Singla, 2021).

In previous literature, the reasons companies engage in earnings management have been extensively discussed, as well as the techniques used for that purpose (Makhaiel and Sherer, 2017). According to Walker (2013), there are three main motives for managers and firms to engage in earnings management. The first one is that managers want to meet specific contractual goals, usually associated with firms' objectives regarding reported earnings and firm performance. According to Xie *et al.* (2003), managers are rewarded both directly (through wages and bonuses) and indirectly (via business prestige and potential promotions), depending on their performance regarding a predetermined target. Managers are persuaded to misrepresent the firms' accounting results to boost their compensation since they risk not meeting that goal. The second reason is to influence reporting statements and information used by external investors or intermediaries to create unrealistically optimistic expectations for them. The third goal is to affect third parties such as competitors, customers, regulators and others with dubious financial information, so it changes their actions in favour of the company (Walker, 2013). On the other hand, Martin and Campbell (2016) say that earnings management involves significant costs for the business in addition to its financial advantages. Thus, the reasons for adopting earnings management are numerous and have different purposes, making it crucial for the BoD to monitor managers closely (Lara *et al.*, 2017).

Regarding the techniques, there are two main types of earnings management: accrual-based earnings management (AEM) and real earnings management (REM) (Cardeira, 2012; Achleitner *et al.*, 2014). AEM changes the accrual method to control earnings, which will affect future accounting periods but will not eventually jeopardise the firm's actual cash flows. Accruals are based on forecasts or estimations and result from the accrual basis of accounting in which the impacts of transactions and other events are recognised when they occur, being recorded in the accounting books and reported in the financial statements of the respective periods, regardless of their cash-flows (Cardeira, 2012). Even though the accrual

basis gives some comparability to financial statements from different firms and years, once it represents all the transactions that happened in a specific year regardless of the receipt or payment date of the income or expenses, it also has some subjectivity, as it is always possible to have different approaches to the principles. Hence, AEM is a technique within the rules and regulations of Generally Accepted Accounting Principles (GAAP). However, a more aggressive earnings management strategy can lead to a distortion of the company's financial position, leading to misguided investment decisions by investors and an increasing information asymmetry between investors and managers (Kazemian and Sanusi, 2015; Riwayati *et al.*, 2016). Therefore, controlling this practice for all stakeholders' interests is important.

2.2. Earnings Management and Economic Theories

After a first approach to earnings management, certain questions arise: why and how are earnings management and firms' boards related? The answer is associated with various economic theories, such as Agency Theory, one of the most popular frameworks used by accounting researchers to explain the occurrence of earnings management, among other subjects. Agency theory describes why the managers (agents) and the owners (principals) want different things for the company. Shleifer and Vishny (1997) say that the core of the agency problem is the separation of administration and funding. In other words, it is because managers tend to act for their self-interest and benefits (profit and consequent bonus) and not for the company and shareholders (maximise all the stakeholders' interests). The greater the divergence in objectives, the greater the conflict of interest and, in turn, the agency cost, jeopardising the creation of value for companies (Guizani and Abdalkrim, 2022). Regarding earnings management, agency theory states that managers may use earnings management to cut down on controlling and monitoring costs (Jensen and Meckling, 1976). According to Dechow *et al.* (1995), managers with higher incentives to manage earnings, such as meeting contractual goals to get extra rewards or meet the investors' expectations, are likelier to do so. Furthermore, according to prior research, corporate governance and the board's monitoring function, which was drawn from the agency theory, is essential for reducing agency issues, keeping an eye on managerial choices, safeguarding the interests of shareholders, and ensuring accurate financial reporting (Lara *et al.*, 2017; Orazalin, 2020).

From an opportunistic perspective, Scott (2012) says managers tend to engage in earnings management to satisfy their interests instead of the shareholders', which they should meet. The owner hires a manager to provide the best work they can do, including operational

decision-making, and they are expected to lead good corporate governance (Jensen and Meckling, 1976). When managers live up to expectations by managing firms properly, they might get bonuses, increasing managers' desire to match the firms' financial goals. Kazemian and Sanusi (2015) suggest that the owners cannot observe and monitor all the decisions taken by the managers, thus contributing to increased information asymmetry. Therefore, managers have reasons and techniques to expropriate the company's earnings and, consequently, conflict of interest may often occur between shareholders and managers.

Although agency theory explains a large part of the existence of earnings management, it must be reinforced by complementary approaches. As shown in Table 2.1, previous literary works also strengthen the importance of other economic frameworks related to earnings management, such as resource dependency theory.

The resource dependency theory states that businesses will encounter dependencies as they use external resources, while fulfilling them is a crucial managerial duty. Companies use external connections to reduce risk and uncertainty between the firm and essential sources (Pfeffer and Salancik, 2003). Also, according to the resource dependence theory, the board of directors' allocation of resources has a direct impact on the performance of the company since it minimises the firm's dependability on outside factors (Boyd, 1990; Hillman and Dalziel, 2003; Orazalin, 2020). Hence, directors provide various resources, including information, expertise and proficiency, which will lower uncertainty and, consequently, lower transaction costs. In other words, organisations rely on third-party units within society to help them achieve their aims and objectives. Still, the board might decrease this dependence because of its skills, background and knowledge, which might assist in reducing the scope of earnings management activities (Kesner and Johnson, 1990; Pfeffer and Salancik, 2003). On the other hand, according to the resource dependence theory, affiliated directors make more informed decisions because they are more familiar with the business environment and have easy access to information (Mangala and Singla, 2021).

2.3. Corporate Governance and Indonesian Framework

According to Mallin (2004) and Monks and Minnow (2004), there are four essential roles for the board of directors: give advice and new ideas, oversee laws compliance, connect the firm with external stakeholders, and monitor and control the managers' jobs. The last one is crucial to prevent earnings management, as the BoD should govern the management to secure the shareholders' interests. Nevertheless, asymmetric information between managers and

directors makes it difficult for the latter to control the first, leading them to incur agency costs (Kazemian and Sanusi, 2015).

Over the years, the importance of corporate governance on firms' performance has been studied a lot (Outa *et al*., 2017). According to Babatunde and Olaniran (2009), corporate governance can be divided into internal and external mechanisms for good governance. Regarding the internal mechanisms, for perfect company governance, the shareholders, the board of directors and managers must be aligned to provide good results to all the stakeholders. As the shareholders invest capital in a firm and the managers can manage that capital, it is crucial to have a strong board of directors, who represent shareholders' interests and are the connecting element between both parts, being a vital mechanism of corporate governance (Jensen and Meckling, 1976). Additionally, Babatunde and Olaniran (2009: 334) reinforce the importance of an impartial board with a suitable size and fixed directors, as *"making the board more effective is at the centre of the corporate governance debate"*.

Concerning the external mechanisms of corporate governance, Babatunde and Olaniran (2009) emphasise the legal and regulatory obligations, as well as the equity markets. The legislation and other regulations define the guidelines and standards for fairness between rival firms regarding transparency, accountability and responsibility at the level of shareholder protection, customers, suppliers and even employees. The equity mark*et al*so plays a vital role as an external mechanism, as the viability and success of organisations are therefore reflected in the share price, which influences shareholders' decisions to invest or not. This market-based control, share price volatility, and shareholder involvement keep managers focused on their success as well as the performance of the organisation (Babatunde and Olaniran, 2009).

According to Riwayati *et al*. (2016), corporate governance strives to reduce asymmetric information, as it allows published financial information to be trustworthy and reliable for shareholders and other stakeholders. Thus, companies that often manage results present higher agency problems than companies that do not manage theirs. Hence, suitable corporate governance mechanisms regarding board characteristics help decrease earnings management by reducing company costs (Lara *et al*., 2017; Setia-Atmaja *et al*., 2011). Corporate governance can be summed up in terms of a set of principles that are generally applicable to firms. These five values are, namely: transparency (reporting more information and clarifications than strictly necessary), ethical accountability, responsibility, independence and equality (Babatunde and Olaniran, 2009; Dharma and Nugroho, 2014). The relationship between both is very dependent on each industry. In a study about corporate governance and companies' performance regarding Malaysian firms, Amin and Nor (2019) highlight the

importance not only of the industry but also the growth and size of the firm on the relation between corporate governance and firms' performance.

The first studies on earnings management based on accruals and corporate governance were mainly related to developed countries, especially the USA (United States of America) and United Kingdom (UK), as these countries are two of the most studied by researchers due to their solid economies and influence over other world economies. (Klein, 2002; Uzun *et al.*, 2004; Peasnell *et al.*, 2005; Xie *et al.*, 2003; Sun *et al.*, 2011). Promptly, researchers also studied Europe as a whole, given the importance of the European Union around the world (Kyaw *et al.*, 2015). Panel B of Table 2.1 shows a resume of empirical studies on earnings management and corporate governance in developed countries. Other investigators also started studying emerging markets due to their growing importance in the global economy, besides their higher level of volatility, less strict and demanding market regulators and more corporate governance problems. Research on earnings management in emerging markets is mainly focused on India, Malaysia, Jordan and China, as it is possible to observe in panel A of Table 2.1 (Rahman and Ali, 2006; Sarkar *et al.*, 2008; Hashim and Devi, 2008; Ye *et al.*, 2010; Daoud, 2018; Chatterjee, 2020; Mangala and Singla, 2021; Afifa *et al.*, 2022).

According to Bruton *et al.* (2013) and Kumar *et al.* (2022), an emerging market stands out for its rapid income growth and for incorporating some salient features of a developed market but not yet reaching the complete status of a developed country in all its dimensions. When it comes to emerging markets, the economies of Brazil, Russia, India, China and South Africa (BRICS) are top of mind. Still, there is another group of countries with rapid economic growth: Mexico, Indonesia, Nigeria and Turkey (MINT). With a total population of 273.753.191 people in 2021, Indonesia ranks fourth among countries with the largest population (Worldbank, 2022). In addition, its population is primarily young, which is a critical factor for the future of the country and its economy, one of the reasons why it is considered an emerging market, especially a MINT. Also, Indonesia is a G20 country and the largest economy in Southeast Asia. According to the Organisation for Economic Co-operation and Development data (OECD, 2022), Indonesia is expected to grow 11.3% by the end of 2023, compared to 2019, right before the COVID-19 pandemic, being the seventh best country worldwide (Figure 1). Thus, Indonesia will have a strong world economy in the coming years.
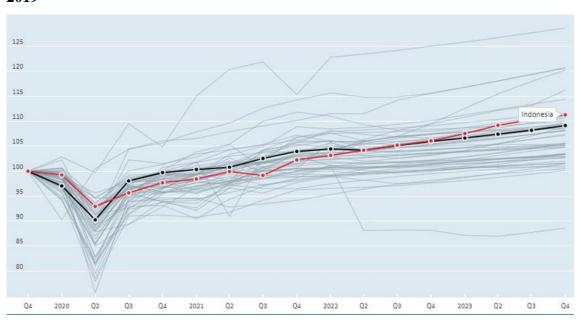
Figure 1 – Expected growth in Indonesian economy from 2020 to 2023, compared to 2019

Source: OECD

The law of Indonesia is based on a civil law system, intermixed with local customary law and Roman-Dutch law. Law No. 40 of 2007, also known as the Companies Act or Undang Tentang Perseroan Terbatas (UU PT), regulates the composition and responsibilities of the companies' board of directors in Indonesia, providing guidelines and requirements regarding the composition of the board of directors of a limited liability company, or Perseroan Terbatas (PT) (Rosser and Edwin, 2010). A company must have at least one director and there is no maximum limit on the number of directors a company can have. However, the board of directors must consist of an odd number of members to avoid a deadlock in voting. Also, according to Law No. 40 of 2007, regarding independent directors unrelated to the business and any stakeholders, the legislation suggests their presence to present an unbiased viewpoint and contribute to good corporate governance (Law No. 40, 2007).

Concerning the presence of women on the board of directors, a specific minimum or quota for female representation on company boards is not expressly required by the UU PT (Law No. 40, 2007). However, it urges organisations to support gender inclusion and diversity in board compositions. It acknowledges the need for an equitable representation of women in leadership roles and exhorts businesses to consider diversity principles when hiring (Law No. 40, 2007). Thus, it is vital to study whether the presence of women in companies listed on the Indonesian Stock Exchange restricts the practice of earnings management. If confirmed, it

opens a new discussion on the mandatory presence of women on the BoD through new legislation and can help improve the role of women in a developing society (Orazalin, 2020).

2.4. Earnings Management and Corporate Governance: Hypothesis Development

Board Size

Board size is an essential board characteristic that can influence earnings management, even though it can have an ambiguous influence. On the one hand, the more diverse the board, the more perspectives, skills and backgrounds to provide different information or opinions and, consequently, better decisions. Larger boards are also more likely to bring more experienced directors (Xie *et al.*, 2003). In addition, Peasnell *et al.* (2005), in a study about UK firms, found evidence that the larger the board is, the less likely it is for a firm to have earnings management. Another study regarding publicly traded firms from the USA also proved the same influence of board size in mitigating earnings manipulation (Klein, 2002). Regarding emerging economies, the idea that the larger the board, the lower the level of earnings management is also corroborated in four other studies about Malaysia, Egyptian, Jordan and Kazakh companies since it was demonstrated that a larger number of directors helps to oversee and monitor managers and their practices (Hashim and Devi, 2008; Khalil and Ozkan, 2016; Afifa *et al*., 2022; Orazalin, 2020).

On the other hand, some defend that too many directors can delay decision-making, making the board less effective in monitoring functions (Jensen, 1993). There is also evidence of a positive association between earnings management and board size in emerging markets. In a study about Malaysian firms, Rahman and Ali (2006: 799) reported the mentioned positive association once *"a smaller board size could mean that the directors are more focused in solving any issues that may arise"*.

However, it was also found that board size might not affect restraining earnings management in studies concerning emerging economies such as Kenya and Tanzania (Waweru and Prot, 2018) and India (Mangala and Singla, 2021). Nevertheless, given most of the prior literature (Hashim and Devi, 2008; Khalil and Ozkan, 2016; Afifa *et al*., 2022; Orazalin, 2020) and the agency theory (Afifa *et al*., 2022; Orazalin, 2020), it is expected that the bigger the board, the lower the level of earnings management, since there will be more monitoring functions to control managers. In this way, the first hypothesis is formulated:

H1: The dimension of the board is negatively and significantly associated with EM.

Board Independence

Earnings management is hugely related to the agency theory and asymmetric information from the managers, which is even bigger between managers and independent directors, who tend to have less information about the company (Orazalin, 2020). In fact, Waweru and Prot (2018) found a positive association between board independence and earnings management, meaning that the higher the percentage of outside directors, the more the firm engages in earnings management. In addition, Khalil and Ozkan (2016) reported that the ratio of independent directors does not reflect entirely the constraint of EM in a study on non-financial publicly listed firms from Egypt. Also, Orazalin (2020) provides weak evidence of board independence's impact on earnings management in Kazakh firms. Moreover, Chatterjee (2020) and Sarkar *et al*. (2008) state that only board independence *per se* is insufficient to prevent earnings management practices, but mainly its experience and quality.

Independent administrators may have access to resources unavailable to management, such as their network, which, according to the resource dependency theory, can help the organisation acquire the required resources (Afifa *et al.*, 2022). They also have a higher probability of being unaffected by executives' opinions and pressures. Independent directors can provide various ideas and inputs to the discussion and decision-making of the board. Prior literature suggests that independent directors possess better supervising competencies that minimise the probability of earnings management practices and other unethical or illegal activities (Larcker *et al.*, 2007). Also, research by Klein (2002) provided evidence that firms with boards constituted by less than 50% of independent directors tend to have fewer abnormal accruals. Other studies also support the idea that more independent directors' presence decreases earnings management use in developed economies (Uzun *et al.*, 2004; Peasnell *et al.*, 2005).

Regarding emerging markets, this insight has also been found in several studies on countries such as Jordan (Daoud, 2018; Afifa *et al.*, 2022), Nigeria (Musa *et al*., 2023) and Pakistan (Khan *et al.*, 2022). Hence, due to the mentioned theories and findings in the previous studies (Daoud, 2018; Afifa *et al.*, 2022; Musa *et al*., 2023; Khan *et al.*, 2022), a higher ratio of independent directors is expected to decrease the practice of earnings management in emerging markets, as the second hypothesis is formulated:

H2: The independence of the board is negatively and significantly associated with EM.

Board Diversity

While in developed countries there are already lots of discussions regarding the importance of women in today's society and companies, in emerging countries that debate is slightly late due to other critical issues such as human rights (Ionascu *et al.*, 2018). That way, women tend to be inserted in adverse environments and gender biases, which might constrain women in work-related activities (Madison *et al.*, 2022). In fact, Waweru and Prot (2018) found that the presence of women on BoD not only did not decrease but instead increased the management of results in African countries, suggesting that it could be necessary for emerging economies to change their corporate governance cultures from ones that emphasise merely following rules and regulations to ones that embody good governance. In addition, a few studies have found no impact of the presence of women on the board on the level of earnings management, including a study from Sun *et al.* (2011) about S&P firms and Ye *et al.* (2010) about Chinese A-share market companies.

Apart from that, several studies say that women are generally more ethically and socially responsible than men and are less likely to incur in earnings management (Khazanchi, 1995; Wahid, 2018). Prior research found evidence that women directors attenuate earnings management at European companies (Kyaw *et al.*, 2015) and UK firms (Lara *et al.*, 2017), developed economies where gender equality is relatively high, compared to emerging markets. Furthermore, focusing exclusively on emerging markets, there is also literature supporting the idea that women are more ethically responsible than men and that their presence on the board of directors mitigates the practice of earnings management, such as a study from Luo *et al.* (2017) about Chinese-listed organisations. Also, studies from Anh and Khuong (2022) and Orazalin (2020) both reported a negative correlation between the percentage of women directors and earnings management in Vietnam and Kazakhstan companies, supporting the notion that having women on the board of directors reduces the adoption of earnings manipulation also in emerging markets. Thus, regarding most of the prior literature and leaning on the previous framework, the final hypothesis about board diversity is formulated as follows:

H3: The diversity of the board is negatively and significantly associated with EM

Table 2.1 – Empirical studies on earnings management and board characteristics (emerging and developed markets)

Author(s)	Objective(s)	Sample	Theory(ies)	Earnings Management Measurement	Main Results
Panel A: Emerging Markets					
Afifa *et al.* (2022)	Investigate the nexus between board characteristics and EM.	Jordan (2012-2019)	Agency Theory	Modified Jones Model Dechow *et al.* (1995)	CEO/chairman duality positively impacts EM practices, while board size and independence correlate negatively.
Anh and Khuong (2022)	Explore the link between gender diversity board and EM.	Vietnam (2015-2019)	Agency Theory; Resource Dependency Theory	Performance Model - Kothari *et al.* (2005); REM (Roychowdhury, 2006)	According to the study, women on board have a favourable link with REM, while it is adversely correlated with accrual-based earnings management.
Chatterjee (2020)	Examine how various board characteristics influence earnings management behaviour in India.	India (2009-2016)	Agency Theory	Modified Jones Model Dechow *et al.* (1995)	The findings show that board independence does not always aid in decreasing EM. Instead, diligent boards help do so.
Daoud (2018)	Explore the impact of the BoD and the presence of an audit committee with EM practices.	Jordan (2014-2016)	____	Abnormal accruals - Modified Jones Model Dechow *et al.* (1995)	This study revealed that the independence and CEO duality of the board of directors had a substantial impact on the practices of EM.
Hashim and Devi (2008)	Examine the relationship between board characteristics, ownership structure and earnings quality.	Malaysia (2004)	Agency Theory	____	Family ownership substantially correlates with earnings quality, but no connection was discovered between the board's independence and earnings level.
Khalil and Ozkan (2016)	Examine the relevance of corporate governance principles in the context of emerging markets.	Egypt (2005-2012)	Agency Theory	Performance Model Kothari *et al.* (2005)	Findings suggest that adding more non-executive directors to a company's board of directors may not be sufficient to limit opportunistic EM.
Khan *et al.* (2022)	Investigate the role of the board of directors' characteristics in restraining earnings management.	Pakistan (2015-2019)	Agency Theory; Resource Dependence Theory	Modified Jones Model Dechow *et al.* (1995)	Independent and financially prepared directors are essential to prevent EM. There is a strong correlation between female directors and accrual manipulation.
Mangala and Singla (2021)	Investigate the role of corporate governance practices in restraining earnings management in India.	India (2016-2020)	Agency Theory; Resource Dependence Theory	Difference of discretionary realised security gains and losses (Beatty *et al.*, 2002)	Board-related factors such as size, independence, meeting frequency, and diligence are ineffective at curbing earnings management in Indian banks.
Musa *et al.* (2023)	Examine the effect of CEO attributes and the presence of an independent board on limiting EM.	Nigeria (2018-2021)	Agency Theory	Real Earnings Management (Roychowdhury, 2006)	The study demonstrates that non-executive directors substantially impact the CEO's ability to deliver reliable financial information.
Orazalin (2020)	Examine if board gender diversity and other board characteristics affect earnings management.	Kazakhstan (2010-2016)	Agency Theory; Resource Dependence Theory	Modified Jones Model Dechow *et al.* (1995) (Absolute Value)	Firms with larger boards and more gender diversity adopt more restrained approaches to earnings management practices. However, there is only weak evidence linking board independence and earnings management.

Rahman and Ali (2006)	Investigate the effectiveness of monitoring functions of BoD in reducing EM.	Malaysia (2002-2003)	Agency Theory; Resource Dependence Theory	Modified Jones Model Dechow et al. (1995) (Absolute Value)	Organisations with smaller boards and greater ownership concentration are less likely to practice EM.
Sarkar et al. (2008)	Analyse the relationship between board characteristics and EM in India.	India (2003-2004)	Agency Theory	Jones Model (1991)	Board quality rather than independence is what matters most for earnings management. Also, boards with focused directors are related to weaker earnings management.
Shira (2022)	Explore the nexus between corporate governance and earnings management in emerging markets.	10 Asian economies (2010-2021)	Agency Theory	Modified Jones Model Dechow et al. (1995)	Board size has been demonstrated to have a significant and positive regression coefficient. The data reveals a clear relationship between EM and CEO-Chair duality.
Waweru and Prot (2018)	Examine if corporate governance requirements have constrained EM in Kenya and Tanzania.	Kenya and Tanzania (2005-2014)	Agency Theory; Resource Dependence Theory	Performance Model Kothari et al. (2005)	The positive and significant connections among board independence and gender diversity to discretionary accruals imply that CG may not have restricted EM in Africa.
Ye et al. (2010)	Examine whether the gender of top executives affects earnings quality.	China (2001-2006)	——	——	Organisations with male and female top executives are similar regarding profit quality proxies.

Panel B: Developed Markets

Klein (2002)	Examine if audit committee or board characteristics are related to EM in American firms.	USA - S&P (1992-1993)	Agency Theory	Modified Jones Model Dechow et al. (1995) (Absolute Value)	In contrast to CEO duality, which is positively associated with EM, audit committee independence and board size have a negative relationship with EM.
Kyaw et al. (2015)	Examine how gender diversity affects earnings management.	Europe (2002-2013)	Agency Theory	Modified Jones Model Dechow et al. (1995)	According to the study, organisations with more women on their boards had a lower likelihood of engaging in EM.
Lara et al. (2017)	Analyse if having more women on corporate boards improves the accuracy of accounting statistics.	UK (2003-2012)	Agency Theory	Modified Jones Model Dechow et al. (1995) (Absolute Value)	Whether or not female directors are independent will significantly impact how the financial reporting process is monitored. Regardless of gender, the presence of independent directors seems to be the most crucial factor to curb EM.
Peasnell et al. (2005)	Analyse whether the incidence of earnings management by UK firms depends on board monitoring.	UK (1993-1996)	Agency Theory	Modified Jones Model Dechow et al. (1995)	Firms with more outside board members have less income-increasing EM. Independent directors have a significant monitoring role in maintaining the credibility of reported financial accounts.
Sun et al. (2011)	Analyse if the gender of the board members of independent audit committees limits EM.	USA - S&P (2003-2005)	——	Performance Model Kothari et al. (2005)	The effectiveness of independent audit committees in curbing earnings management is unaffected by gender in this study.

Uzun *et al.* (2004)	Examines how various board characteristics and the company's other governance features affect the occurrence of corporate fraud.	USA (1978-2001)	Agency Theory	――	The chance of corporate misbehaviour dropped as a board committee's number of independent outside directors rose.
Wahid (2018)	Investigate the impact of board gender diversity on financial misconduct.	USA - NYSE (2000-2010)	Agency Theory	――	Companies with gender diverse boards make fewer errors in financial reporting and commit fewer frauds. This study demonstrates that having women on boards can help businesses by enhancing decision-making.
Xie *et al.* (2003)	Examine the role of the BoD, audit committee and executive committee in preventing EM.	USA - S&P (1992-1996)	Agency Theory	Modified Jones Model Dechow *et al.* (1995) (Absolute Value)	This study suggests that organisations with more outside directors and corporate experience on their boards had lower incidence rates of EM.

Source: Elaborated by the author as part of the dissertation

3. Methodology

3.1. Data and Sample

As this thesis aims to study the board of directors' characteristics defined above for Indonesia, the sample comprises businesses listed between 2018 and 2022 on the Indonesia Stock Exchange. All the data was taken from the Thomson Reuters DataStream database, and the most recent five years were chosen to be as up-to-date as possible.

Table 3.1 – Sample selection

Description	Number of Data
Initial Sample (companies with information between 2018 and 2022)	4845
Without Name or Mnemonic	-70
Dead/Delist	-460
Without Current Assets	-931
Without all board variables	-3189
Final Sample	**195**

Source: Elaborated by the author as part of the dissertation

As Table 3.1 above shows, from an initial sample comprising 4845 data over 5 years, companies that did not include information on their name or Mnemonic were removed. In a second phase, all firms that went bankrupt or were delisted from the stock exchange for any reason were excluded, such that the final sample only includes companies that are currently public. Next, the data that did not have current asset data were removed, given that without it is impossible to calculate the dependent variable earnings management.

Finally, after having 3384 observations that could be used to calculate EM, we had to remove a significant portion of this sample since very few had information on the three variables about the board: its size, independence and gender diversity, which are the aim of the study. This reduction is because this information is not yet adequately scrutinised in Indonesia and is not fully disclosed (Adhariani and Toit, 2020). After this considerable downsizing of data, the final sample comprises 195 observations with all the data needed for the study.

This study used all industry types for the sample to get a macro perception of the whole Indonesian context. As it is possible to observe in Table 3.2, Manufacturing and Mining are the industries with the highest importance in this sample, with 30,77% and 20,51% of total data, respectively. On the other hand, "Retail Trade", "Finance, Insurance and Real State" and "Services" are the industries with fewer observations in our sample.

Table 3.2 - Sample Distribution per Industry

Industry Classification (two-digit SIC code)	Frequency	Percentage (%)	Cumulative (%)
Agriculture, Forestry and Fishing (01-09)	8	4,10	4,10
Mining (10-14)	40	20,51	24,62
Construction (15-17)	22	11,28	35,90
Manufacturing (20-39)	60	30,77	66,67
Transportation and Public Services (40-49)	37	18,97	85,64
Wholesale Trade (50-51)	14	7,18	92,82
Retail Trade (52-59)	6	3,08	95,90
Finance, Insurance and Real State (60-67)	6	3,08	98,97
Services (70-89)	2	1,03	100,00
Total	**195**	**100,00**	-

Source: Elaborated by the author as part of the dissertation

3.2. Dependent Variable: Earnings Management based on Accruals

The dependent variable of this study consists of the level of earnings management. There is disagreement over how to measure this variable in prior studies. As previously mentioned, this variable can be quantified in two ways: real earnings management and accruals-based earnings management. This study uses the late one: the discretionary accruals, which is the most common among researchers.

According to Healy (1985), accruals are accounting adjustments made by managers to reflect costs and sales made in a year but for which payments or receipts were not made within that year. Also, Dechow *et al.* (1995) argue that total accruals can be divided into two categories: discretionary accruals and non-discretionary accruals. The late refers to the explained part by the businesses' actual activity and is the accounting adjustments according to financial reporting standards, while the first category is the abnormal accruals, as the actual company activity doesn't explain them and are often seen as earnings management by managers (Healy, 1985).

As it is impossible to calculate earnings management exclusively from the financial statements, it is calculated by the difference between Total Accruals and Non-Discretionary Accruals (Healy, 1985). As there are several methodologies to calculate that difference, one of the first and widely accepted models in the literature for estimating discretionary accruals is the Jones Model (Jones, 1991). This model is frequently used to determine the degree of earnings management, as in the case of Sarkar *et al*. (2008) in a study about the level of earnings management in India.

However, the Jones Model has certain drawbacks, and one is that it doesn't consider sales as a target for manipulating earnings. For this reason, the Modified Jones Model was created, where receivables are seen as discretionary, based on the idea that manipulating outcomes in a credit sales situation is more accessible than in cash transactions (Dechow *et al.*, 1995). The Modified Jones Model has also been used extensively in previous literature, such as in the studies of Rahman and Ali (2006), Chatterjee (2020), Khan *et al.* (2022) and Afifa *et al.* (2022). In this study, the modified Jones Model from Dechow *et al.* (1995) was used in the robustness analysis and can be calculated by the following equation (1):

$$\frac{TA_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{(\Delta REV_{i,t} - \Delta REC_{i,t})}{A_{i,t-1}} + \beta_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \qquad (1)$$

Where:

$TA_{i,t}$ = Total Accruals of company i in year t;

$A_{i,t-1}$ = Average of Total Assets for firm i, in year t and year t-1;

$\Delta REV_{i,t}$ = Change in Revenues for firm i between year t-1 and year t;

$\Delta REC_{i,t}$ = Change in Receivables for firm i between year t-1 and year t;

$PPE_{i,t}$ = Total of Property, Plant and Equipment of the company i in year t;

$\varepsilon_{i,t}$ = Residual Term

Finally, Kothari *et al.* (2005) included the firm's Return on Assets (ROA) in the first model, after noticing that the Jones Model lacked a variable to manage the impact of company performance. Hence, the Performance Model from Kothari *et al.* (2005) is represented by the following equation (2):

$$\frac{TA_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{(\Delta REV_{i,t} - \Delta REC_{i,t})}{A_{i,t-1}} + \beta_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \beta_4 \frac{ROA_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \qquad (2)$$

Where:

$ROA_{i,t}$ = Return On Assets of company i in year t;

other variables defined as previously.

Other studies regarding earnings management and its relationship with board characteristics and corporate governance also used the Performance Model from Kothari *et al.* (2005) to measure AEM (Sun *et al.*, 2011; Khalil and Ozkan, 2016; Anh and Khuong, 2022; Waweru and Prot, 2018)

Drawing on earlier research, discretionary accruals are quantified by their module rather than their actual value, as the goal of studying earnings management is to investigate the presence of these discretionary accruals rather than their sign. Thus, the higher the value of discretionary accruals, the greater the level of earnings manipulation, regardless of whether the aim was to increase or reduce earnings. Hence, in this study, we use the absolute value of discretionary accruals, as in Klein (2002), Orazalin (2020), Xie *et al*. (2003), Rahman and Ali (2006) and Lara *et al*. (2017).

3.3. Independent Variables

Board Size

Independent variables were created to analyse the relationship between earnings management and the different board characteristics. To calculate the relationship with earnings management and test the first research hypothesis, H1, the board size variable consists of the total number of board members, whether they are dependent or independent (Klein, 2002; Daoud, 2018; Mangala and Singla, 2021; Shira, 2022). The number of directors of each company in each year was taken from the Thomson Reuters DataStream database.

Board Independence

Concerning board independence, there are a few ways to calculate it. The first one is to consider a board independent if it has more than 50% independent directors, while another way is to create a dummy variable, considering the presence of at least one independent director (Sarkar *et al*., 2008).

However, to measure board independence in this study, we use the proportion of independent non-executive directors on a board, that means the number of independent directors with no executive role in the company divided by the total number of board members (Klein, 2002; Rahman and Ali, 2006; Sarkar *et al*.,2008; Orazalin, 2020; Musa *et al.*, 2023) As well as the total number of board members, also the number of independent directors was of each company in each year was taken from the Thomson Reuters DataStream database.

Board Diversity

There are several ways to define board diversity, depending on whether it's racial, ethnic or gender diversity. In this research, we pretend to calculate and study the late one. Just like board independence, board gender diversity can also be measured considering a board diverse

if it has more than 50% of women on board or with a dummy variable with a value of 1 if there is at least one woman on board or 0 if there are no women (Orazalin, 2020).

Nevertheless, in this research, we use the percentage of women on the board divided by the total board of directors' members, to reflect the difference and the influence women might have considering the whole board (Kyaw *et al.*, 2015; Waweru and Prot, 2018; Orazalin, 2020; Anh and Khuong, 2022).

3.4. Control Variables

Firm Size

Throughout previous studies, firm size has been considered as a variable closely related to EM. Hence, to stabilise the linear regression model, we included this variable as a control variable. According to Verrecchia (1983), the cost of settling and disclosing detailed financial information is higher for small businesses, since bigger enterprises already gather identical information for internal stakeholders. Managers of large companies tend to acknowledge that the cost of providing information to external stakeholders is low.

Since stakeholders who rely on major corporations for successful operations pay them additional attention, it is more difficult for them to maintain the practice of altering results. Because of this, large enterprises and those operating in the financial and insurance activities sector are less likely to manipulate results because it is more expensive to alter results based on accruals (Gajdosikova *et al.*, 2022).

This variable SIZE was measured as the natural logarithm of Total Assets, in American dollars, for each company in each year (Klein, 2002; Rahman and Ali, 2006; Sun *et al.*, 2011; Afifa *et al.* (2022); Musa *et al.*, 2023).

Return On Assets

Based on Kothari *et al.* (2005), high profitability makes a company an attractive investment since it is expected to have a financial return. As a result, the company is incentivised to offer accurate accounting information and prevents from manipulating accruals-based results.

In this way, ROA is a measure used to analyse the return on a company's total assets and is the measure most frequently used to quantify a firm's profitability. Therefore, this variable ROA was added to this research model, as has been done previously in similar papers (Rahman and Ali, 2006; Hashim and Devi, 2008; Orazalin, 2020; Shira, 2022).

Cross-Listing

If a company is cross-listed in multiple stock exchanges, it may have to disclose more financial information, as each stock market has its regulations. Also, information disclosure is crucial in the cross-listing decision, as past research on international cross-listings reveals. Hence, cross-listed firms are less likely to engage in earnings management, as they are monitored by multiple regulatory authorities (Bajra and Cadez, 2018; Lin *et al.*, 2013). Consequently, a dummy variable CROSS is added to the model, valuing 1 if a company is cross-listed, that means, if it is listed in another stock market besides Indonesia, and 0 if not.

Industry and Year Variables

Finally, as control variables, we also included 8 INDUSTRY dummy variables in the model since there are 9 types of industries according to the Standard Industrial Classification (SIC) code, consisting of a value of 1 if the observation is from the respective sector and 0 otherwise, to control the possible industry differences effect (Sarkar *et al.*, 2008; Orazalin, 2020; Mangala and Singla, 2021; Anh and Khuong, 2022).

We added 4 YEAR dummy variables to the linear regression model to control the possible time effect, as the sample comprises 5 different years. These variables value 1 if the observation is dated the respective year and 0 otherwise (Lara *et al.*, 2017; Orazalin, 2020; Mangala and Singla, 2021; Anh and Khuong, 2022).

Table 3.3 - Variables Description

Variable Name	Variable Label	Variable Measurement
ACC	Earnings Management based on Accruals	Absolute value of Abnormal accruals - Performance Model proposed by Kothari *et al*. (2005)
B_SIZE	Board Size	Total number of directors on the board (DataStream)
B_INDEPENDENCE	Board Independence	Percentage of independent directors on the board (DataStream)
B_DIVERSITY	Board Diversity	Percentage of female directors on the board (DataStream)
SIZE	Firm Size	The natural logarithm of the total assets of the company
ROA	Return on Assets	Ratio between Net Income and Total Assets
CROSS_LISTED	Cross-Listing	Dummy variable that takes value 1 if the firm is listed in more than one stock exchange and 0 otherwise
INDUSTRY	Industry dummy	A set of dummies inserted to control industry-specific effects (Orazalin, 2020; Anh and Khuong, 2022)
YEAR	Year dummy	A set of dummies inserted to control year-specific effects (Orazalin, 2020; Anh and Khuong, 2022)

Source: Elaborated by the author as part of the dissertation

3.5. Research Model

Since an extensive database of Indonesia listed firms was used, the methodology adopted is quantitative. The empirical model in this study consists of three multiple linear regressions, aiming to explain the relationship between the dependent variable of accruals-based earnings management and each independent variable regarding the different board characteristics.

To test H1 – *"The dimension of the board is negatively and significantly associated with earnings management"*, equation 3 has been developed, with the dependent variable ACC - Earnings management based on accruals and the primary independent variable being B_SIZE – board size. Also, the control variables SIZE, ROA, CROSS_LISTED, INDUSTRY and YEAR were considered in this linear regression and are grouped in equation (3) as CONTROL:

$$ACC_{i,t} = \beta_0 + \beta_1 \, B\_SIZE + \beta_{2-15} \, CONTROL + \varepsilon_{i,t} \qquad (3)$$

To align with H1, the coefficient β_1 is predicted to be negative, meaning that companies with larger boards engage less in earnings management based on accruals than the ones with smaller boards. Regarding the control variables, it is expected that firm size (SIZE), return on assets (ROA) and cross-listing firms (CROSS_LISTED) have all negative associations with earnings management, once the larger and more scrutinised companies are, the less they are likely to manipulate their results, since they have more attention on themselves.

To test H2 – *"The independence of the board is negatively and significantly associated with earnings management"* a new linear regression similar to the previous one, but with board independence (B_INDEPENDENCE) as the leading independent variable and the other variables stated as previously:

$$ACC_{i,t} = \beta_0 + \beta_1 \, B\_INDEPENDENCE + \beta_{2-15} \, CONTROL + \varepsilon_{i,t} \qquad (4)$$

This coefficient β_1 is anticipated to be negative in order to be consistent with H1, indicating that businesses with more independent directors are theorised to engage less in earnings management.

The last linear regression to analyse H3 – *"The diversity of the board is negatively and significantly associated with earnings management"* resembles the previous two equations,

only with the difference of the leading independent variable, as this time is the board gender diversity the focus of the study:

$$ACC_{i,t} = \beta_0 + \beta_1\, B\_DIVERSITY + \beta_{2-15}\, CONTROL + \varepsilon_{i,t} \tag{5}$$

Also, just like in the two former regressions, β_1 is projected to be negative and significant to follow previous literature, as women on board should constrain the practice of earning management.

4. Results

4.1. Descriptive Statistics

To provide a more in-depth understanding of the main characteristics of the variables analysed, it is crucial to present the corresponding descriptive statistics. In this way, we will examine the dependent variable (ACC), the various independent variables (corporate governance characteristics) and the control variables (firm size, ROA and cross-listing). Table 4.1 displays the main descriptive statistics of all variables cited.

Table 4.1 - Descriptive Statistics

	Mean	Std Deviation	Percentile 25	Median	Percentile 75
ACC	0,04	0,04	0,01	0,03	0,06
B_SIZE	6,08	2,35	4,00	6,00	7,00
B_INDEPENDENCE	0,43	0,13	0,33	0,43	0,50
B_DIVERSITY	0,09	0,12	0,00	0,00	0,17
SIZE	24,33	1,02	23,78	24,24	25,07
ROA	9,55	10,60	4,19	7,10	11,84
CROSS_LISTED	0,04	0,20	0,00	0,00	0,00

Source: Elaborated by the author as part of the dissertation

The results show that the Indonesian firms' observations have an average level of discretionary accruals of 0,04 and an equal standard deviation of 0,04. These values are similar to the ones in the study of Malaysian companies by Rahman and Ali (2006), whose average was 0,013 and standard deviation 0,07. In our study, only 50% of observations have a maximum of 0,03, while 25% of the data have values of at least 0,06. Also noteworthy are the minimum and maximum values, which correspond to 0 and 0.25, respectively.

Furthermore, it was discovered that the variable B_SIZE's average value is 6,08, similar to the median of 6. We can say that firms from observation have an average of 6 board members and that 50% of businesses have a maximum of 6 directors, but also that 50% of enterprises have a minimum of 6 directors. Also, the company with the fewest directors in a year on the board has 3 board members, while the company with the most directors has 21 board members. In comparison with other emerging market, Malaysian firms also have a mean of board members (8,89) similar to the median (9) (Rahman and Ali, 2006). Also, Kazakh companies have an average number of directors on the board almost the same as our study, with 5.09 members (Orazalin, 2020).

Regarding board independence (B_INDEPENDENCE), it was found that Indonesian businesses have, on average, 43,47% of independent directors. Additionally, 25% of firms have at least 50% outside board members. In other words, 25% of the observations had at least equal numbers of independent and dependent directors or even more independent directors. Compared to Indian firms, the ratio of board independence is slightly bigger than our sample, once the mean from the study of Mangala and Singla (2021) is 48,08% of independent directors. On the other hand, the mean of our sample is slightly larger than that of Kazakh firms, whose mean is 37,74% (Orazalin, 2020). Hence, the board's independence is as expected for an emerging market.

Looking at the last board characteristic, B_DIVERSITY, it can be noted that, on average, there is only a presence of 9,24% regarding women on boards. Also, 50% of observations had no woman on board, while 75% of data had a maximum of 16,67% of women directors and the maximum presence of women is two-thirds of the total board members. These results are identical to the 9,20% reported by Waweru and Prot (2018) regarding firms from Kenya and Tanzania, while their maximum was only 50% of women directors.

Through analysing Table 4.1, it is possible to see that the mean of the observations concerning SIZE is 24,33, with a standard deviation of just 1,02. In addition, the amplitude is only 2,9573, which means that the observations of the companies are relatively similar in size.

Concerning the ROA of the observations examined, the mean is 9,55%, while 75% of observations had a ROA of at least 4,19%, indicating that most companies had good profitability. In fact, 25% of the data had a ROA of at least 11,84%, and the maximum reached a value of 68,55%. Moreover, the minimum has a value of -23,43% and a standard deviation of 10,60%, higher than the mean. This indicates that the companies from this sample had a relatively wide variation in ROA.

Finally, regarding the last control variable, CROSS_LISTED, the statistics tell us that the businesses from our sample are, on average, 4,10% listed in more than one stock exchange, which is a low percentage. Also, in agreement with the mean, at least 75% of firms are listed only on the stock exchange of Indonesia.

4.2. Correlations

It is crucial to confirm that there are no significant correlations between the dependent variable and all the other variables to determine the model's viability. The Pearson coefficient correlations were computed to determine the relationship between the dependent, independent, and control variables, as the results are exhibited in the following Table 4.2.

Table 4.2 - Pearson Correlations Matrix

	ACC	B_SIZE	B_INDEPENDENCE	B_DIVERSITY	SIZE	ROA	CROSS_LISTED
ACC	1,00						
B_SIZE	0,01	1,00					
B_INDEPENDENCE	0,10	-,24**	1,00				
B_DIVERSITY	-0,12	-0,07	0,12	1,00			
SIZE	0,03	0,40**	-0,08	-0,06	1,00		
ROA	0,34**	-0,08	0,22**	0,08	-0,11	1,00	
CROSS_LISTED	-0,09	-0,05	,17*	-0,04	-0,08	,22**	1,00

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Elaborated by the author as part of the dissertation

Through the matrix constructed and shown in Table 4.2, it can be concluded that there are some correlations between the variables. The correlations between the dependent variable and the independent variables are very weak, as they have Pearson Coefficients lower than 0,2, as the coefficients are 0,01, 0,10 and -0,12 for B_SIZE, B_INDEPENDENCE and B_DIVERSITY, respectively. Still concerning correlations with the dependent variable ACC and other variables, it is possible to observe that the only variable with significant correlation with ACC is the variable control ROA, as its sig<0,01 and r=0,34, which means that the higher the level of a company's profitability, the higher the level of earnings management based on accruals. This correlation was expected, according to Kothari *et al*. (2005), who added the profitability to the ACC equation.

Regarding other correlations, the only negative significance stands out between the variables B_SIZE and B_INDEPENDENCE with values r=-0,24 and sig<0,01, pointing out that the larger the board, the lower the percentage of independent directors. Additionally, the variables most positively related are B_SIZE and SIZE (r=0,40; sig<0,01), thus demonstrating that the larger the company's financial size, the higher the number of directors on the board,

which makes sense since, in theory, more roles will be required, both operational and in terms of monitoring the company.

The other significant correlations are between B_INDEPENDENCE with ROA (r=0,22; sig<0,01), B_INDEPENDENCE with CROSS_LISTED (r=0,17; sig<0,01) and ROA with CROSS_LISTED (r=0,22; sig<0,01). In general, the result regarding the variables' multicollinearity is highly satisfactory, as there are no correlations of more than 0,5 between the variables, so there are no strong correlations (module of r<0,5).

4.3. Regression Results

After verifying the assumptions, it can be assumed that valid conclusions can be drawn from the model constructed. All the results of the various models, either for H1, H2 or H3, including the year and industry dummies and using regression estimations from equations 3, 4 and 5, respectively, all have high levels of explanation since they have very considerable r-squared values, as can be seen in the following tables.

Table 4.3 - Regression Results for Hypothesis 1

Variables	(1)	(2)	(3)
Constant	0,039***	0,078***	0,052
	(4,925)	(6,017)	(0,732)
B_SIZE	0,000	-0,001	0,000
	(0,123)	(-0,585)	(-0,242)
SIZE	——	——	0,000
			(0,068)
ROA	——	——	0,001***
			(4,456)
CROSS_LISTED	——	——	-0,031**
			(-2,297)
YEAR	No	Yes	Yes
INDUSTRY	No	Yes	Yes
Observations	195	195	195
R	0,009	0,415	0,512
R-Square	0,000	0,172	0,262
Adjusted R-Square	0,000	0,117	0,201

T-statistics tests in brackets
*** p<0,01; ** p<0.05; * p<0,1

Source: Elaborated by the author as part of the dissertation

Starting with hypothesis 1 and Table 4.3, the results exhibit a null coefficient for B_SIZE, which means that there is no significant correlation between board size and earnings management based on accruals (t=-0,242; sig=809), either positive or negative. This result does not support H1, since a negative and significant association between both variables was expected. However, this result corroborates the studies from emerging markets such as Kenya and Tanzania (Waweru and Prot, 2018) and India (Mangala and Singla, 2021), which also found that board size might not affect curbing earnings management. This outcome may be because the directors' quality and expertise are more important for earnings management restrictions than board size (Mangala and Singla, 2021).

Regarding the control variables, the first model indicates a positive and significant association between ACC and ROA (t=4,459; sig<0,001), suggesting that the higher the profitability, the higher the earnings management. This outcome was unexpected, as the positive and significant but relatively low correlation is also present in the other models, as seen in Tables 4.4 and 4.5. This may be because in Indonesia there still needs to be more monitoring and regulation. Therefore, companies may engage in earnings management to improve their results and profitability and consequently incur a positive relationship between both variables. Concerning CROSS_LISTED firms, its correlation with ACC is negative and significant, as expected (t=-2,297; sig=0,023), as cross-listed companies are less likely to practice earnings management because they are under the scrutiny of many regulatory entities. (Bajra and Cadez, 2018; Lin *et al.*, 2013).

Additionally, we can observe that the dummy variables YEAR and INDUSTRY also play an essential role in the explanation of the model, as it represents 17,2% of ACC, while the total of the model is 26,2% (R-Square=0,262).

Table 4.4 - Regression Results for Hypothesis 2

Variables	(1)	(2)	(3)
Constant	0,026**	0,046***	0,042
	(2,585)	(30154)	(0,622)
B_INDEPENDENCE	0,032	0,062***	0,050**
	(1,421)	(2,805)	(2,164)
SIZE	——	——	0,000
			(-0,098)
ROA	——	——	0,001***
			(3,743)
CROSS_LISTED	——	——	-0,031***
			(-2,694)
YEAR	No	Yes	Yes
INDUSTRY	No	Yes	Yes
Observations	195	195	195
R	0,102	0,452	0,530
R-Square	0,010	0,205	0,281
Adjusted R-Square	0,005	0,152	0,221

T-statistics tests in brackets
*** p<0,01; ** p<0.05; * p<0,1

Source: Elaborated by the author as part of the dissertation

Moving on to the Hypothesis 2 model, its explanatory value with all the control variables is 28.1% (R-Square=0.281). The correlation between the study's primary dependent variable, B_INDEPENDENCE and ACC is positive and significant (t=-2,164; sig=0,032). This value contradicts expectations since the null hypothesis of H2 was "*The independence of the board is negatively and significantly associated with EM*". Hence, this result contrasts with most research, such as studies from Daoud (2018), Rahman and Ali (2006) and Khan *et al.* (2022). On the other hand, this correlation agrees with Waweru and Prot (2018). This result is inconsistent with agency and resource dependency theories, which support that board independence mitigates earnings management. This leads to the conclusion that the requirements of the corporate governance guidelines regarding board independence may not have played a significant role in reducing EM in Indonesia. Apart from that, most Indonesian companies (95%) are family firms, meaning they are owned or controlled by families (Widagdo *et al.*, 2021). In this way, independent directors are more distant from the family business and, since they focus on other activities, are more dependent on managers for information (Rahman and Ali, 2006). Also, Waweru and Prot (2018) argue that due to a high control concentration, the CEO and the rest of the board may influence the independent

directors, making them their close allies and independent in form (structure) but not in substance (actual effectiveness).

As in the first model, in this second one, the variables YEAR and INDUSTRY play a significant role in explaining the dependent variable, with an explanatory value of 19,50% (R-Square change = 0,195). Also, the other control variables, ROA and CROSS_LISTED, have similar associations with ACC (t=3,743; sig<0,001) and (t=-2,694; sig=0,008), respectively.

Table 4.5 - Regression Results for Hypothesis 3

Variables	(1)	(2)	(3)
Constant	0,043***	0,077***	0,069
	(12,259)	(7,024)	(1,040)
B_DIVERSITY	-0,038*	-0,030	-0,049**
	(-1,667)	(-1,362)	(-2,267)
SIZE	⸺	⸺	0,000
			(-0,176)
ROA	⸺	⸺	0,001***
			(4,849)
CROSS_LISTED	⸺	⸺	-0,033**
			(-2,471)
YEAR	No	Yes	Yes
INDUSTRY	No	Yes	Yes
Observations	195	195	195
R	0,119	0,423	0,532
R-Square	0,014	0,179	0,283
Adjusted R-Square	0,009	0,125	0,223

T-statistics tests in brackets
*** p<0,01; ** p<0.05; * p<0,1

Source: Elaborated by the author as part of the dissertation

Lastly, in Table 4.5, it is possible to observe the results for the last hypothesis, H3, using linear regression from Equation (5). In the table above, the results show a negative and significant coefficient for the board diversity variable (B_DIVERSITY), so it is considered that there is a statistically significant relationship between the level of earnings management based on accruals and the level of women on the board of directors (t=-2.267; sig=0.025). This result confirms the stipulated hypothesis (H3), suggesting a negative association between board diversity and earnings management. In other words, evidence was found in Indonesia that companies with a higher percentage of women on the board are associated with a lower

level of manipulation of results based on accruals. These results align with previous literature's findings on earnings management and board diversity in emerging markets (Luo *et al.*, 2017; Orazalin, 2020; Anh and Khuong, 2022).

Once again, with an explanatory percentage of 18,70%, the variables YEAR and INDUSTRY play an essential part in explaining the dependent variable, while variables ROA and CROSS_LISTED, the two control variables, exhibit identical relationships with ACC (t=4,849; sig<0,001) and (t=-2,471; sig=0,014), accordingly. On the other hand, the third control variable SIZE had no significant correlation with ACC in either of the three models, pointing out that there is no positive or negative association between the firm size and its level of earnings management based on accruals.

4.4. Robustness Analyses

In parallel with the principal empirical analysis, several robustness checks were conducted to confirm and reinforce the main results. Firstly, all the dependent variables relating to board characteristics were put into a single model to check whether their relationships remained the same. Next, an alternative measure of accrual-based earnings management was considered to prevent problems related to measurement errors in the accrual estimation processes: ACC_MJM, the modified Jones Model from Dechow *et al.* (1995). Finally, other models were used to calculate board independence and diversity, with dummy variables, to corroborate the results found. The dummy variable related to board independence (B_INDEPENDENCE_D) is valued at 1 if the board is composed mainly of independent directors or at least has the same importance as dependent directors (B_INDEPENDENCE >= 0,5), or 0 if BoD mostly consists of dependent directors. Concerning board gender diversity, the new dummy variable (B_DIVERSITY_D) is valuable 1 if there is at least one woman on BoD and 0 otherwise (the board is made up only of men).

Table 4.6 shows all the different results from the robustness checks done in this study. Starting with all the variables in the same linear regression, it is possible to observe that both B_INDEPENDENCE and B_DIVERSITY retain their positive and negative association with ACC, respectively. At the same time, B_SIZE persists with no significant association with earnings management. Also, the adjusted R-square of this model is higher than all the previous regressions. Concerning the different measurements of accruals-based earnings management, using the alternative measure of AEM, we used the modified Jones model (Dechow *et al.*, 1995). In this test, board size remains without a significant association with ACC_MJM and board

diversity maintained its negative and significant correlation with earnings management (t=-2,206; sig=0,029), as previously noted. On the other hand, the board independence stands with a positive but insignificant association with ACC_MJM (t=0,925; sig=0,356). Lastly, in the final robustness test, board independence and board gender diversity remained their positive and negative significant associations as in the main results. With these new dummy variables, it is possible to observe that when a BoD is at least 50% composed of independent directors, the level of earnings management based on accruals is higher. Also, concerning women on boards, this result indicates that the presence of at least one woman constrains the practice of earnings management in Indonesian firms.

Table 4.6 - Robustness Tests

Panel A: All board characteristics			
Variables	**(1)**	**(2)**	**(3)**
Constant	0,024*	0,048***	0,059
	(1,679)	(2,661)	(0,862)
B_SIZE	0,001	0,000	0,000
	(0,410)	(0,058)	(0,286)
B_INDEPENDENCE	0,039*	0,065***	0,054**
	(1,697)	(2,832)	(2,271)
B_DIVERSITY	-0,043*	-0,035	-0,050**
	(-1,846)	(-1,593)	(-2,366)
SIZE	——	——	-0,001
			(-0,351)
ROA	——	——	0,001***
			(4,071)
CROSS_LISTED	——	——	-0,039***
			(-2,895)
YEAR	No	Yes	Yes
INDUSTRY	No	Yes	Yes
Observations	195	195	195
R	0,170	0,465	0,551
R-Square	0,029	0,216	0,304
Adjusted R-Square	0,014	0,155	0,237

Panel B: Alternative measure of AEM: Modified Jones model (Dechow *et al.*, 1995)

Variables	(1)	(2)	(3)
Constant	0,062	0,067	0,089
	(0,755)	(0,853)	(1,146)
B_SIZE	0,001	——	——
	(-0,525)		
B_INDEPENDENCE	——	0,025	——
		(0,925)	
B_DIVERSITY	——	——	-0,055*
			(-2,206)
SIZE	0,001	0,000	-0,001
	(0,157)	(-0,085)	(-0,200)
ROA	0,001***	0,001***	0,001***
	(3,673)	(3,309)	(4,065)
CROSS_LISTED	-0,015	-0,018	-0,018
	(-0,976)	(-1,134)	(-1,128)
YEAR	Yes	Yes	Yes
INDUSTRY	Yes	Yes	Yes
Observations	195	195	195
R	0,483	0,485	0,502
R-Square	0,233	0,235	0,252
Adjusted R-Square	0,169	0,171	0,189

Panel C: Alternative Measure of Board Independence and Board Diversity

Variables	(1)	(2)	(3)
Constant	0,021	0,043	0,023
	(0,309)	(0'643)	(0,343)
B_INDEPENDENCE_D	0,017***	——	0,014
	(2,794)		(1,587)
B_DIVERSITY_D	——	-0,013*	-0,004
		(-2,336)	(-0,495)
SIZE	0,001	0,001	0,001
	(0,285)	(0,224)	(0,304)
ROA	0,001***	0,001***	0,001***
	(4,943)	(4,865)	(4,956)
CROSS_LISTED	-0,036**	-0,031**	-0,035**
	(-2,683)	(-2,357)	(-2,603)
YEAR	Yes	Yes	Yes
INDUSTRY	Yes	Yes	Yes
Observations	195	195	195
R	0,541	0,533	0,542
R-Square	0,293	0,284	0,294
Adjusted R-Square	0,234	0,224	0,231

T-statistics tests in brackets

*** p<0,01; ** p<0.05; * p<0,1

Source: Elaborated by the author as part of the dissertation

5. Conclusion

5.1. Findings

Accounting results are more reliable and helpful when the behaviour of managers is controlled through internal and external corporate governance mechanisms. The combination of these mechanisms means that, ideally, managers act following the interests of the organisation and its shareholders rather than making decisions in their interests, thus safeguarding the integrity and credibility of the financial statements (Babatunde and Olaniran, 2009; Bajra and Cadez, 2018). In emerging markets, in the last three decades, there has been a greater concern about the reliability and transparency of financial statements due to the higher volatility of this kind of economy compared to developed countries (Bruton *et al*., 2013; Bortoluzzi *et al*., 2018). Due to the rising interest in many economic and accounting topics, academics and practitioners have been improving their awareness of developing markets (Kumar *et al*., 2022). Hence, it is imperative to study earnings management and corporate governance in emerging markets, as this subject is closely related to reporting, transparency and information asymmetry (Dechow *et al*., 2010).

Therefore, this study was developed to examine and draw conclusions regarding the effect of the board of directors, namely size, independence and diversity, on earnings management based on accruals. This dissertation used a sample of companies listed on the Indonesian stock exchange, taken from the Thomson Reuters DataStream database, for the period between 2018 and 2022, which resulted in a sample of 195 observations, subsequently applied in multiple linear regressions to obtain the results. To estimate the study's dependent variable, earnings management based on accruals, we used the model proposed by Jones (1991) not only with the modifications inserted by Dechow *et al*. (1995) but also with the modifications suggested by Kothari *et al*. (2005) in reference to company's profitability. Additionally, the control variables analysed were the firm's size, the company's profitability and the fact that the company was cross-listed in another market.

The main results concerning board size show us that there is no significant association between board size and the practice of earnings management. This conclusion suggests that neither a small nor a large board influences earnings management. Even though this conclusion does not meet the leading assumption, which expected a negative and significant relationship between the two variables, as was the case in studies both for developed countries and emerging economies (Peasnell *et al*., 2005; Klein, 2002; Hashim and Devi, 2008; Khalil and Ozkan, 2016), this outcome is congruent with that obtained by Waweru and Prot (2018),

Mangala and Singla (2021) and Elghuweel *et al.* (2017). This result may be because, more than the size of the board, what really matters for earnings management constraints is the experience and quality of the directors.

Regarding board independence, the results show a positive and significant relationship with earnings management based on accruals. This means that the higher the percentage of board independence, the higher the level of earnings management. This conclusion is consistent with the study by Waweru and Prot (2018), but goes against the null hypothesis tested, as well as the studies of Afifa *et al.* (2022), Rahman and Ali (2006), Musa *et al.* (2023) and Khan *et al.* (2022). Therefore, it can be concluded that the recommendations of the corporate governance regulations regarding the board of directors' independence did not play a major role in mitigating earnings management in Indonesia. It could be necessary for emerging economies, such as Indonesia, to change their corporate governance cultures from ones that emphasise merely following rules and regulations box-ticking (comply or explain principle) to ones that force good corporate governance (apply or explain principle) (Waweru and Prot, 2018). In addition, the fact that there is a high percentage of family businesses in Indonesia increases the influence and power that the owners have over independent directors (Widagdo *et al.*, 2021; Rahman and Ali, 2006).

Concerning board diversity, this study also showed a negative association between earnings management based on accruals and board diversity; in other words, the higher the percentage of women on a company's board, the lower the level of earnings management based on accruals. This result is in line with most of the previous literature, such as the research of Wahid (2018), Lara *et al.* (2017), Luo *et al.* (2017), Anh and Khuong (2022) and Orazalin (2020). Also, results from additional tests found that the presence of at least one woman on the board constrains the practice of earnings management based on accruals. These outcomes confirm what was expected concerning one of the study's objectives, which was to analyse the impact of women on the board on earnings management, thus verifying that women have a more ethical and socially responsible role, which constrains the practice of earnings management (Khazanchi, 1995; Wahid, 2018).

5.2. Contributions

This study contributes to the accounting and financial literature in two ways, both theoretically and practically. The conclusions obtained are relevant to the scientific community in that the relationship between various corporate governance characteristics and earnings management in listed Indonesian companies was analysed, thus expanding

knowledge in this area. On the other hand, it also contributes to gender equality, reinforcing the importance of women's presence in important positions in companies, in management and monitoring positions, especially in emerging markets such as those in Southeast Asia, where women still play an extremely unfavourable role in society (Ionascu *et al.*, 2018). Although most studies are about developed countries, researchers have recently increasingly focused on emerging economies (Madison *et al.*, 2022). Accordingly, this study is one of the first on earnings management and corporate governance, focusing on women's presence on the board in Indonesia (Abdullah and Ismail, 2016).

Another special contribution is the discovery of the outcome concerning board independence, reinforcing the study by Waweru and Prot (2018) on how board independence increases the practice of earnings management and by demonstrating the "comply or explain" corporate governance model's failure to decrease earnings management, particularly in markets with limited law enforcement.

The study of earnings management is of particular concern not only to researchers but also to business professionals, investors, regulators and other organisations (Kothari *et al.*, 2005). On a practical level, this study can significantly contribute to regulators and policymakers in Indonesia by indicating possible new regulations to restrict earnings management, such as making it compulsory for companies to have women on the board of directors. Furthermore, the study contributes to company investors, potential corporate investors and other stakeholders looking for reliable and transparent information about a particular business (Afifa *et al.*, 2022).

5.3. Limitations

Despite the methodological accuracy and robustness of the results, this study must consider some limitations that affect the results directly or indirectly. Obtaining some data, mainly on the independent variables concerning board characteristics, was difficult, as this information is still not adequately publicised, especially in emerging markets such as Indonesia. As a result, the sample's observations were relatively small (n=195), while the number of observations with information to measure earnings management was 3384. Another limitation is that this study only focuses on a single country, which is fairly constrained to its culture and individual characteristics like laws and regulations. It is plausible that the relationship established will be different if another country or a group of several countries is analysed and a different market to the one analysed in this study is considered, such as the developed market.

5.4. Recommendations for Future Investigations

Although the literature on earnings management is extensive, other research fields could still be explored. For future research on the subject, it is suggested that a comparative analysis be carried out between two or more countries with different corporate governance regulations and using other earnings management metrics. It is also recommended that a more significant time window be included in the analysis in future studies on Indonesia, something that could not be done in this study due to the unavailability of data on certain variables included in this statistical model.

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