Corporate Governance Mechanisms, Audit Quality, and Financial Reporting Timeliness: Evidence from Listed Insurance Firms

Suzilawati Uyob[1*], Rani Eka Diansari[2], Nurul Adillah Yusof[3]

[1*]Institute of Graduate Studies, Universiti Poly-Tech Malaysia, 56100 Kuala Lumpur, Malaysia. Tel: +6012-669 8072 Email: suzilawati@uptm.edu.my

[2]Accounting Department, Business and Law Faculty, Universitas PGRI Yogyakarta. Tel: +62 812-2854-5000 4846 Email: ranieka@upy.ac.id

[3]Faculty of Business and Accountancy, Universiti Poly-Tech Malaysia, 56100 Kuala Lumpur, Malaysia. Tel: +6013-980 4846 Email: adillah@uptm.edu.my

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ABSTRACT:
Timely financial reporting is essential for reducing information asymmetry, enhancing market transparency, and supporting informed decision-making. This study examines the relationship between corporate governance mechanisms and financial reporting timeliness among listed insurance firms in Nigeria. Using a panel dataset covering a seven-year period, financial reporting timeliness is measured by audit report lag, while corporate governance mechanisms are represented by board size, board independence, audit committee diligence, audit firm type, director shareholding, and institutional ownership. The study employs panel regression with Panel-Corrected Standard Errors (PCSE) to address potential heteroskedasticity and improve the reliability of statistical inference. The findings reveal that board independence, audit committee diligence, audit firm type, and director shareholding significantly reduce audit report lag, indicating that stronger monitoring mechanisms and higher audit quality contribute to more timely financial reporting. However, board size and institutional ownership do not exhibit significant relationships with reporting timeliness. The study contributes to the corporate governance literature by providing evidence from the Nigerian insurance sector, where regulatory complexity and reporting requirements make timely disclosure particularly important. The findings suggest that firms and regulators should prioritise effective monitoring mechanisms, particularly independent board oversight, active audit committees, and high-quality external auditing, to enhance financial reporting efficiency.

Keywords: Corporate governance; financial reporting timeliness; audit report lag; audit quality; ownership structure; insurance firms; Nigeria.

1. Introduction

Financial reporting timeliness represents a critical qualitative attribute of accounting information that determines its usefulness for users in economic decision-making. According to the International Accounting Standards Board (IASB, 2018), financial information must be made available in a timely manner to ensure its

relevance. Delays in financial reporting reduce informational value and increase uncertainty in capital markets, thereby weakening investor confidence and decision quality.

Despite regulatory requirements for timely reporting, audit report delays remain prevalent across firms and jurisdictions. Audit report lag, defined as the time between fiscal year-end and audit report issuance, varies significantly due to differences in governance structures, audit complexity, and institutional environments (Carslaw & Kaplan, 1991; Leventis et al., 2005). Such delays often indicate inefficiencies in monitoring systems and weak governance mechanisms.

Corporate governance mechanisms are widely recognized as key determinants of financial reporting quality and timeliness. Governance structures such as board composition, audit committees, ownership structure, and external audit quality play a vital role in monitoring managerial behaviour and ensuring accountability. Strong governance reduces information asymmetry between managers and stakeholders (Jensen & Meckling, 1976).

The insurance sector provides a particularly relevant context due to its regulatory complexity and high disclosure requirements. Timely reporting is essential for risk assessment and regulatory monitoring.

Prior empirical studies report mixed findings. Some studies find that governance mechanisms improve reporting timeliness (Clatworthy & Peel, 2010; Ezat & El-Masry, 2008), while others report insignificant relationships (Hassan, 2016). This inconsistency suggests that the governance–timeliness relationship is context-dependent.

Accordingly, this study examines multiple governance mechanisms simultaneously in listed insurance firms, addressing gaps in prior research that often examine governance variables in isolation.

2. Literature review

2.1 Financial Reporting Timeliness

Financial reporting timeliness is a fundamental qualitative characteristic of accounting information that enhances its relevance and usefulness for decision-making. According to the International Accounting Standards Board (IASB, 2018), financial information should be available to users before it loses its ability to influence economic decisions. Timely financial reporting enables investors, creditors, regulators, and other stakeholders to make informed decisions while reducing information asymmetry and uncertainty in capital markets.

Financial reporting timeliness is commonly measured using audit report lag (ARL), defined as the number of days between a firm's fiscal year-end and the date the external auditor signs the audit report (Carslaw & Kaplan, 1991). Although alternative measures such as preliminary reporting lag and total reporting lag have been used, audit report lag remains the most widely accepted proxy because it reflects the efficiency of both the financial reporting and auditing processes (Ettredge et al., 2006).

Agency Theory provides the primary theoretical explanation for financial reporting timeliness. Jensen and Meckling (1976) argue that managers may delay the disclosure of financial information due to information asymmetry and conflicts of interest with shareholders. Effective corporate governance mechanisms mitigate these agency problems by strengthening monitoring, improving accountability, and encouraging timely financial disclosure. Similarly, Stakeholder Theory suggests that organisations should provide timely financial information to meet the expectations of various stakeholders, thereby enhancing transparency and organisational credibility (Freeman, 1984).

Previous studies indicate that financial reporting timeliness is influenced by firm characteristics, audit complexity, regulatory requirements, and governance quality. Firms with effective governance structures generally experience shorter audit report lag because stronger

monitoring facilitates better coordination between management and external auditors while reducing managerial opportunism (Clatworthy & Peel, 2010; Al-Qadasi et al., 2021). Recent evidence also suggests that governance mechanisms such as board independence, audit committee effectiveness, and audit quality continue to play a significant role in improving reporting efficiency across different institutional settings (Li et al., 2022).

Given the regulatory complexity and extensive disclosure requirements of the insurance industry, timely financial reporting is particularly important for maintaining stakeholder confidence and ensuring regulatory compliance. This study therefore examines the influence of corporate governance mechanisms on financial reporting timeliness among listed insurance firms.

2.2 Corporate Governance Mechanisms

Corporate governance refers to the system by which firms are directed and controlled to ensure accountability, transparency, and effective decision-making (OECD, 2023). It establishes the relationships among shareholders, the board of directors, management, and other stakeholders while promoting ethical business practices and safeguarding shareholders' interests.

This study is primarily grounded in Agency Theory, which suggests that corporate governance mechanisms reduce conflicts of interest between managers (agents) and shareholders (principals) by improving monitoring and limiting opportunistic behaviour (Jensen & Meckling, 1976). Effective governance reduces information asymmetry and enhances the quality and timeliness of financial reporting. In addition, Resource Dependence Theory argues that boards contribute valuable expertise, experience, and external resources that improve organisational effectiveness and oversight (Pfeffer & Salancik, 1978).

Corporate governance mechanisms can be classified into internal and external mechanisms. Internal mechanisms include board characteristics, audit committees, and ownership structure, whereas external mechanisms include audit quality and regulatory oversight. These mechanisms work together to strengthen internal controls, improve monitoring effectiveness, and enhance the reliability of financial reporting.

This study focuses on six governance mechanisms: board size, board independence, audit committee diligence, audit firm type, director shareholding, and institutional ownership. These variables are widely recognised in the corporate governance literature as important determinants of financial reporting quality and timeliness. Firms with stronger governance mechanisms are generally expected to produce more timely financial reports by improving oversight, reducing agency conflicts, and facilitating more efficient audit and reporting processes.

2.3 Board Structure and Reporting Timeliness

2.3.1 Board Size

Board size refers to the total number of directors serving on a company's board. According to Resource Dependence Theory, larger boards provide diverse expertise, knowledge, and external networks that enhance strategic decision-making and strengthen oversight of financial reporting (Pfeffer & Salancik, 1978). A larger board may therefore improve monitoring effectiveness and facilitate timely financial reporting. Conversely, Agency Theory argues that excessively large boards may experience coordination difficulties, communication inefficiencies, and slower decision-making processes, which can delay the preparation and approval of financial statements (Jensen, 1993). These conflicting theoretical perspectives suggest that the relationship between board size and financial reporting timeliness remains inconclusive.

Empirical evidence also reports mixed findings. Hassan (2016) and Yoke et al. (2017) found that board size has an insignificant effect on audit report lag, indicating that increasing the number of directors does not necessarily improve reporting efficiency. In contrast, more recent

studies suggest that an appropriately sized board can strengthen governance effectiveness and contribute to more timely financial reporting by enhancing oversight and decision-making quality (Li et al., 2022). Given these inconsistent findings, this study examines whether board size significantly influences financial reporting timeliness.

H1: Board size has a significant effect on financial reporting timeliness.

2.3.2 Board Independence

Board independence refers to the proportion of independent non-executive directors serving on the board. Independent directors are expected to strengthen corporate governance by providing objective oversight and reducing managerial opportunism. According to Agency Theory, independent directors improve monitoring effectiveness, reduce information asymmetry, and encourage greater transparency in financial reporting (Fama & Jensen, 1983). Their independence enables them to challenge management decisions and ensure that financial reports are prepared and disclosed in a timely manner.

Empirical studies generally support the importance of board independence in improving reporting efficiency. Clatworthy and Peel (2010) and Sudradjat and Mai (2022)reported that firms with a higher proportion of independent directors experience shorter audit report lag due to stronger governance oversight. More recent evidence also indicates that board independence enhances financial reporting quality and reduces reporting delays by improving board effectiveness and accountability (Al-Qadasi et al., 2021; Li et al., 2022). Based on the theoretical arguments and empirical evidence, independent boards are expected to facilitate more timely financial reporting.

H2: Board independence has a significant negative effect on financial reporting timeliness.

2.4 Audit Committee Effectiveness

Audit committee effectiveness plays a crucial role in strengthening corporate governance and improving the quality and timeliness of financial reporting. Audit committee diligence, commonly measured by the frequency of committee meetings, reflects the committee's commitment to overseeing financial reporting, internal controls, and the external audit process. According to **Agency Theory**, an active audit committee enhances monitoring effectiveness by reducing information asymmetry and limiting managerial opportunism (Jensen & Meckling, 1976). Frequent meetings also facilitate communication between management and external auditors, enabling audit issues to be identified and resolved more efficiently.

Empirical evidence generally supports the positive role of audit committee diligence in improving reporting timeliness. Raghunandan and Rama (2007) argue that active audit committees strengthen financial reporting oversight and improve audit efficiency. More recent studies by Khlif and Samaha (2021) and Al-Qadasi et al. (2021) similarly found that firms with more diligent audit committees experience shorter audit report lag due to improved monitoring and coordination throughout the audit process. Therefore, firms with more active audit committees are expected to publish audited financial statements more promptly.

H3: Audit committee diligence has a significant negative effect on financial reporting timeliness.

2.5 Audit Firm Type

Audit firm type is an important external corporate governance mechanism that influences the efficiency and credibility of the financial reporting process. Big Four audit firms—Deloitte, EY, KPMG, and PwC—are generally recognised for providing higher audit quality due to their extensive expertise, global experience, advanced audit methodologies, and strong reputational incentives (Leventis et al., 2005). These advantages enable them to conduct audits more efficiently while maintaining compliance with professional auditing standards.

Previous studies consistently report that firms audited by Big Four auditors experience shorter audit report lag than those audited by non-Big

Four firms. Amin and Mohamed (2020) found that Big Four auditors complete audits more efficiently because of superior resources and specialised industry knowledge. Similarly, Li et al. (2022) reported that audit quality significantly improves financial reporting timeliness across different institutional settings. Accordingly, firms engaging Big Four auditors are expected to issue audited financial statements more quickly.

H4: Audit firm type (Big Four) has a significant negative effect on financial reporting timeliness.

2.6 Ownership Structure

2.6.1 Director Shareholding

Director shareholding refers to the proportion of company shares owned by members of the board of directors. According to Agency Theory, managerial ownership aligns the interests of managers and shareholders, thereby reducing agency conflicts and encouraging managers to maximise firm value (Jensen & Meckling, 1976). Directors with equity ownership are more likely to promote transparency and ensure the timely release of financial information because reporting delays may adversely affect firm value and shareholder confidence.

Empirical evidence supports this argument. Al-Matari et al. (2019) found that higher director ownership strengthens managerial incentives to improve governance and reporting quality. Similarly, Salehi and Shirazi (2020) reported that ownership alignment contributes to more efficient financial reporting by reducing managerial opportunism. Therefore, director shareholding is expected to improve financial reporting timeliness.

H5: Director shareholding has a significant negative effect on financial reporting timeliness.

2.6.2 Institutional Ownership

Institutional ownership refers to the proportion of shares held by institutional investors such as pension funds, insurance companies, mutual funds, and investment firms. Institutional investors are generally regarded as sophisticated shareholders capable of enhancing corporate governance through active monitoring of management (Kane & Velury, 2004). Their substantial ownership stakes provide incentives to demand greater transparency, improved disclosure quality, and timely financial reporting.

However, the effectiveness of institutional ownership varies across institutional environments. While active institutional investors can strengthen governance and reduce reporting delays, passive investors may exert limited influence on managerial decisions, particularly in emerging markets (Salehi & Shirazi, 2020). Recent studies also suggest that the impact of institutional ownership depends on the level of investor activism and the strength of regulatory enforcement (Sulimany, 2024). Consequently, the relationship between institutional ownership and financial reporting timeliness remains an empirical issue.

H6: Institutional ownership has a significant effect on financial reporting timeliness.

2.7 Theoretical Framework

This study is primarily grounded in Agency Theory, which explains the conflicts of interest arising from the separation of ownership and control in organisations (Jensen & Meckling, 1976). Agency theory suggests that managers may pursue personal interests that are inconsistent with shareholders' objectives, leading to information asymmetry and potential delays in financial reporting. Corporate governance mechanisms mitigate these agency problems by strengthening monitoring, improving managerial accountability, and enhancing the timeliness and reliability of financial reporting.

The study is further supported by Resource Dependence Theory, which posits that boards provide organisations with valuable expertise, experience, and external resources that enhance organisational effectiveness and decision-making (Pfeffer & Salancik, 1978). Additionally, Stakeholder Theory argues that organisations have a responsibility to provide timely and transparent financial information to various stakeholders, including investors, creditors, regulators, and the public, to facilitate informed decision-making and maintain organisational

legitimacy (Freeman, 1984). Together, these theories provide a comprehensive framework for explaining the relationship between corporate governance mechanisms and financial reporting timeliness.

2.8 Empirical Review

Previous studies have extensively examined the relationship between corporate governance mechanisms and financial reporting timeliness; however, the findings remain inconclusive across different institutional settings. Studies conducted in developed economies generally report that effective governance mechanisms, particularly board independence, audit committee effectiveness, and high-quality external auditors, contribute to shorter audit report lag and more timely financial reporting (Clatworthy & Peel, 2010; Sudradjat & Mai, 2022). In contrast, evidence from emerging markets is less consistent, with variations attributed to differences in regulatory environments, governance practices, and the effectiveness of institutional monitoring (Basuony & Mohammed, 2019; Al-Khatib & Al-Horani, 2020).

Although prior research has examined individual governance mechanisms, relatively few studies have investigated their combined effects within a single empirical framework, particularly in the insurance industry. Given the industry's complex financial reporting requirements and stringent regulatory oversight, understanding how multiple governance mechanisms jointly influence financial reporting timeliness remains important. Therefore, this study addresses this gap by examining the effects of board characteristics, audit committee diligence, audit firm type, and ownership structure on financial reporting timeliness among listed insurance firms, thereby contributing to the corporate governance and financial reporting literature.

3. Methodology

3.1 Research Design

This study adopts an ex-post facto and quantitative research design to examine the effect of corporate governance mechanisms on financial reporting timeliness in listed insurance firms. The ex-post facto design is appropriate because the study relies on historical financial and governance data, where variables are not manipulated but observed as they naturally occur. This approach is widely used in accounting and corporate governance research due to its suitability for analysing real-world financial reporting behaviour.

A panel data methodology is employed, combining cross-sectional and time-series data to capture both inter-firm differences and temporal variations over the study period. The use of panel data enhances estimation efficiency, improves the robustness of results, and reduces potential bias associated with unobserved heterogeneity across firms. It also allows for better control of firm-specific effects that may influence financial reporting timeliness.

The study is underpinned by a positivist research philosophy, which assumes that relationships between corporate governance mechanisms and financial reporting timeliness are objective, measurable, and can be empirically tested using statistical techniques (Creswell, 2014). This philosophical stance is consistent with prior empirical accounting research, which emphasises hypothesis testing and quantitative analysis to explain observable corporate behaviour.

3.2 Population and Sample Selection

The population of this study comprises all listed insurance firms within the selected stock exchange from 2018-2024. The insurance sector is selected due to its high regulatory intensity, complex financial reporting requirements, and significant reliance on actuarial estimations, which make it an appropriate context for examining financial reporting timeliness.

A purposive sampling technique is employed to ensure the selection of firms with complete and reliable data. The sampling criteria include: (i) firms must be continuously listed throughout the study period, (ii) availability of complete annual reports, (iii) disclosure of governance-related information, and (iv) availability of audit report dates required to compute audit report lag.

This sampling approach ensures data consistency and reduces potential bias arising from incomplete or inconsistent disclosures. It also enhances the reliability of the panel dataset by ensuring that only firms with sufficient and comparable information are included in the analysis.

3.3 Data Sources and Collection Method

This study relies exclusively on secondary data obtained from audited annual reports, corporate governance disclosures, and financial statements of the sampled firms. Secondary data is preferred due to its objectivity, reliability, and availability for longitudinal analysis.

Audit report lag is computed using audit report dates extracted from annual reports, while corporate governance variables are manually collected from governance disclosures and financial statement notes. This approach ensures measurement accuracy and consistency across firms and time periods.

3.4 Variable Measurement

The dependent variable is financial reporting timeliness, measured by audit report lag (ARL). The independent variables consist of six corporate governance mechanisms, namely board size, board independence, audit committee diligence, audit firm type, director shareholding, and institutional ownership. Table 1 summarises the measurement of each variable.

Table 1: Summary of variable measurement

Variable Type	Variable	Measurement	Expected Effect	Key References
Dependent Variable	Financial Reporting Timeliness (FRT) / Audit Report Lag (ARL)	Number of days between fiscal year-end and audit report signing date	Lower ARL = higher timeliness	Carslaw & Kaplan (1991); Leventis et al. (2005); Li et al. (2022)
Independent Variable	Board Size (BSIZE)	Total number of directors on the board	±	Pfeffer & Salancik (1978); Jensen (1993); Hassan (2016)
Independent Variable	Board Independence (BIND)	Proportion of independent non-executive directors to total board members	Negative	Fama & Jensen (1983); Clatworthy & Peel (2010); Sudradjat and Mai (2022); Al-Qadasi et al. (2021)
Independent Variable	Audit Committee Diligence (ACD)	Number of audit committee meetings per year	Negative	Raghunandan & Rama (2007); Khlif & Samaha (2021); Al-Qadasi et al. (2021)
Independent Variable	Audit Firm Type (AFT)	Dummy: 1 = Big Four auditor; 0 = Non-Big Four	Negative	Leventis et al. (2005); Amin & Mohamed (2020); Li et al. (2022)
Independent Variable	Director Shareholding (DSH)	Percentage of shares held by directors	Negative	Jensen & Meckling (1976); Al-Matari et al. (2019); Salehi & Shirazi (2020)
Independent Variable	Institutional Ownership (IO)	Percentage of shares held by institutional investors	±	Kane & Velury (2004); Salehi & Shirazi (2020); Sulimany (2024)

3.5 Model Specification

To examine the influence of corporate governance mechanisms on financial reporting timeliness, the following panel regression model is estimated:

$ARL_{it} = \beta_0+\beta_1 BSIZE_{it}+\beta_2 BINDit+\beta_3 ACD_{it}+\beta_4 AFT_{it}+\beta_5 DSH_{it}+\beta_6 IO_{it}+\varepsilon_i$

Where:

ARL = Audit Report Lag (financial reporting timeliness)

BSIZE = Board Size

BIND = Board Independence

ACD = Audit Committee Diligence

AFT = Audit Firm Type

DSH = Director Shareholding

IO = Institutional Ownership

ε = Error term

i = Firm

t = Time

The regression model is developed based on Agency Theory and previous empirical studies examining the relationship between corporate governance and financial reporting timeliness.

3.6 Data Analysis Techniques

The data are analysed using panel data regression techniques because panel datasets provide greater variability, lower multicollinearity, and more efficient parameter estimates than cross-sectional data (Baltagi, 2021). Prior to hypothesis testing, descriptive statistics and correlation analysis are conducted to describe the characteristics of the variables and examine preliminary relationships among them.

To determine the most appropriate panel estimation technique, the Chow test, Breusch–Pagan Lagrange Multiplier (LM) test, and Hausman specification test are performed. The final regression model is selected based on the outcomes of these specification tests.

Table 2: Summary of Data Analysis Technique

Analysis Technique	Purpose	Output
Descriptive Statistics	Summarise the characteristics of the variables	Mean, standard deviation, minimum and maximum values
Pearson Correlation	Examine relationships among variables	Correlation matrix
Panel Regression	Estimate the relationship between corporate governance mechanisms and financial reporting timeliness	Regression coefficients, t-statistics and p-values
Chow Test	Compare Pooled OLS and Fixed Effects models	Model selection
Breusch–Pagan LM Test	Compare Pooled OLS and Random Effects models	Model selection
Hausman Test	Select between Fixed Effects and Random Effects models	Final estimation model
Robustness Analysis	Assess the consistency of empirical findings	Robust regression estimates
Endogeneity Assessment	Evaluate possible estimation bias	Reliable coefficient estimates

3.7 Diagnostic Tests

Several diagnostic tests are performed before estimating the regression model to ensure that the assumptions of panel regression are satisfied and that the estimated coefficients are reliable.Multicollinearity is assessed using the Variance Inflation Factor (VIF), where values below 10 indicate that multicollinearity is not a serious concern (Gujarati et al., 2017). Heteroskedasticity is examined using the Breusch–Pagan/Cook–Weisberg test, while serial correlation is assessed using the Wooldridge test for panel data (Wooldridge, 2020). Although normality is less critical in large panel datasets, the Jarque–Bera test is performed to assess the distribution of residuals. Furthermore, the Chow, Breusch–Pagan LM, and Hausman tests are employed to determine the most appropriate panel regression model.

Table 3: Summary of Diagnostic Tests

Diagnostic Test	Purpose	Acceptance Criterion	Reference
Variance Inflation Factor (VIF)	Detect multicollinearity	VIF < 10	Gujarati et al. (2017)
Breusch–Pagan/Cook–Weisberg Test	Detect heteroskedasticity	$p > 0.05$ indicates homoskedasticity	Wooldridge (2020)
Wooldridge Test	Detect autocorrelation	$p > 0.05$ indicates no serial correlation	Wooldridge (2020)
Jarque–Bera Test	Assess normality of residuals	$p > 0.05$ indicates normality	Gujarati et al. (2017)
Chow Test	Compare Pooled OLS and Fixed Effects	$p < 0.05$ indicates Fixed Effects	Baltagi (2021)
Breusch–Pagan LM Test	Compare Pooled OLS and Random Effects	$p < 0.05$ indicates Random Effects	Baltagi (2021)
Hausman Test	Select between Fixed and Random Effects	$p < 0.05$ indicates Fixed Effects	Baltagi (2021)

3.8 Robustness Tests and Endogeneity Considerations

To ensure the stability of the empirical findings, robustness tests are conducted using alternative model specifications and heteroskedasticity-robust standard errors. The consistency of coefficient signs and statistical significance across different estimation methods provides additional evidence of the robustness of the results.

Endogeneity is a common concern in corporate governance research because omitted variables, reverse causality, or unobserved firm characteristics may simultaneously influence governance mechanisms and financial reporting timeliness. To mitigate these concerns, this study employs panel data estimation techniques that control for unobserved firm-specific effects. In addition, robustness analyses are performed using alternative model specifications to evaluate the consistency of the findings. Although more advanced techniques such as instrumental variables or the Generalised Method of Moments (GMM) may further address endogeneity, the present study relies on fixed-effects controls and robustness checks due to data availability. This approach is consistent with prior corporate governance studies and provides reasonable confidence in the validity of the estimated relationships.

4. Results And Discussion

4.1 Descriptive Statistics

Table 4.1 presents the descriptive statistics for the variables used in this study. Financial reporting timeliness, measured by audit report lag, records a mean value of 171.37 days, with a minimum of 76 days and a maximum of 579 days. The relatively large standard deviation (101.34 days)

indicates considerable variation in reporting timeliness among the sampled listed insurance firms, suggesting differences in reporting efficiency and corporate governance practices.

The corporate governance variables also exhibit reasonable variation across firms. The average board size is approximately nine directors, while independent directors account for 8.3% of total board membership on average. Audit committees meet approximately four times annually, indicating that most firms generally comply with recommended governance practices. In addition, 53.1% of the sampled firms are audited by Big Four audit firms, reflecting a relatively balanced distribution between Big Four and non-Big Four auditors. Director shareholding averages 3.7%, whereas institutional investors hold an average ownership stake of 48.9%, indicating that institutional ownership represents a significant proportion of equity ownership within the sampled firms.

Regarding the control variables, the average firm size is ₦18.27 billion in total assets, although substantial variation exists across firms, as reflected by the large standard deviation. The profitability dummy variable records a mean of 0.571, indicating that approximately 57.1% of the firm-year observations reported positive profitability during the study period. Overall, the descriptive statistics demonstrate sufficient variability across both the dependent and independent variables, supporting the suitability of the dataset for subsequent panel regression analysis.

The regression results provide empirical evidence on the relationship between corporate governance mechanisms and financial reporting timeliness. Table 1 summarises hypothesis testing outcomes based on coefficient significance and direction.

Table 4.1: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Financial Reporting Timeliness	147	171.367	101.339	76	579
Board Size	147	9.136	1.933	4	15
Board Independence	147	0.083	0.074	0.000	0.300
Audit Committee Meetings	147	3.823	1.012	1	7
Audit Firm Type	147	0.531	0.501	0	1
Director Shareholding	147	0.037	0.057	0.000	0.320
Institutional Ownership	147	0.489	0.186	0.117	0.843
Firm Size	147	18,270	15,959	3,958	109,988
Profitability	147	0.571	0.497	0	1

4.2 Correlation Analysis

Table 4.2 presents the Pearson correlation coefficients among the dependent, independent, and control variables. Correlation analysis is conducted to examine the direction and strength of the relationships between variables and to provide a preliminary assessment of potential multicollinearity before the regression analysis.

Overall, the correlation coefficients indicate that financial reporting timeliness is associated with several corporate governance mechanisms. Board independence, audit committee diligence, audit firm type, and director shareholding exhibit negative correlations with audit report lag, suggesting that firms with stronger governance practices tend to issue audited financial statements more promptly. Conversely, board size and institutional ownership display relatively weak correlations with financial reporting timeliness, indicating that these governance attributes may have limited direct influence on reporting speed.

Furthermore, the pairwise correlation coefficients among the independent variables are generally below the commonly accepted

threshold of **0.80** (Gujarati et al., 2017), indicating that multicollinearity is unlikely to pose a serious problem. This preliminary conclusion is subsequently confirmed through the Variance Inflation Factor (VIF) analysis presented in the following section. Therefore, the variables are considered appropriate for inclusion in the panel regression model. Table 4.2 represents the correlation matrix among variables.

Table 4.2 Correlation Matrix

Variable	TIMS	BSIZE	BIND	ACMEET	AFTYP	DIRSH	INSOWN	FSIZE	PROF
ARL	1.000								
BSIZE	-0.067	1.000							
BIND	-0.363	0.189	1.000						
ACMEET	-0.454	-0.040	0.277	1.000					
AFT	-0.167	0.243	0.220	-0.043	1.000				
DSH	-0.156	0.042	-0.047	0.261	-0.490	1.000			
IO	-0.036	0.121	-0.082	-0.138	0.455	-0.312	1.000		
FSIZE	-0.149	-0.012	0.152	0.279	0.261	-0.377	0.092	1.000	
PROF	-0.184	-0.067	-0.096	-0.043	0.012	0.055	0.017	-0.038	1.000

4.3 Diagnosis Tests

Prior to estimating the regression model, several diagnostic tests were performed to assess whether the panel data satisfy the assumptions required for reliable statistical inference. Specifically, multicollinearity, heteroskedasticity, autocorrelation, and model specification tests were conducted. These tests ensure that the estimated coefficients are unbiased, efficient, and suitable for interpretation.

4.3.1 Multicollinearity Test

Multicollinearity was assessed using the Variance Inflation Factor (VIF). According to Gujarati et al. (2017), VIF values below 10 indicate that multicollinearity is not a serious concern.

Table 4.3. Variance Inflation Factor (VIF) Test

Variable	VIF	1/VIF
Board Size (BSIZE)	1.823	.549
Board Independence (BIND)	1.771	.564
Audit Committee Diligence (ACMEET)	1.433	.698
Audit Firm Type (AFT)	1.425	.702
Director Shareholding (DSH)	1.342	.745
Institutional Ownership (IO)	1.233	.811
Firm Size (FSIZE)	1.154	.866
Profitability (PROF)	1.024	.976
Mean VIF	1.401	

The results presented in Table 4.3 indicate that multicollinearity is not a concern in this study. The Variance Inflation Factor (VIF) values range from 1.024 to 1.823, which are well below the recommended threshold of 10, while all tolerance values exceed 0.10, satisfying the criteria for the absence of multicollinearity (Hair et al., 2022). Furthermore, the mean VIF of 1.401 provides additional evidence that the explanatory and control variables are not highly correlated. Therefore, the regression model is free from multicollinearity, indicating that the estimated

coefficients are reliable and suitable for subsequent regression analysis.

4.3.2 Heteroskedasticity Test

The Breusch–Pagan/Cook–Weisberg test was employed to examine whether the variance of the regression residuals remains constant.

Table 4.4. Heteroskedasticity Test

Test Statistic	Value
Chi-square (χ^2)	180.80
Probability > χ^2	0.0000

Table 4.4 presents the results of the heteroskedasticity test for the financial reporting timeliness model. The Chi-square statistic is statistically significant ($p = 0.0000$), indicating the presence of heteroskedasticity in the regression model. This finding suggests that the assumption of homoscedasticity is violated, implying that conventional panel estimators may produce inefficient standard errors. To address this issue, the study employs Panel-Corrected Standard Errors (PCSE), which provide robust estimates in the presence of heteroskedasticity and cross-sectional dependence, thereby improving the reliability of statistical inference (Beck & Katz, 1995; Wooldridge, 2021).

4.3.3 Autocorrelation and Serialcorrelation Test

Autocorrelation and serial correlation refer to the correlation of error terms across time periods within a regression model. In panel data analysis, the presence of either form of correlation violates the assumption of independent residuals and may result in inefficient parameter estimates and unreliable statistical inference. Since panel datasets incorporate both cross-sectional and time-series dimensions, examining serial dependence is essential to ensure the validity and robustness of the estimated model (Baltagi, 2021; Wooldridge, 2021).

Table 4.5. Wooldridge Test for Autocorrelation

Test Statistic	Value
F-statistic	1.348
Probability > F	0.2593

The results of the autocorrelation test presented in Table 4.5 indicate that there is no evidence of serial correlation in the regression model. The probability value of the Chi-square statistic is statistically insignificant ($p > 0.05$), suggesting that the null hypothesis of no autocorrelation cannot be rejected. This implies that the residuals are independently distributed across observations and that the model does not suffer from autocorrelation or serial correlation problems. Therefore, the panel regression estimates are considered reliable and appropriate for subsequent hypothesis testing and interpretation.

4.3.4 Normality Distribution of the Data

Normality testing is an important diagnostic procedure in regression analysis as it examines whether the residuals of the estimated model follow a normal distribution. Although the assumption of normality is traditionally associated with parametric statistical techniques, recent econometric literature emphasizes that normality assessment should focus primarily on the regression residuals rather than the raw variables. This is because the validity of statistical inference in regression models depends on the distributional properties of the error terms rather than the individual variables themselves (Ghasemi & Zahediasl, 2012; Wooldridge, 2021).

Accordingly, this study evaluates the normality of the regression residuals using the Shapiro–Wilk test. The null hypothesis of the test assumes that the residuals are normally distributed, while rejection of the null hypothesis indicates a deviation from normality.

Table 4.6: Shapiro–Wilk Test for Normality of Residuals

Variable	Obs	W	V	Z	Prob > z
Residuals	147	0.989	1.213	0.437	0.331

The results presented in Table 4.6 indicate that the Shapiro–Wilk test produces a probability value of 0.331, which is greater than the 5% significance level ($p > 0.05$). Therefore, the null hypothesis of normally distributed residuals cannot be rejected. This finding confirms that the regression residuals approximate a normal distribution, satisfying the normality assumption required for reliable statistical inference. Consequently, the estimated regression model is considered appropriate for subsequent hypothesis testing and interpretation (Baltagi, 2021; Wooldridge, 2021).

4.4 Regression Result

Table 4.7 presents the panel regression results examining the relationship between corporate governance mechanisms and financial reporting timeliness. Financial reporting timeliness is measured using audit report lag, where lower values indicate more timely financial reporting.

Table 4.7. Panel Regression Results

Variables	Coefficient	Std. Error	Z-value	p-value	Decision
Constant	6.7191	1.4488	4.64	0.000***	
Board Size (BSIZE)	0.0021	0.0205	0.10	0.920	Not significant
Board Independence (BIND)	-1.6506	0.5579	-2.96	0.003***	Significant
Audit Committee Diligence (ACD)	-0.1710	0.0338	-5.05	0.000***	Significant
Audit Firm Type (AFT)	-0.2134	0.0958	-2.23	0.026**	Significant
Director Shareholding (DSH)	-1.5857	0.4719	-3.36	0.001***	Significant
Institutional Ownership (IO)	0.0416	0.1869	0.22	0.824	Significant
Firm Size (FSIZE)	-0.0657	0.1321	-0.50	0.619	
Profitability (PROF)	-0.2129	0.0698	-3.05	0.002***	
R^2	0.3531				
Wald χ^2	112.59				
Prob > Wald χ^2	0.0000*				
Number of Observations	147				
Number of Panels	Balanced Panel				
Autocorrelation	No autocorrelation detected				

The regression results reveal that board independence, audit committee diligence, audit firm type, and director shareholding are significantly associated with financial reporting timeliness. Conversely, board size and institutional ownership do not exhibit statistically significant relationships. Overall, the model is statistically significant, indicating that the selected corporate governance variables jointly explain variations in audit report lag among listed insurance firms.

4.5 Hypothesis Discussion

The findings indicate that only selected corporate governance mechanisms significantly influence financial reporting timeliness. Governance attributes related to monitoring effectiveness and audit quality demonstrate stronger explanatory power than structural governance characteristics.

4.5.1 Board Size and Financial Reporting Timeliness

The results indicate that board size is statistically insignificant in explaining financial reporting timeliness. This suggests that the number of directors does not directly influence audit report lag. Although larger boards may provide broader expertise, they may also create coordination inefficiencies that offset potential benefits.

Therefore, H1 is rejected.

This finding is consistent with Hassan (2016), who argues that board quality is more important than board quantity in determining reporting outcomes. Recent governance research also supports this result, indicating that board size becomes ineffective beyond an optimal threshold due to coordination costs and slower decision-making (Li et al., 2022; Al-Khatib & Al-Horani, 2020).

4.5.2 Board Independence and Financial Reporting Timeliness

Board independence is found to have a significant negative relationship with audit report lag. Independent directors enhance monitoring effectiveness, reduce managerial opportunism, and enforce stricter reporting discipline.

Therefore, H2 is supported.

This result aligns with Clatworthy and Peel (2010) and Fama and Jensen (1983). Recent evidence also confirms that board independence improves reporting efficiency, particularly in environments with higher agency conflicts (Sudradjat & Mai, 2022; Li et al., 2022).

4.5.3Audit Committee Diligence

Audit committee diligence is significantly associated with lower audit report lag. Frequent meetings improve oversight, strengthen auditor coordination, and enhance resolution of financial reporting issues.

Therefore, H3 is supported.

This finding is consistent with Raghunandan and Rama (2007) and Khlif and Samaha (2021). Recent studies further confirm that active audit committees significantly improve reporting timeliness through stronger monitoring mechanisms (Al-Qadasi et al., 2021).

4.5.4 Audit Firm Type

Audit firm type is significantly negative, indicating that Big Four auditors reduce audit report lag due to superior audit efficiency, expertise, and global standardisation.

Therefore, H4 is supported.

This finding is consistent with Leventis et al. (2005) and Amin and Mohamed (2020). Recent international evidence confirms that Big Four auditors continue to enhance audit efficiency and reduce reporting delays (Li et al., 2022).

H5: Director Shareholding

Director shareholding significantly reduces audit report lag, suggesting that ownership alignment improves managerial incentives for timely reporting.

Therefore, H5 is supported.

This supports agency theory (Jensen & Meckling, 1976) and aligns with Al-Matari et al. (2019). Recent studies show that managerial ownership strengthens internal monitoring and improves reporting discipline (Salehi & Shirazi, 2020).

4.5.5 Institutional Ownership

Institutional ownership is statistically insignificant, indicating weak monitoring influence on reporting timeliness in the sampled firms.

Therefore, H6 is rejected.

This is consistent with Kane and Velury (2004) and Salehi and Shirazi (2020), who argue that institutional investors may be passive in emerging markets. Recent evidence also confirms weak institutional activism in governance monitoring (Sulimany, 2024).

The summary of the empirical findings presented in Table 4.8

Table 4.8. Summary of Hypothesis Testing

Hypothesis	Statement	Decision
H1	Board size significantly affects financial reporting timeliness.	Rejected
H2	Board independence negatively affects financial reporting timeliness.	Supported
H3	Audit committee diligence negatively affects financial reporting timeliness.	Supported
H4	Big Four audit firms improve financial reporting timeliness.	Supported

H5	Director shareholding negatively affects financial reporting timeliness.	Supported
H6	Institutional ownership significantly affects financial reporting timeliness.	Rejected

The results show that governance mechanisms significantly influence financial reporting timeliness, but only certain mechanisms are effective.

Governance attributes related to monitoring intensity (board independence, audit committee diligence**)** and audit quality (Big Four auditors) significantly improve reporting timeliness. Ownership alignment through director shareholding also reduces audit delays.

However, structural governance (board size) and passive monitoring (institutional ownership) do not significantly affect reporting timeliness.

These findings strongly support agency theory (Jensen & Meckling, 1976), which emphasises that monitoring mechanisms reduce information asymmetry and improve reporting efficiency. Recent literature similarly confirms that governance effectiveness depends more on active monitoring mechanisms than structural composition (Li et al., 2022).

4.6 Discussion of Findings

The findings provide evidence that corporate governance mechanisms play an important role in improving financial reporting timeliness, although their effects differ across governance attributes.

Board size is found to have no significant effect on financial reporting timeliness. This suggests that merely increasing the number of directors does not necessarily improve monitoring effectiveness or accelerate the financial reporting process. Larger boards may experience coordination difficulties and slower decision-making, thereby offsetting the benefits associated with greater expertise. This finding is consistent with Hassan (2016), Yoke et al. (2017), Li et al. (2022), and Alhababsah and Yekini (2024), who argue that board effectiveness depends more on quality than board size.

Board independence exhibits a significant negative relationship with audit report lag, indicating that firms with a higher proportion of independent directors issue audited financial statements more promptly. Independent directors strengthen board oversight, reduce managerial opportunism, and improve reporting discipline. This finding supports Agency Theory and is consistent with Clatworthy and Peel (2010), Sudradjat and Mai (2022), Al-Qadasi et al. (2021), and Li et al. (2022).

Audit committee diligence is also negatively associated with audit report lag. Frequent audit committee meetings facilitate closer monitoring of financial reporting activities, improve communication with external auditors, and accelerate the resolution of audit issues. The result agrees with Raghunandan and Rama (2007), Khlif and Samaha (2021), Merter and Özer (2024), and Ismail et al. (2025), who report that active audit committees contribute significantly to timely financial reporting.

The findings further reveal that firms audited by Big Four audit firms experience significantly shorter audit report lag than firms audited by non-Big Four auditors. This result reflects the superior expertise, standardized audit methodologies, and greater resource capacity of Big Four audit firms. Similar evidence has been reported by Leventis et al. (2005), Amin and Mohamed (2020), Li et al. (2022), and Ismail et al. (2025).

Director shareholding is found to significantly improve financial reporting timeliness. Directors with equity ownership possess stronger incentives to protect firm value and maintain investor confidence by ensuring the timely release of audited financial statements. This finding supports the incentive-alignment argument of Agency Theory and is consistent with Al-Matari et al. (2019), Salehi and Shirazi (2020), and Alhababsah and Yekini (2024).

In contrast, institutional ownership does not significantly influence financial reporting timeliness. This suggests that institutional

investors in the sampled firms may adopt relatively passive monitoring roles or may not exert sufficient pressure on management to accelerate the reporting process. Similar findings have been documented by Salehi and Shirazi (2020), Sulimany (2024), and Merter and Özer (2024).

Overall, the results demonstrate that governance mechanisms emphasizing active monitoring and audit quality are more effective in improving financial reporting timeliness than structural governance characteristics alone. These findings reinforce the predictions of Agency Theory that effective monitoring reduces information asymmetry and agency conflicts, leading to more efficient and timely financial reporting.

5. Conclusion

This study provides empirical evidence on the role of corporate governance mechanisms in enhancing financial reporting timeliness among listed insurance firms. The findings demonstrate that board independence, audit committee diligence, audit firm quality, and director shareholding significantly reduce audit report lag, highlighting the importance of effective monitoring mechanisms in improving reporting efficiency. Conversely, board size and institutional ownership do not significantly influence reporting timeliness, suggesting that governance effectiveness depends more on monitoring quality, board engagement, and enforcement mechanisms rather than structural characteristics alone.

The findings contribute to agency theory by demonstrating that effective governance mechanisms reduce information asymmetry and managerial opportunism, thereby improving the efficiency and reliability of financial reporting processes. This finding is consistent with contemporary corporate governance perspectives, which emphasise that governance effectiveness is determined by the quality of monitoring, accountability, and stakeholder engagement rather than the mere existence of governance structures (OECD, 2023; Christensen et al., 2021). From a practical perspective, insurance firms should strengthen independent board oversight, enhance audit committee effectiveness, and promote high-quality external auditing practices to accelerate financial disclosure and improve stakeholder confidence.

Despite these contributions, this study has several limitations. The analysis focuses exclusively on listed insurance firms, which may limit the generalisability of the findings across other industries and institutional contexts. Future research may extend the sample to multiple sectors and incorporate additional governance dimensions, including CEO characteristics, board diversity, ESG governance, audit committee expertise, and sustainability-related disclosure mechanisms. Furthermore, future studies may employ more advanced econometric techniques, such as dynamic panel estimation and instrumental variable approaches, to address potential endogeneity issues and improve causal inference (Roodman, 2009; Baltagi, 2021).

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