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Corporate Governance Impact on Integrated Reporting Disclosure Quality: Evidence from Pre- and Post-COVID-19 on Chinese Listed Firms

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Abstract

This study delves into the intricate relationship between corporate governance practices and integrated reporting disclosure. Focusing on 79 companies listed on the Shenzhen Stock Exchange, we scrutinize five pivotal variables: the top five shareholders' shareholding percentage, independent directors' representation, CEO duality, gender diversity within the board of directors, and the influence of institutional investors. Leveraging the Hausman test and a fixed-effects model, we draw on data sourced from the Choice Financial Terminal for governance metrics and firms annual report for integrated reporting information. To test these hypotheses, the study employs a regression model on a sample of Chinese listed firms, utilizing an integrated reporting quality scorecard to measure the extent and quality of their disclosures. Our findings reveal a nuanced landscape: while a negative correlation emerges between the shareholding percentage of top shareholders and integrated reporting quality from 2018 to 2019, other variables—including independent directors, CEO duality, gender diversity, and institutional investors—do not show significant impacts during this period. Interestingly, gender diversity displays a negative correlation in 2021-2022, contrasting with the neutral impact observed for the other variables. This study enriches our understanding of corporate governance mechanisms influencing disclosure practices, particularly within China's evolving economic landscape, pre- and post-COVID-19. By achieving these research objectives, this study aims to provide insights to the academic community on the relationship between corporate governance and disclosure and to provide recommendations to help firms better cope with future crises and improve the quality of disclosure. These endeavors are expected to provide solutions to the new challenges posed by the global health crisis in corporate business management.

Keywords: Corporate Governance, Integrated Reporting, COVID-19, Chinese Listed Firms

Introduction

The quality and transparency of a firm's financial reporting are increasingly recognized as crucial indicators of its overall corporate governance practices. In the context of integrated reporting (IR), which encompasses the disclosure of both financial and non-financial information, corporate governance mechanisms can play a pivotal role in determining the

quality and comprehensiveness of such disclosures (Cooray et al., 2020). This is particularly relevant in the wake of the COVID-19 pandemic, which has heightened the need for robust corporate reporting to address the growing demands of stakeholders. In the global landscape, countries place significant emphasis on good corporate governance as well as sustainable development. Corporate governance is now considered indispensable elements for the future development of enterprises, acting as essential soft power. They are gradually becoming universal yardsticks for companies worldwide to gauge their competitiveness.

The International Integrated Reporting Council (IIRC) defines integrated reporting as a concise communication method that delineates how an organization's strategies, governance, performance, and prospects contribute to value creation over the short, medium, and long terms, considering its external environment (IIRC, 2021). In this context, integrated reporting encompassing financial, environmental, social responsibility, and corporate governance information has emerged as a vital practice. It serves as a means of presenting information in a clearer, more concise, and more user-focused format. An integrated report provides comprehensive insights into the performance and operations of a company, surpassing the limitations of traditional financial reporting, which only discloses financial information. The integrated reporting approach enhances and integrates existing reporting frameworks and practices, contributing to the evolution of a corporate reporting system (Li, 2020).

As severe financial fraud or failure and a decrease in stakeholder value have raised public concerns regarding corporate governance issues. Simultaneously, investors have demanded greater governance rights as they move to build funds to expand their portfolios in growing economies. Wang & Wen (2020), assert that in the day-to-day operations of corporate governance, various stakeholders, including shareholders, executives, the board of directors, and other relevant parties, are typically involved. This perspective underscores that "corporate governance" is not just a set of rules, but an arena for power struggles within the firm. The prominence of corporate governance issues emerges as pivotal in enterprises' pursuit of operational objectives and maximization of corporate value. Simultaneously, investors in their pursuit of diversified portfolios in emerging economies have escalated their focus on governance factors as a strategy to mitigate associated risks (Tian et al., 2019). This dual focus on corporate governance underscores its critical role in both internal company dynamics and external risk-management strategies.

Existing research has highlighted how various elements of corporate governance, such as the composition and independence of the board of directors, ownership structure, and the strength of regulatory oversight, can significantly influence the quality and reliability of a firm's integrated reporting disclosures (Malone et al., 1993). The studies done by Cooray et al. (2020) found that a well-structured and independent board, along with the presence of dedicated board committees (e. g., audit, risk, and sustainability committees), can enhance the quality of integrated reporting by strengthening the oversight and monitoring of management's reporting practices (Fatmawati & Trisnawati, 2022; Cooray et al., 2020). Similarly, the level of ownership concentration and the presence of institutional investors have been linked to more comprehensive and transparent integrated reporting, as these stakeholders often demand higher levels of corporate accountability and disclosure.

Despite the voluntary nature of integrated reporting in all countries except South Africa, extensive research has explored the relationship between corporate governance variables and IR adoption of integrated reporting (Cooray et al., 2020; Vitolla et al., 2020). However, these studies have predominantly focused on developed countries, highlighting the potential disparities in findings between developed and developing nations. To address this gap, this study investigates the impact of corporate governance on the disclosure of integrated reports with a specific focus on Chinese listed companies. However, the unprecedented economic and social impacts of COVID-19 have presented new challenges to corporate governance and disclosure. In the face of the rapidly changing business environment before and after the outbreak, companies are not only required to adapt but also to adjust governance strategies to better meet the expectations of stakeholders.

Therefore, this study seeks to understand the impact of corporate governance on the quality of IR disclosure of integrated reporting in the context of COVID-19, with a specific focus on Chinese-listed companies. As, in the context of China, the country's recent push towards more sustainable and transparent corporate practices, coupled with the disruptive impact of the COVID-19 pandemic, presents a unique opportunity to investigate the evolving relationship between corporate governance dynamics and reporting transparency. This pivotal moment not only sheds light on how regulatory changes and economic shocks shape corporate behavior but also underscores the growing importance of robust governance frameworks in navigating both crises and long-term sustainability challenges.

The implications of this study are twofold. First, it contributes to the existing literature on the determinants of integrated reporting quality, providing empirical evidence from the Chinese context. Second, it highlights the critical role of corporate governance in ensuring the transparency and comprehensiveness of corporate reporting, particularly in times of crisis such as the COVID-19 pandemic. Managers should consider strengthening their corporate governance practices to enhance the quality of their integrated reporting disclosures, which can ultimately improve their firm's overall transparency and stakeholder engagement.

Review of Literature

Theoretical Background

Stakeholder theory posits that companies owe accountability not only to shareholders but also to a diverse array of societal stakeholders, spanning customers, suppliers, employees, communities, unions, political entities, and auditors (Freeman et al., 2018). This perspective challenges the traditional "shareholder primacy" model of governance, advocating instead for a broader consideration of stakeholder interests, as articulated in Stakeholder Corporate Governance Theory (SCGT) (Anand et al., 2020). Over time, control within corporations has shifted from shareholder meetings towards greater board centrism, particularly notable in the United Kingdom and United States, where directors assume greater responsibility for corporate integrity and diligence.

In the United States, corporate law favors "director primacy," empowering boards to exercise corporate powers and manage business activities comprehensively (Model Business Corporation Act). Directors are seen not merely as agents of shareholders but as trustees accountable to all stakeholders. Integrated reporting, which combines financial, sustainability, and corporate governance disclosures, plays a pivotal role in this governance

framework. Annual reports typically encompass financial statements, corporate governance practices, and social responsibility initiatives, providing comprehensive insights sought by stakeholders such as investors, creditors, auditors, management, and government officials.

Directors bear the responsibility of furnishing stakeholders with timely and transparent information, including both financial and non-financial disclosures (García-Sánchez et al., 2018). Integrated reporting facilitates proactive communication between companies and stakeholders, nurturing trust, fortifying corporate governance, and promoting sustainable practices over the long term.

Agency theory further elucidates corporate governance's role in mitigating principal-agent conflicts between shareholders and management (Jensen et al., 2019). Information asymmetry between managers and shareholders can foster conflicts of interest and opportunistic behavior, which institutional investors often oversee to mitigate these risks (Hafeez et al., 2015). Integrated reporting should accommodate the oversight role of institutional investors, ensuring transparency and delivering valuable information to stakeholders, thereby addressing agency issues effectively.

The board of directors, pivotal in corporate governance frameworks, assumes responsibility for safeguarding stakeholder interests and supporting strategic decision-making (Mrabure et al., 2020). Effective communication choices between the company and stakeholders underscore accountability and alignment with stakeholder interests (Crane et al., 2020). Integrated reporting, by providing high-quality data, reduces information asymmetry significantly, thereby contributing to resolving agency conflicts between shareholders and management.

Wang's (2020) agency theory perspective, effective corporate governance aligns managerial actions with shareholder interests, extending to the adoption of integrated reporting. Such governance not only promotes integrated reporting practices but also ensures the provision of high-quality information to mitigate information asymmetry and reduce agency costs across corporate environments.

Hypotheses Development

The global outbreak of the COVID-19 pandemic has presented unprecedented challenges to companies and boards worldwide, leading to a fundamental reshaping of corporate governance and integrated reporting practices. The multifaceted impact of this crisis, including liquidity freezes, disrupted supply chains, unfulfilled contracts, and near-collapse of business operations and systems, has been extensively documented (Khatib & Nour, 2021) Various sectors, such as the stock market, labor market, business modeling, financial sector, small and medium-sized enterprises, and other industries, have witnessed significant disruptions due to the pandemic (Ashraf, 2020; Mayhew & Anand, 2020; Yahaya et al., 2020; Baicu et al., 2020; Ratten, 2020). The rapid and extensive nature of the financial shock induced by the pandemic distinguishes it from traditional financial crises, catching many companies off guard and leaving little time for pre-emptive measures or strategic planning.

Amid this crisis, companies not only grappled with internal operational challenges, but also faced an exceptionally challenging external economic landscape. Dual internal and external

shocks exert immense pressure on financial stability, strategic decision-making, and overall resilience (Zhu, 2021). Consequently, crisis management and business continuity plans have become integral components of corporate governance. The COVID-19 outbreak has increased the importance of crisis management and business continuity plans in corporate governance. In times of distress, there is increased pressure on company management to make disclosures that enhance the company's image and portray it as healthy and sustainable. However, this pressure may lead some companies to make selective disclosures, potentially compromising IR quality of integrated reporting. As companies navigate the challenges posed by the pandemic, maintaining transparency and the quality of integrated reporting disclosures becomes crucial for building trust and ensuring a sustainable path forward.

Percentage of Shareholding of Top 5 Shareholders

Based on agency theory, high shareholding concentration among majority shareholders simplifies management monitoring, as they can appoint management and exert decisive control. In Chinese listed firms, the principal-agent problem often centers on conflicts between majority and minority shareholders. Despite high control, majority shareholder actions may not always align with minority interests (Liu, 2021). To mitigate these conflicts, companies may enhance disclosure quality, particularly in integrated reports, demonstrating management's commitment to all stakeholders.

Conversely, firms with higher equity concentration may face reduced agency conflicts and public scrutiny due to fewer publicly traded shares, potentially leading to lower disclosure quality in integrated reports (Vitolla et al., 2019). Therefore, the concentration of shareholding among the top five shareholders likely impacts the quality of integrated report disclosures. The COVID-19 pandemic has accelerated shifts in corporate governance and reporting practices worldwide. Companies have faced unprecedented challenges that require them to reassess their priorities, risk management strategies, and stakeholder engagement practices. Pre- and post-COVID, companies may alter their integrated reporting practices to adapt to new realities, including heightened scrutiny from stakeholders and regulatory bodies. The proportion of shareholding among the top five shareholders could influence how companies respond to these pressures, impacting the transparency and quality of their integrated reporting disclosures. Accordingly, we propose the following hypotheses:

H1: There is a relationship between the proportion of shareholding among the top five shareholders with the integrated reporting disclosure pre- and post-covid.

Percentage of Independent Directors

The independent director system originated in the United States as a system to prevent major shareholders and management from colluding to pursue their own interests at the expense of the company (Huang, 2018). Theoretically, a higher proportion of independent directors should help to improve the quality of corporate governance and information disclosure, as independent directors are usually not under the direct control of the company's management and are more likely to provide objective and independent advice to ensure transparent and responsible disclosure of the company's operations and financial condition.

In terms of the fundamental knowledge that independent directors should possess, tailored requirements should be stipulated based on the characteristics of listed companies and the powers vested by independent directors to meet the most basic requirements for their duties.

For instance, the National Association of Securities Dealers (NASD) originally stipulated that "independent directors should at least be capable of understanding the company's financial statements." However, lapses in reviewing financial statements have been a leading cause of penalties for independent directors in China (Zhou, 2024). The inability of independent directors to fully comprehend a company's financial statements is among the reasons contributing to the decline in the quality of integrated report disclosures.

Therefore, the proportion that is independent of the board of directors may affect the disclosure quality of integrated reports. Thus, we formulated the following hypotheses:

H2: There is a relationship between the proportion of independent board of directors with integrated reporting disclosure during pre and post covid.

Duality Role

Zheng et al (2015), contend that the combination of Chairman and CEO roles implies a high degree of alignment between decision-making authority and executive power within the company, determining the influence of executive management on the quality of corporate social responsibility (CSR) information disclosure. Optimal CSR information disclosure performance necessitates a higher level of resource integration at the corporate level, where factors related to market development, green products, ecological economic portfolios, competitive strategies, and others require meticulous integration into the overarching corporate strategy. Furthermore, CSR information disclosure is considered an integral component of integrated reporting. Thus, it can be inferred that the combination of the Chairman and CEO roles contributes to enhancing the quality of integrated reporting information disclosure.

Zhang (2011), contends that companies with a combination of Chairman and CEO roles exhibit a negative correlation with the quality of information disclosure. This is attributed to the fact that the combination of these two roles implies self-supervision, excessive concentration of managerial power, and a reduction in the board's supervisory function over management. This scenario fosters internal control issues, making it easier for the company to conceal unfavorable information, ultimately leading to a decline in the quality of integrated reporting information disclosure.

Therefore, duality may affect the disclosure quality of integrated reports. Thus, we formulated the following hypotheses:

H3: There is a relationship between the duality role and IR disclosure during pre and post covid.

Gender of Board of Directors

Recent research has extensively utilized agency theory to explain the potential impact of gender diversity on disclosure practices (Garcia-Sánchez et al., 2017). From an agency perspective, female directors may enhance the AC's supervisory activities of the audit committee because women tend to be more independent (Bravo, & Alcaide-Ruiz, 2019). Inclusion of female directors may increase board diversity and introduce diverse experiences, perspectives, and values. A diverse board is more likely to establish more effective supervisory mechanisms, particularly in critical roles such as the audit committee. Female directors may bring unique insights distinct from their male counterparts, strengthening the oversight of

financial reporting and internal controls and thereby improving the quality of integrated report disclosure.

Shen et al (2018), posit that while female executives play a positive role in enhancing internal governance within a corporation, an excessive degree of supervision may lead to unintended consequences, ultimately resulting in a decline in the quality of integrated report disclosure.

Therefore, the gender of the board of directors may affect the disclosure quality of integrated reports. Thus, we formulated the following hypotheses:

H4: There is a relationship between the gender of the board of directors and IR disclosure during pre and post covid.

Number of Institutional Investors

In addition to board oversight, the literature suggests another form of direct shareholder monitoring. Institutional investors, representing shareholder groups with significant holdings, play a vital role because of their professional qualifications, enabling cost-effective monitoring activities (Manning et al., 2019). Consequently, firms with substantial institutional ownership are subject to thorough monitoring. Institutional investors, motivated by their considerable shareholdings, incentivize management to provide comprehensive information that meets their needs. This dynamic leads companies with high institutional ownership to offer more extensive disclosures. Diamond and Verrecchia (1991), suggest that the presence of institutional investors compels companies to enhance information provision to mitigate information asymmetry.

However, an increase in the number of institutional investors may stem from the market's recognition of a company's investment potential, attracting more institutional investors. However, as the number of investors increases, it may trigger competition among institutional investors, each of whom wants to share in the company's growth and profitability, vying for a larger share of the investment to earn higher returns. Under this intense competition, companies need to better meet the expectations of different investors to attract more institutional investors. This competition may lead companies to coordinate and integrate information more carefully to meet diverse investor needs, thus making it more difficult to present information in integrated reports (Liu & Gao, 2021). This may result in a lower quality of disclosure in integrated reports.

Therefore, the number of institutional investors may affect the disclosure quality of integrated reports. Thus, we formulated the following hypotheses:

H5: There is a relationship between the number of institutional investors and IR disclosure during pre and post covid.

Research Methodology

Population and Sample Selection

The study population comprised 2,848 Chinese A-share listed companies spanning the years 2018-2019 and 2021-2022. To ensure a representative sample from the extensive pool of A-share listed companies, a systematic selection approach was employed. The sampling

Procedure comprise of data sourced from the Shenzhen Stock Exchange and Choice Financial Terminals. Industry classifications were based on NAICS codes, specifically codes 1 to 6, tailored to the study's context. Initially, 100 companies were included across all industries within these NAICS codes. Due to data constraints, 21 firms were excluded from the sample due to incomplete financial data necessary for measuring the surplus quality variable. Therefore, the final sample consisted of 79 companies, yielding 316 observations over a 4-year period. The sample size for each industry was adjusted using the scaling formula described by Kristiawan (2024).

$$\text{Sample numbers in every industry} = \frac{\text{Population numbers in every industry}}{\text{Population numbers in all industries}} \times \text{Sample numbers for all industries.}$$

Table 1
Types of Industry, Sample Totals, and Observation Totals

NAICS Code	Type of industry	Sample totals	Observation totals
1	Agriculture	1	4
2	Mining & construction	3	12
3	Manufacture	63	252
4	Trading company, retail & transportation	6	24
5	Telecommunication & realestate	5	20
6	Health, hospitality & restaurant	1	4

First, we excluded companies from the financial industry. This is because the operating models and financial statement structures of companies in the financial sector, such as banks and insurance companies, differ significantly from those of companies in other sectors. Since our study primarily focuses on non-financial companies, excluding financial companies can make the sample more homogeneous and easier to compare.

Second, we excluded ST and PT companies. In the Chinese stock market, companies with Special Treatment (ST) and Particular Transfer (PT) designations usually face serious financial problems or other risks. The operating conditions of these companies may not reflect the situation of generally well-operated companies; hence, they are often excluded from analyses.

Third, we must exclude companies with debt-to-asset ratios greater than one. A company's debt-to-asset ratio greater than one implies that the company's liabilities exceed its total assets, indicating that the company may be under severe financial stress. The results of the analysis of these companies might be distorted due to their financial situation; therefore, we exclude such companies. Finally, we need to exclude companies with missing key variables. If a company's main variables are missing, then we will not be able to conduct a valid statistical analysis of the company.

This study intentionally selected 100 companies listed on the A-share market in China based on market capitalization for research purposes. Therefore, purposive sampling is involved. From 2018 to 2019 and 2021 to 2022, not every Chinese A-share listed company had an equal chance of being selected; hence, our sampling falls under non-probability sampling. Purposive sampling is also a form of non-probability sampling in which researchers choose the sample based on their judgment.

Data Analysis

Cross-sectional data are data from different subjects at the same point in time or over the same period, also known as static data; time-series data are data collected at different times and used to describe phenomena over time. Panel data differ from conventional cross-sectional or time-series data by incorporating not only temporal changes across various indicators, but also comparisons across distinct samples, adding an additional dimension to the scope of analysis (Baltagi, 2008).

In comparison to cross-sectional and time-series data, panel data offer several advantages, including the ability to conduct statistical analyses with larger samples, thereby enhancing accuracy and reliability. This approach facilitates the modeling of more complex relationships by considering temporal changes in cross-sections. Additionally, panel data analysis allows for the effective control of heterogeneity in the sample, addressing individual differences, and improving the model's accuracy and explanatory power (Baltagi, 2008).

This thesis considers multicollinearity and other relevant factors in the data when selecting specific panel data analysis methods. The selection of specific data analysis methods must integrate the econometric test results. This includes the assessment of the applicability and validity of the selected method on an actual dataset. By considering these factors, the choice of analytical methods applicable to a particular panel dataset can be made more comprehensive and accurate, ensuring that reliable and valid research conclusions can be drawn.

Variables Measurement

Dependent Variables

To objectively measure the extent of integration in the reports under examination, we developed the Index of Integrated Reporting Disclosure (IRD) using the methodology outlined by (Frías-Aceituno et al 2013). The construction of the composite index for <IR> disclosure aligns with the guidelines provided by the International Integrated Reporting Council (2021), in their International <IR> Framework. This composite index encompasses five constituent sub-indices: business model, connectivity, materiality, governance, and reporting content. Each component index is described below (Rivera-Arrubla, Zorio-Grima, & García-Benau, 2017).

Business Model: An integrated report should address the following questions: What is the organization's business model? An organization's business model refers to the system through which the institution converts inputs into outputs and outcomes, creating value in the short, medium, and long terms to achieve its strategic objectives. The organization's business model includes key elements such as inputs, operations, outputs, and outcomes. The scoring criteria, as described above, were allocated one point for each fulfilled aspect, with a

total score of 10 points. This section accounts for 16% of the total Integrated Reporting Disclosure (IRD) index.

Connectivity: an integrated report should demonstrate the combination, interrelation, and dependencies among factors that impact an organization's ability to create long-term value. As integrated thinking becomes deeply ingrained in organizational activities, the coherence of information naturally flows into management reporting, analysis, and decision making, as reflected in the integrated report. Connectivity is composed of interconnectivity among content elements; consideration of past, present, and future; capital; and various types of information. The scoring criteria are described below, with five sub-criteria of two points each, up to a maximum of 10 points. The total weight of this component in the Integrated Reporting Disclosure (IRD) is 28% of the total score.

Materiality: A comprehensive report should disclose information about matters that substantially impact an organization's short-, medium-, and long-term value creation capabilities. Materiality is composed of the materiality determination process, identification of relevant matters, assessment of importance, and determination of disclosed information. 2.5 points for each of the above four points, out of a total of 10 marks. This evaluation contributed a total score of 10 points, accounting for 20% of the Integrated Reporting Disclosure (IRD) weight.

Governance: the integrated report should address the following questions: How does the organization's governance structure support its ability to create value in the short, medium, and long term? These components consist of leadership structure and diversity, strategic decision-making and risk attitude, management actions for strategic direction and risk management, culture, ethics, and values, governance practices beyond legal requirements, and linkage of compensation and incentives to value creation This section follows a scoring criterion with five aspects, each contributing 2 points, totaling 12% of the overall Integrated Reporting Disclosure (IRD).

The distinctions between governance variables and corporate governance variables are as follows, with the aim of establishing a clear differentiation. Corporate governance variables are specific metrics designed to measure the distinctive features of corporate governance. They operate as independent measurement factors, focusing primarily on the internal structures. By contrast, governance standards are general criteria and guidelines used for the comprehensive assessment of the overall quality of corporate governance. These standards emphasize various aspects of governance quality, including culture and risk management.

Report Content: The integrated report itself, the company's website, or both should encompass the following types of information: corporate governance details, financial information, financial statement audit reports, assurance of non-financial information or corporate social responsibility (CSR) reports, and sustainable development information. For each company in the sample, a thorough review of each item was conducted. There were five items, each worth two points. These five items collectively contributed 24% of the Integrated Reporting Index (IRD).

The following scoring criteria were derived from the guidelines provided by the International Integrated Reporting Council (2021), in its International <IR> Framework. In conjunction with the above description, the scoring criteria are as follows:

Table 2
Scoring criteria for the quality of disclosure in integrated reports

Description:	Points	Weight
Business Model:		
Incorporates straightforward graphical representations.	1	16%
Explains key business model components and outlines the organization's specific circumstances logically.	1	16%
Encompasses information on strategic aspects, risks, opportunities, and performance.	1	16%
Significant inputs possess the capacity to generate value.	1	16%
Content demonstrates innovation.	1	16%
Exhibits adaptability to change.	1	16%
Introduces primary products and services.	1	16%
Outlines by-products and waste (including emissions).	1	16%
Includes internal outcomes or external results.	1	16%
Connectivity:		
Establishes a linkage between the organization's strategy and business model with external environmental change.	2	28%
Delineates the organization's past, present, and future.	2	28%
Encompasses financial and other organizational information.	2	28%
Incorporates not only quantitative data but also qualitative information.	2	28%
Combines organization-provided information with external data for a thorough evaluation.	2	28%
Materiality:		
Provides information on matters significantly impacting the organization's short-term, medium-term, and long-term value creation.	2.5	20%
Assesses the impacts on strategy, governance, performance, or outlook by considering relevant issues.	2.5	20%

Considers aspects such as financial, operational, strategic, reputational, and regulatory considerations.	2.5	20%
Includes textual descriptions, charts, and other visual aids.	2.5	20%
Governance:		
Covers details on the skills and diversity of the management team.	2	12%
Contains information about the organization's attitude towards risk.	2	12%
Incorporates regulatory content.	2	12%
Includes content related to culture, ethics, and values.	2	12%
Contains content related to compensation and incentives.	2	12%
Report Content:		
Corporate Governance Information: transparency of the corporate governance structure, including leadership skills and diversity. Management's strategic decision-making and risk management approaches. Whether the company adopts governance practices beyond legal requirements.	2	24%
Financial Information: inclusion of detailed financial information in the integrated report, such as balance sheets and income statements.	2	24%
Financial Statement Audit Report: whether the financial statements undergo an audit and include an audit report.	2	24%
Assurance on Non-financial Information or CSR Report: inclusion of non-financial information, such as employee welfare, demonstrating the company's commitment and practices in social responsibility.	2	24%
Sustainable Development Information: presentation of the company's strategies and practices in economic, environmental, and social sustainability in the report. Inclusion of information on resource usage and conservation, carbon emission management, use of green energy, and related aspects.	2	24%

Each item in the sample was examined by each company. Therefore, both the partial index (P_i) and total disclosure index (IRD) have values ranging from 0 to 10. The formulas for calculating the partial index (P_i) and the total disclosure index (IRD) are:

$$IRD = \sum_{i=n}^{n} (P_i * Weigh_i)$$

P_i= partial index score.
$Weight_i$=Percentage of partial index score.
n = 5

Independent Variables

Percentage of shareholding of the top five shareholders (PTS): This shows the combined ownership stake of the five largest shareholders in a company, indicating ownership concentration.

The percentage of independent directors (PID) reflects the proportion of impartial directors on a company's board and provides insights into corporate governance practices.

Duality role (DR): indicates whether the Chairman and CEO positions are consolidated, where one individual hold both roles.

Gender of board of directors (GBD): represents the number of women on a company's board, highlighting efforts towards gender diversity.

Number of institutional investors (NII): Counts professional investment firms holding shares in the company, indicating broader interest from the investment community.

Control Variables

This research also utilizes several conventional control variables identified in previous studies, including:

State-owned enterprise (SOE): A business where the government owns or controls a significant portion, influencing key decisions and appointing executives.

Leverage (LEV): Total liabilities divided by total assets. Higher leverage means more debt in financing, thereby increasing debt service risk.

Business size (SIZE): The natural logarithm of a firm's total assets, used to normalize size differences in the analysis.

Return on assets (ROA): net profit divided by total assets. indicates the percentage of profit generated from total assets, a measure of profitability, and operational efficiency.

Model Specification

This paper constructs a multiple linear regression model to test the effect of corporate governance on the quality of integrated reporting disclosure, and the constructed regression model is as follows:

$$\mathrm{IRD}_{i,t} = C + \beta_1 \mathrm{PST}_{i,t} + \beta_2 \mathrm{PID}_{i,t} + \beta_3 \mathrm{DR}_{i,t} + \beta_4 \mathrm{GBD}_{i,t} + \beta_5 \mathrm{NII}_{i,t} + \beta_6 \mathrm{SIZE}_{i,t} + \beta_7 \mathrm{LEV}_{i,t} + \beta_8 \mathrm{ROA}_{i,t} + \beta_9 \mathrm{SOE}_{i,t} + \varepsilon_{i,t}$$

where, β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8, β_9 are the characteristic parameters of each variable and $\varepsilon_{i,t}$ is the residual. where i represents an individual firm; t represents a year; $\varepsilon_{i,t}$ denotes a disturbance term that varies both individually and over time; and $\mathrm{IRD}_{i,t}$ is an explanatory variable representing the quality of integrated reporting disclosure of firm i at point t. IRD:

integrated reporting disclosure, PST: percentage of shareholding of top five shareholders, PID: percentage of independent directors, DR: duality role, GBD: gender of board of directors, NII: number of institutional investors, SOE: state-owned enterprise, LEV: leverage, SIZE: business size, and ROA: return on assets.

Table 3
Variables Description and Source

Variable Name	Variable Definition	Source
Dependent variable：		
Integrated reporting disclosure (IRD)	The index of integrated reporting disclosure.	Company-related Websites
Independent variable：		
Percentage of shareholding of top 5 shareholders. (PST)	The percentage of shareholding of top 5 shareholders, denoting the proportion of a company's shareholding of top 5 in relation to its total share capital.	Choice Financial Terminal.
Percentage of independent directors. (PID)	The percentage of independent directors represents the proportion of independent directors on a company's board of directors.	Choice Financial Terminal
Duality role. (DR)	Whether the chairman concurrently serves as the CEO. If true, assign 1; otherwise, assign 0	Choice Financial Terminal
Gender of board of directors. (GBD)	This variable is expressed in terms of the number of female directors.	Choice Financial Terminal
Number of institutional Investors. (NII)	Number of institutional investors represents the count of institutional entities or organizations that hold shares in a company.	Choice Financial Terminal
Control variables:		
State-owned enterprise. (SOE)	State-owned enterprises represented by 1, non-state-owned enterprises represented by 0	Choice Financial Terminal
Leverage. (LEV)	Total liabilities / total assets	Choice Financial Terminal

Business size. (SIZE)	Natural logarithm of end-of-period total assets	Choice Financial Terminal
Return on assets.(ROA)	Net profit / total assets	Choice Financial Terminal

Results And Discussion

Descriptive Statistics

Table 4.1 presents individual descriptive statistics for the years 2018-2019, while table 4.2 displays the corresponding statistics for the years 2021-2022.

Table 4.1
Descriptive Statistics (2018-2019)

	count	mean	sd	min	max
IRD	158	7.94	0.32	7.14	8.82
PST	158	0.57	0.22	0.01	0.96
PID	158	0.39	0.088	0	0.67
DR	158	0.26	0.44	0	1
GBD	158	1.0	1.07	0	5
NII	158	98.46	68.8	5	527
SIZE	158	25.19	1.45	21.12	28.64
LEV	158	0.54	0.18	0.095	0.89
ROA	158	0.07	0.06	-0.001	0.24
SOE	158	0.57	0.50	0	1

The descriptive statistics table provides information on the central tendency and dispersion of the variables (IRD, PST, PID, DR, GBD, NII, SOE, LEV, SIZE, and ROA) based on a sample of 158 observations. The analyses of descriptive statistics for 2018-2019 and 2021-2022, respectively:

The variable integrated reporting disclosure ranges from 7.14 to 8.82. The calculated mean value was 7.94, indicating a central tendency of the data. The standard deviation (SD) is 0.32. The variable percentage of shareholding of the top five shareholders has a mean value of 0.57, with a standard deviation (SD) of 0.22, indicating a distribution or variation around the mean with a minimum value of 0.01 and a maximum value of 0.96. The percentage of independent directors has a mean value of 0.39, with a standard deviation (SD) of 0.088, ranging from a minimum value of 0 to a maximum value of 0.67. The duality role variable has a mean of 0.26, with a standard deviation (SD) of 0.44, ranging from a minimum value of 0 to a maximum value of 1. The gender variable of the board of directors has a mean of 1.0, with a standard deviation (SD) of 1.07, ranging from a minimum value of 0 to a maximum value of 5. The variable number of institutional investors has a mean value of 98.46, with a standard

deviation (SD) of 68.8, ranging from a minimum value of five to a maximum value of 527. Moreover, the business size variable ranges from 21.12 to 28.64, with a mean value of 25.19 and a standard deviation (SD) of 1.45. The variable leverage ranged from 0.095 to 0.89, with a mean of 0.54 and a standard deviation (SD) of 0.18. Lastly, the variable return on assets ranges from -0.001 to 0.24, with a mean of 0.07 and standard deviation (SD) of 0.06.

Table 4.2
Descriptive Statistics (2021-2022)

	count	mean	sd	min	max
IRD	158	8.23	0.30	7.43	8.87
PST	158	0.59	0.18	0.12	0.95
PID	158	0.40	0.11	0	0.67
DR	158	0.23	0.42	0	1
GBD	158	1.21	1.05	0	4
NII	158	117.20	64.65	5	478
SIZE	158	25.71	1.24	23.00	28.61
LEV	158	0.54	0.18	0.09	0.89
ROA	158	0.071	0.076	-0.116	0.34
SOE	158	0.45	0.50	0	1

The variable integrated reporting disclosure ranges from 7.43 to 8.87, with a calculated mean value of 8.23. The standard deviation (SD) is 0.30. The variable percentage of shareholding of the top five shareholders has a mean value of 0.59, with a standard deviation (SD) of 0.18, indicating that its distribution or variation is around the mean with a minimum value of 0.12 and a maximum value of 0.95. The variable percentage of independent directors has a mean value of 0.40, with a standard deviation (SD) of 0.11, ranging from a minimum value of 0 to a maximum value of 0.67. The duality role variable has a mean of 0.23, with a standard deviation (SD) of 0.42, ranging from a minimum value of 0 to a maximum value of 1. The gender of the board of directors' variable has a mean of 1.21, with a standard deviation (SD) of 1.05, ranging from a minimum value of 0 to a maximum value of 4. The variable number of institutional investors has a mean of 117.20, with a standard deviation (SD) of 64.65, ranging from a minimum value of 5 to a maximum value of 478. Moreover, the variable business size ranges between 23.00 and 28.61, with a mean of 25.71 and a standard deviation (SD) of 1.24. The variable leverage ranges between 0.09 and 0.89, with a mean of 0.54 and a standard deviation (SD) of 0.18. Lastly, the variable return on assets ranges from -0.116 to 0.34, with a mean of 0.071 and a standard deviation (SD) is 0.076.

Correlation Analyses

Multicollinearity arises when two or more independent variables in a regression model are correlated, representing a violation of one of the fundamental assumptions of a successful regression model (Daoud, 2017). The following is an interpretation of this result:

Table 5.1 presents correlation test for the years 2018-2019, while table 5.2 displays the corresponding statistics for the years 2021-2022.

Table 5.1
Correlation Matrix (2018-2019)

Correlation Test										
	IRD	PST	PID	DR	GBD	NII	SIZE	LEV	ROA	SOE
IRD	1									
PST	-0.005	1								
PID	-0.099	0.087	1							
DR	-0.093	-0.224***	-0.102	1						
GBD	-0.017	-0.098	-0.209***	0.194**	1					
NII	0.212***	-0.065	0.083	0.011	0.022	1				
SIZE	-0.177**	0.285***	0.066	0.027	-0.106	-0.021	1			
LEV	0.118	-0.122	-0.067	0.087	-0.103	-0.208***	0.422***	1		
ROA	-0.335***	0.014	-0.106	0.06	0.13	0.061	-0.286***	-0.642***	1	
SOE	-0.167**	0.115	0.094	-0.248***	-0.325***	-0.104	0.052	-0.095	-0.021	1

** p < 0.1, ** p < 0.05, *** p < 0.01*

Table 5.1 presents the correlation coefficients of all the explanatory variables for the year 2018-2019. Correlation is a test used to identify the level of multicollinearity among explanatory variables. The correlation coefficient between return on assets and state-owned enterprises is -64.2%, which indicates that there is a highly negative relationship between return on assets and state-owned enterprises, that is, when return on assets increases, state-owned enterprises usually decrease. The lowest correlation coefficient between integrated

reporting disclosure and the percentage of shareholding of the top five shareholders is -0.5%, which is close to zero, indicating that there is almost no linear relationship between them. This correlation coefficient was close to zero, indicating that there was almost no linear relationship between them. Because the correlation coefficient between the two explanatory variables is less than 0.90, the result of the correlation matrix indicates that there is no serious problem of multicollinearity.

Table 5.2
Correlation Matrix (2021-2022)

Correlation Test										
	IRD	PST	PID	DR	GBD	NII	SIZE	LEV	ROA	SOE
IRD	1									
PST	-0.005	1								
PID	-0.099	0.087	1							
DR	-0.093	-0.224***	-0.102	1						
GBD	-0.017	-0.098	-0.209***	0.194**	1					
NII	0.212***	-0.065	0.083	0.011	0.022	1				
SIZE	-0.177**	0.285***	0.066	0.027	-0.106	-0.021	1			
LEV	0.118	-0.122	-0.067	0.087	-0.103	-0.208***	0.422***	1		
ROA	-0.335***	0.014	-0.106	0.06	0.13	0.061	-0.286***	-0.642***	1	
SOE	-0.167**	0.115	0.094	-0.248***	-0.325***	-0.104	0.052	-0.095	-0.021	1

** p < 0.1, ** p < 0.05, *** p < 0.01*

Table 5.2 shows the correlation coefficients of all explanatory variables for the year 2021-2022. The largest negative correlation coefficient is -64.2% between return on assets and state-owned enterprises. This finding indicates a strong negative relationship between return on assets and state-owned enterprise. The closest correlation coefficient to zero is -0.5% between integrated reporting disclosure and the percentage of shareholding of the top five shareholders. This indicates that there is almost no linear relationship between the two variables. This indicates that there is almost no linear relationship between the two variables.

By examining the maximum and minimum correlation values, it is possible to obtain a clearer picture of the extreme relationships between the variables. Because the correlation coefficient between the two explanatory variables is less than 0.90, the result of the correlation matrix indicates that there is no serious problem of multicollinearity.

Hausmann Test

The Hausman test, introduced by economist Jerry Hausman in 1978, has spurred a substantial body of literature that focuses on specification tests for conditional mean models in regression functions. Widely applied in econometrics and panel data analysis, this test is particularly prevalent in comparing fixed- and random-effects models within the panel data context. In addition to exogenous hypothesis testing, the Hausman Test offers a formal statistical evaluation to determine whether unobserved individual effects correlate with the moderating regression variables in the model. Non-rejection of the exogeneity of unobserved individual effects supports the random effects model, whereas rejection favors the fixed effects model. The outcomes of the Hausman correlation test illustrate the variation in coefficients between the fixed effects model (fe) and random effects model (re). The interpretation of this result is as follows.

Table 6.1 presents hausmann test for the years 2018-2019, while table 6.2 displays the corresponding statistics for the years 2021-2022

Table 6.1
Hausmann Test (2018-2019)

Hausmann Test

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
PST	-0.0049803	-0.0014486	-0.0035317	0.0017833
PID	-0.2505571	-0.2630102	0.012453	0.0431442
DR	-0.0072305	-0.0917991	0.0845686	0.0276739
GBD	0.0334079	0.0329025	0.0005054	0.0444398
NII	0.0004391	0.0010332	-0.000594	0.0004103
SIZE	0.4492237	0.0456002	0.4036235	0.0809358
LEV	-0.4327406	0.4199255	-0.8526662	0.3160409
ROA	-1.577568	-0.4117167	-1.165852	0.8331401

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 52.08

Prob>chi2 = 0.0000

In the column of difference terms and standard errors, each variable is associated with the corresponding difference (difference) and standard error (S.E.) values. These values indicate disparities in the estimated coefficients between the fixed-effects and random-effects models. The test statistic (chi2) was reported as 52.08, with a p-value of 0. Typically, if the p-value was below the common significance level (0.05), we rejected the null hypothesis. In this instance, the p-value is zero, which is significantly lower than 0.05, suggesting that the difference terms are statistically significant. This implies systematic differences in the coefficient estimates between the fixed- and random-effects models. Therefore, based on the results of the Hausman test, we reject the null hypothesis and may lean towards selecting the fixed effects model.

Table 6.2
Hausmann Test (2021-2022)

Hausmann Test

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
PST	0.0071697	0.0036347	0.003535	0.0013949
PID	-0.0056584	-0.1321342	0.1264758	0.0466819
DR	-0.0870651	-0.0391621	-0.047903	0.0303116
GBD	-0.0326239	-0.0162589	-0.0163651	0.0128226
NII	-0.000068	0.0010331	-0.0011011	0.0007713
SIZE	0.1778455	-0.0682183	0.2460639	0.0801871
LEV	-0.3764358	0.2216549	-0.5980907	0.339841
ROA	-0.208139	-0.8741601	0.666021	0.222212

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 23.48

Prob>chi2 = 0.0052

According to conventional practice, if the p-value is below the significance level (typically set at 0.05), we reject the null hypothesis. In this instance, the test statistic (chi2) was 23.48, with a p-value of 0.0052, which is significantly less than 0.05. Consequently, we reject the null hypothesis (Ho), indicating a high level of significance for the different terms. This suggests that there are systematic differences in the estimated parameters between the fixed- and random-effects models. In summary, based on the results of the Hausman test, the fixed-effects model tends to be favored, as the significant p-value indicates substantial disparities in the estimated parameters between the two models.

Panel Regression Analysis Results and Discussion

For the panel regression analysis, we applied the fixed impact model, and table 7.1 presents the panel regression analysis results for the years 2018-2019, while table 7.2 displays the corresponding statistics for the years 2021-2022.

Table 7.1
Panel Regression Analysis (2018-2019)

	(1)	(2)	(3)	(4)	(5)
	IRD	IRD	IRD	IRD	IRD
PST	-0.004**				
	[0.002]				
PID		-0.299			
		[0.201]			
DR			-0.038		
			[0.060]		
GBD				0.043	
				[0.042]	
NII					0.000
					[0.001]
SIZE	0.386***	0.332***	0.348***	0.317***	0.347***
	[0.069]	[0.069]	[0.067]	[0.074]	[0.073]
LEV	-0.206	-0.238	-0.272	-0.246	-0.269
	[0.305]	[0.311]	[0.303]	[0.333]	[0.329]
ROA	-1.039*	-1.530*	-1.601**	-1.627*	-1.585*
	[0.565]	[0.812]	[0.771]	[0.820]	[0.903]
SOE	-0.241**	-0.208**	-0.236***	-0.303***	-0.236**
	[0.092]	[0.085]	[0.082]	[0.104]	[0.093]
_cons	-1.460	-0.054	-0.493	0.187	-0.513
	[1.592]	[1.606]	[1.502]	[1.691]	[1.670]
COMPANY	YES	YES	YES	YES	YES
YEAR	YES	YES	YES	YES	YES
r2	0.936	0.934	0.933	0.933	0.933
N	158.000	158.000	158.000	158.000	158.000

** p < 0.1, ** p < 0.05, *** p < 0.01*

The findings reveal a noteworthy negative correlation between the percentage of shareholding of the top five shareholders and the quality of integrated reporting disclosure in the years 2018-2019. This suggests that a higher concentration of shareholdings among the top five shareholders is associated with lower-quality integrated reporting disclosure during this period. Contrary to expectations, the percentage of independent directors, duality role, gender of the board of directors, and the number of institutional investors showed no discernible impact on the quality of integrated reporting disclosure during the same years. This implies that within the context of this study, these specific governance factors did not exhibit a statistically significant relationship with the quality of integrated reporting disclosure.

Table 7.2
Panel Regression Analysis (2021-2022)

	(1)	(2)	(3)	(4)	(5)
	IRD	IRD	IRD	IRD	IRD
PST	0.007				
	[0.004]				
PID		0.020			
		[0.096]			
DR			-0.079		
			[0.064]		
GBD				-0.038*	
				[0.022]	
NII					0.000
					[0.001]
SIZE	0.053	0.036	0.075	0.052	0.033
	[0.075]	[0.076]	[0.076]	[0.078]	[0.073]
LEV	-0.103	-0.102	-0.198	-0.182	-0.093
	[0.255]	[0.248]	[0.257]	[0.267]	[0.249]
ROA	-0.248	-0.437	-0.353	-0.388	-0.447
	[0.291]	[0.311]	[0.313]	[0.298]	[0.322]
SOE	-0.028	-0.020	-0.019	-0.017	-0.021
	[0.036]	[0.037]	[0.037]	[0.034]	[0.037]
_cons	6.483***	7.190***	6.304***	6.864***	7.231***
	[2.025]	[2.051]	[2.006]	[2.099]	[1.985]
COMPANY	YES	YES	YES	YES	YES
YEAR	YES	YES	YES	YES	YES
r2	0.954	0.946	0.948	0.948	0.946
N	158.000	158.000	158.000	158.000	158.000

** p < 0.1, ** p < 0.05, *** p < 0.01*

The results reveal that during the subsequent years, 2021-2022, the study uncovered a negative correlation between the gender composition of the board of directors and the quality of integrated reporting disclosure. This implies that gender diversity within the board of directors may have exerted a negative influence on the quality of integrated reporting disclosure during this period. However, variables such as the percentage of shareholding held by the top five shareholders, percentage of independent directors, duality role, and number of institutional investors showed no significant impact on the quality of integrated reporting disclosure during the same years, contrary to the initial hypotheses.

In the aftermath of the COVID-19, companies may have turned their attention to crisis management and short-term survival strategies. Female directors, like their male counterparts, may have been involved in decisions that placed more emphasis on immediate financial stability than on long-term sustainability (Liu, W. D., 2020). This shift in focus may lead to resignation from full IR disclosure of the integrated report, negatively affecting the quality of the integrated reporting disclosure.

Robustness Test

To enhance the reliability of the primary research findings in this study, robustness analyses were performed as follows: considering the potential adverse effects of outliers, all continuous variables underwent a 5% minorize tail-trimming process (Luo, 2014), followed by a rerun of the multiple regression analyses. The tail-trimming process helps alleviate the impact of extreme values, provides better control over their influence, and enhances the robustness of the model. The results indicate that, even after this adjustment, the main conclusions of this study remain robust.
Table 8.1 shows the panel regression analysis (robust test) results for the years 2018-2019, and Table 8.2 presents the corresponding statistics for the years 2021-2022.

Table 8.1
Panel Regression Analysis (Robust Test,2018-2019)

	(1)	(2)	(3)	(4)	(5)
	IRD	IRD	IRD	IRD	IRD
PST	-0.004**				
	[0.002]				
PID		-0.372			
		[0.256]			
DR			-0.036		
			[0.061]		
GBD				0.058	
				[0.041]	
NII					-0.000
					[0.001]
SIZE	0.391***	0.320***	0.341***	0.307**	0.341***
	[0.118]	[0.116]	[0.113]	[0.118]	[0.116]
LEV	0.084	0.019	-0.000	-0.040	0.006
	[0.277]	[0.283]	[0.278]	[0.301]	[0.290]
ROA	-0.789	-1.286	-1.331	-1.449*	-1.208
	[0.615]	[0.851]	[0.812]	[0.852]	[0.953]
SOE	-0.275**	-0.218*	-0.256**	-0.345***	-0.240**
	[0.116]	[0.119]	[0.117]	[0.125]	[0.120]
_cons	-1.766	0.140	-0.459	0.317	-0.495
	[2.864]	[2.826]	[2.710]	[2.839]	[2.787]
COMPANY	YES	YES	YES	YES	YES
YEAR	YES	YES	YES	YES	YES
r2	0.933	0.932	0.930	0.931	0.930
N	158.000	158.000	158.000	158.000	158.000

** p < 0.1, ** p < 0.05, *** p < 0.01*

The results of the regression analyses after trimming were consistent with those without trimming from 2018 to 2019. The result after trimming also shows that the percentage of shareholding of the top five shareholders is negatively associated with the quality of integrated reporting disclosure at the 5% level, while the percentage of independent directors, duality role, gender of the board of directors, and number of institutional investors have no effect on the quality of integrated reporting disclosure, contrary to the hypothesis.

Table 8.2
Panel Regression Analysis (Robust Test,2021-2022)

	(1)	(2)	(3)	(4)	(5)
	IRD	IRD	IRD	IRD	IRD
PST	0.007				
	[0.004]				
PID		0.024			
		[0.095]			
DR			-0.082		
			[0.064]		
GBD				-0.040*	
				[0.022]	
NII					0.001
					[0.001]
SIZE	0.073	0.059	0.098	0.083	0.054
	[0.074]	[0.077]	[0.076]	[0.078]	[0.075]
LEV	-0.122	-0.137	-0.224	-0.228	-0.123
	[0.252]	[0.244]	[0.252]	[0.269]	[0.250]
ROA	-0.228	-0.475	-0.374	-0.463	-0.485
	[0.330]	[0.370]	[0.375]	[0.352]	[0.383]
SOE	-0.029	-0.021	-0.020	-0.019	-0.022
	[0.036]	[0.037]	[0.037]	[0.034]	[0.037]
_cons	5.945***	6.602***	5.715***	6.065***	6.675***
	[2.016]	[2.085]	[2.029]	[2.114]	[2.021]
COMPANY	YES	YES	YES	YES	YES
YEAR	YES	YES	YES	YES	YES
r2	0.955	0.946	0.948	0.949	0.947
N	158.000	158.000	158.000	158.000	158.000

* p < 0.1, ** p < 0.05, *** p < 0.01

The results of the robustness tests on the data for the years 2021-2022 are consistent with the findings obtained without trimming. The application of tail-trimming techniques did not lead to significant alterations in the estimated coefficients or standard errors. This finding suggests that the robustness checks did not materially impact the substantive conclusions drawn from the analysis. The results show that gender of board of directors is negatively related to the quality of integrated report disclosure at 10% level, while percentage of shareholding of top 5 shareholders, percentage of independent directors, duality role, and number of institutional investors have no effect on the quality of integrated report disclosure, contrary to the hypothesis.

Conclusions

Based on the results obtained, the study concludes that there are significant associations between specific corporate governance variables and the quality of integrated reporting disclosure among Chinese listed companies both pre and post COVID-19. The findings reveal a noteworthy negative correlation between the percentage of shareholding of the top five shareholders and the quality of integrated reporting disclosure in the years 2018-2019. This suggests that a higher concentration of shareholdings among the top five shareholders is

associated with lower-quality integrated reporting disclosure during this period. Contrary to expectations, the percentage of independent directors, duality role, gender of the board of directors, and the number of institutional investors showed no discernible impact on the quality of integrated reporting disclosure during the same years. This implies that within the context of this study, these specific governance factors did not exhibit a statistically significant relationship with the quality of integrated reporting disclosure.

According to agency theory, the alignment of interests between principals (shareholders) and agents (management) is critical for firm performance and disclosure quality. This finding is supported by the negative correlation between the top five shareholders' shareholdings and the quality of disclosure in consolidated reports, suggesting that a higher shareholding concentration may exacerbate agency conflicts and reduce disclosure quality. In the subsequent years, 2021-2022, the study identifies a negative correlation between the gender of the board of directors and the quality of integrated reporting disclosure. This suggests that the gender of the board of directors may have a negative influence on the quality of integrated reporting disclosure during this period. However, contrary to the initial hypotheses, the percentage of shareholding of the top five shareholders, percentage of independent directors, duality role, and number of institutional investors showed no significant impact on the quality of integrated reporting disclosure during the same years.

On the other hand, the study also provides important guidance for corporate governance practices. First, from to 2018-2019, the study points out that the shareholding ratio of the top five shareholders is negatively related to the disclosure quality of integrated reports. This suggests that disclosure quality may be affected when the power of the company is overly concentrated in the hands of a few large shareholders. Thus, companies can reduce the proportion of shares held by the top five shareholders through methods such as shareholder diversification to improve the disclosure quality of integrated reports. However, for the period 2021-2022, the study shows that the number of female directors on the board of directors is negatively related to the disclosure quality of the integrated report. This finding suggests that gender diversity on the board of directors may have a negative impact on disclosure quality. Therefore, enterprises should pay more attention to the gender composition of board members and improve the disclosure quality of integrated reports by strengthening the training of board members and enhancing mutual learning and communication among board members.

In conclusion, the empirical findings of this study offer valuable insights into practical applications. However, despite shedding light on corporate governance and disclosure, certain limitations need to be acknowledged. The abrupt onset and unprecedented nature of the COVID-19 pandemic presents challenges in comprehensively capturing its impact on corporate governance and disclosure practices. Factors such as varied company responses and industry-specific characteristics may not have been fully accounted for, potentially impacting the breadth of this study. Furthermore, constraints in data availability, particularly concerning specific corporate governance variables, coupled with the subjectivity involved in scoring integrated reporting disclosure, pose additional challenges. Moreover, a relatively modest sample size increases the risk of chance errors and less-precise estimations. These limitations underscore the importance of interpreting these results with caution. To address these challenges, future research endeavors could adopt a multi-tiered data collection

approach, integrating both qualitative and quantitative methodologies to gain a comprehensive understanding of the relationship between corporate governance and disclosure. Expanding the sample size and ensuring diversity among the included companies would bolster external validity and enable more generalizable conclusions. By acknowledging and proactively addressing these limitations, we can further advance our understanding of the intricate dynamics between corporate governance and integrated reporting disclosure.

References

Ashraf, B. N. (2020). Economic impact of government interventions during the COVID-19 pandemic: International evidence from financial markets. *Journal of behavioral and experimental finance*, 27, 100371.

Baicu, C. G., Gârdan, I. P., Gârdan, D. A., & Epuran, G. (2020). The impact of COVID-19 on consumer behavior in retail banking. Evidence from Romania. *Management & Marketing*, 15(s1), 534-556.

Bravo, F., & Alcaide-Ruiz, M. D. (2019). The disclosure of financial forward-looking information: does the financial expertise of female directors make a difference? *Gender in Management: An International Journal*, 34(2), 140-156.

Baltagi, B. H., & Baltagi, B. H. (2008). *Econometric analysis of panel data* (Vol. 4, pp. 135-145). Chichester: Wiley.

Cooray, T., Gunarathne, A. N., & Senaratne, S. (2020). Does corporate governance affect the quality of integrated reporting?. *Sustainability*, 12(10), 4262.

Crane, B. (2020). Revisiting who, when, and why stakeholders matter: Trust and stakeholder connectedness. *Business & Society*, 59(2), 263-286.

Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. *The journal of Finance*, 46(4), 1325-1359.

Daoud, J. I. (2017, December). Multicollinearity and regression analysis. *In Journal of Physics: Conference Series* (Vol. 949, No. 1, p. 012009). IOP Publishing.

Fatmawati, V., & Trisnawati, R. (2022, June). The effect of leverage, profitability, activity, and corporate governance on sustainability reporting disclosure. *In International Conference on Economics and Business Studies* (ICOEBS 2022) (pp. 66-74). Atlantis Press.

Freeman, R. E., Harrison, J. S., & Zyglidopoulos, S. (2018). *Stakeholder theory: Concepts and strategies.* Cambridge University Press.

García-Sánchez, I. M., Raimo, N., Marrone, A., & Vitolla, F. (2020). How does integrated reporting change in light of COVID-19? A revisiting of the content of the integrated reports. *Sustainability*, 12(18), 7605.

García-Sánchez, I. M., & Martínez-Ferrero, J. (2018). How do independent directors behave with respect to sustainability disclosure? *Corporate Social Responsibility and Environmental Management*, 25(4), 609-627.

Garcia-Sanchez, I. M., Martínez-Ferrero, J., & García-Meca, E. (2017). Gender diversity, financial expertise and its effects on accounting quality. *Management Decision*, 55(2), 347-382.

Hafeez, M. M. (2015). *Corporate Governance and Institutional Investment: Rules, Regulations and best practices to monitor corporate affairs and balance the interests of managers and shareholders.* Universal-Publishers.

Huang, Y. W. (2018). The role of independent directors in corporate governance: A study. *Accounting Learning,* (11), 187-188.

International Integrated Reporting Council. (2021). The International Integrated Reporting Framework. Retrieved from https://integratedreporting.ifrs.org/wp-content/uploads/2015/03/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf

Jensen, M. C., & Meckling, W. H. (2019). Theory of the firm: Managerial behavior, agency costs and ownership structure. In *Corporate governance* (pp. 77-132). Gower.

Khatib, S. F., & Nour, A. (2021). The impact of corporate governance on firm performance during the COVID-19 pandemic: Evidence from Malaysia. *Journal of Asian Finance, Economics and Business*, 8(2), 0943-0952.

Kristiawan, N. B. (2024). The Relationship Between Ownership Concentration, Firm Size, and Earnings Quality in Indonesian Companies. *European Journal of Business and Management Research*, 9(1), 31-36.

Li, Y. J. (2020). Research on the Construction of Comprehensive Reporting Index System for Chinese Enterprises. *Southwest University of Finance and Economics Press* (Songbo).

Liu, X., & Gao, C. (2021). Institutional investor clustering, external governance environment, and corporate transparency. *Journal of Zhongnan University of Economics and Law*, 3, 26-35.

Liu, J. H. (2021). Reconsidering Shareholder Primacy. *Political and Legal Forum*, 39(5).

Liu, W. D. (2020). Analysis of the Impact of the COVID-19 Pandemic on Economic Globalization. *Geographical Research*, 39(7).

Luo, J. H. (2014). Why is the Information Disclosure Quality of Listed Companies Uncertain? *(Doctoral dissertation).*

Mrabure, K. O., & Abhulimhen-Iyoha, A. (2020). Corporate governance and protection of stakeholders rights and interests. *Beijing l*. Rev., 11, 292.

Mayhew, K., & Anand, P. (2020). COVID-19 and the UK labour market. *Oxford Review of Economic Policy*, 36(Supplement_1), S215-S224.

Manning, B., Braam, G., & Reimsbach, D. (2019). Corporate governance and sustainable business conduct—Effects of board monitoring effectiveness and stakeholder engagement on corporate sustainability performance and disclosure choices. *Corporate Social Responsibility and Environmental Management*, 26(2), 351-366.

Rivera-Arrubla, Y. A., Zorio-Grima, A., & García-Benau, M. A. (2017). Integrated reports: disclosure level and explanatory factors. Social Responsibility Journal, 13(1), 155-176.

Ratten, V. (2020). Coronavirus (covid-19) and entrepreneurship: changing life and work landscape. *Journal of Small Business & Entrepreneurship*, 32(5), 503-516.

Shen, Jiawei. (2018). Female Executives on Boards, Disclosure Quality and Firm Performance *(Master's thesis, Zhejiang Gongshang University).*

Tian, G. (2019). Empirical Analysis on the Impact of Corporate Governance Structure Diversity on Financial Performance. *Journal of Harbin University of Commerce (Social Science Edition)*, (4), 42-53.

Vitolla, F., Raimo, N., Rubino, M., & Garzoni, A. (2019). How pressure from stakeholders affects integrated reporting quality. *Corporate Social Responsibility and Environmental Management*, 26(6), 1591-1606.

Wang, X., & Wen, X. (2020). Literature Review on Corporate Governance Issues. *Rural Economy and Technology.*

Mayhew, K., & Anand, P. (2020). COVID-19 and the UK labour market. *Oxford Review of Economic Policy,* 36(Supplement_1), S215-S224.

Wang, R., Zhou, S., & Wang, T. (2020). Corporate governance, integrated reporting and the use of credibility-enhancing mechanisms on integrated reports. *European Accounting Review,* 29(4), 631-663.

Yahya, A. S., Khawaja, S., & Chukwuma, J. (2020). The impact of COVID-19 in psychiatry. *The primary care companion for CNS disorders*, 22(2), 26924.

Zhu, X. L. (2021). Research on the Impact of the COVID-19 Pandemic on Corporate Finance and Coping Strategies: A Case Study of Huangshi Group *(Master's thesis)*. Guangxi University.

Zhou, R. (2024). A Literature Review on the Independent Director System. Modern Business, Publisher: *China Railway Construction Corporation Limited*, Beijing 100036.

Zheng, G., Song, L., & Hao, Y. (2015). "Executive Characteristics, Strategic Behavior, and the Quality of Corporate Social Responsibility Disclosure." *Economic Perspectives*, 2, 111-116.

Zhang, Meng. (2011). "An Empirical Study on the Relationship between Industry Characteristics, Internal Governance Mechanisms, and Information Disclosure Quality: Evidence from the Chinese A-Share Market." *Finance and Accounting Communication*, (2), 91-94.