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Article

Analyzing corporate disclosure in Indian banks: assessing compliance, corporate attributes, and performance implications

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Analyzing corporate disclosure in Indian banks: assessing compliance, corporate attributes, and performance implications

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ABSTRACT

Corporate disclosure is critical for many stakeholders to make the best decisions possible. Corporate disclosure practices may vary based on corporate attributes. This study focuses on analyzing the influence of corporate attributes on disclosure. We developed a disclosure index using the unweighted disclosure index method for Indian banks. The disclosure index is developed based on data collected from the annual reports covering 2011-2020. The panel regression model examined corporate attributes' impact on disclosure practices, and the results reveal that corporate attributes significantly influence the disclosure practices of banks. The Disclosure index will help us understand disclosure compliance and the impact of corporate attributes on disclosure. This study reiterates that banks should be transparent and understand the relevance of corporate attributes and information disclosure. It advocates the importance of corporate disclosure, which helps practitioners and policymakers gain the trust of stakeholders, translating into business opportunities and reflecting on the bank's performance.

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1. Introduction

Corporate governance and disclosure have long been a subject of interest for researchers and policymakers regarding corporate governance policies. The financial crisis of 2007–2008 sent shockwaves through global economies, bringing corporate governance practices and regulations into the spotlight, particularly in developed nations (Omoteso & Yusuf, 2017). Further catastrophic failures of firms like Enron, Silicon Valley Bank, Parmalat, etc. emphasized the importance of governance and disclosure practices among policymakers worldwide. This highlights the significance of financial statement analysis in evaluating a firm's performance.

Evaluation of a company's performance is necessary to understand its operational efficiency. Financial and disclosure statements help investors understand the bank's competitiveness and aid stakeholders in investment decision-making (Almaqtari et al., 2022). Events such as the global economic recession (2007–2009) raised global concerns about global governance issues, thus drawing policymakers' attention worldwide.

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These deliberations clarify that banking is a key player in financial market sustainability and economic growth (Chen et al., 2018). Efficient banks fuel economic development, while bank failures can impede a nation's development (Noh et al., 2019). Financially strong banks enhance economic prosperity and encourage investments, stimulating economic growth (Ahmed, 2021). Literature also supports that the soundness of the banking system is intrinsically linked to a nation's economic well-being (Das, 2022). Non-adherence of banks to CG norms will make them susceptible to systemic risk and challenge their growth and survival (Gulati et al., 2020). Therefore, countries worldwide must adopt exemplary corporate governance practices integrating risk management, transparency, and stakeholder involvement (Omoteso & Yusuf, 2017).

Banks with poor corporate governance practices are vulnerable to systemic shocks (Ahmed, 2021). Stakeholders need help obtaining banks' corporate performance information, and policymakers need help making the system transparent (Cheynel & Levine, 2020). The financial disclosure awareness will improve through adequate reforms and increasing pressure from policymakers and other stakeholders for greater accountability (Noh et al., 2019). The level of disclosure required for commercial bank management has begun to gain prominence on an international scale. International organizations have urged banks worldwide to comply with disclosure requirements based on applicable laws Korca et al. (2021). The primary goal of disclosure standards is to ensure appropriate communication, reliability, and material information, which will serve the purpose for which stakeholders rely on annual reports. It instills confidence among the stakeholders and helps them make informed decisions, making banking more trustworthy Suwaidan et al. (2021). We developed a corporate disclosure index to measure transparency and study the abovementioned relationship. This index can guide stakeholders and policymakers in assessing governance standards Gulati et al. (2020). This index simplifies interpretation, enabling benchmarking and policy analysis and helping policymakers evaluate governance reforms' effectiveness (Uzma, 2018). This research focuses on bridging the disclosure gap in India's banking sector. It is also critical to recognize that non-financial information disclosure has improved over time (Korca et al., 2021). However, has the disclosure culture reached an acceptable level? is a pertinent question. Numerous studies (Al-Homaidi et al., 2020; Chen et al., 2018; Korca et al., 2021; Noh et al., 2019; Warrad & Khaddam, 2020) have been conducted on various aspects of financial reporting. However, no such study on disclosure concerning banks in emerging nations exists.

Further, the legal boundaries and cultural diversity make emerging economies different from developed economies regarding corporate governance (Yilmaz et al., 2023). Understanding the various challenges and variations in the country's practices is crucial in understanding the governance practice. This article aims to comprehensively analyze the country's unique aspects and how they can influence the study of disclosure and corporate governance. This will help us understand how well the disclosure practices in Indian banks align with international disclosure practices.

We also understand a significant positive relationship between corporate disclosure and corporate attributes such as profitability, exposure level, and financial performance (Kaur & Vij, 2018). As per (Ahmed, 2021), there is no noteworthy association between the level of disclosure and business characteristics in China's top five banks, the world's largest banks. However, the research doubts whether this would hold for banks in emerging economies like India. As a result, this study will assist us in reconfirming the relationship between corporate disclosure and corporate characteristics. This would also establish a foundation for comprehending and quantifying the disclosure of India's publicly traded banks' financial information, thereby elucidating the underlying corporate reporting and disclosure issues, which require a complete examination.

Additionally, this research establishes a foundation for comprehending the extent of corporate transparency in India, the information supremacy of the banks, and the type of corporate reporting in the Indian banks. Thus, such a study can provide policymakers with further insight and contribute to the literature. We include select listed Indian banks and cover annual reports from 2011–2020. The study examines corporate information disclosure and analyses the connection between banks' disclosure scores and corporate attributes.

Comprehensive studies on corporate disclosure in emerging Asian countries, particularly Indian banks, are lacking. Very few studies have focused on the above points, and no study has conducted the same research from the perspective of Indian Banks to the best of our knowledge. This study, therefore, covers

the research gap in reporting and will aid the Government in ensuring better corporate reporting in the Indian Banking Sector, which is on par with international best reporting practices. The following points explain the rationality of choosing India as the study area:

First, the literature focusing on corporate disclosure in India is scarce (Sharma & Rastogi, 2021). This study will add knowledge on voluntary disclosure in Indian banks and thus help bridge the gap. Second, the global CG practices in developed countries differ from those of emerging countries because of different legal frameworks and cultural settings in various countries Korca et al. (2021). So, the country-based study primarily focuses on emerging economies like India's significance. Third, India has recently introduced various norms and disclosure guidelines for better corporate governance, but weak implementation has led to poor compliance by Indian companies (Uzma, 2018). So, this study will help us understand the level of compliance in the Indian Banking industry.

The remainder of this paper is organized as follows. Section 2 highlights the literature, which gives us a theoretical perspective of the research gap and the significance of the research. The research methodology is discussed in section 3. The results and discussion are presented in section 4, and finally, the conclusion, theoretical and practical implications, and Limitations of the research are discussed in section 5.

2. Literature review

Over the two decades, many scholars have studied the various dimensions of corporate governance and its impact on corporate attributes. The significance of the board of directors in the smooth functioning of business, ensuring the interest of stakeholders, diversity in the board, the responsibility of the board of directors, accountability, transparency, disclosure, and financial and risk reporting have been the research topics of eminent scholars worldwide. Kusi et al. (2018) reported that weak corporate governance negatively influences the stakeholder's value. Further, the recent financial crisis of 2008–2009 was at least partly the outcome of poor corporate governance (Oino, 2019). Therefore, in the present information-based world, stakeholders are very keen to know the corporate governance practices of companies (Zimik & Suresh, 2021). Hence, corporations must adhere to and disclose good governance practices to the various stakeholders. In a study, Akuffo (2020) advocates that events like the financial crisis of 2008–2009 governance practices, including financial disclosures, attract attention from stakeholders. Transparency and the disclosure of financial and non-financial reports, including risk exposure, are considered essential elements of corporate governance (Henry, 2008). These financial reports are important because they provide crucial and reliable information to stakeholders. These reports enable informed decisions by understanding the company's performance, present status, and prospects (Adegboyegun et al., 2020).

Countries worldwide have corporate disclosure regulations to protect the stakeholders' interests. At the same time, it is necessary to examine how the corporations respond to it, as the reporting practices of these corporations are of absolute importance (Goel, 2018). Corporate disclosure of accounting information is a standard practice in developed nations like the USA and UK, but only in some developing countries. Corporate Governance reforms and disclosure practices vary from country to country because of varied political, social, and economic factors. A study favored that governance and disclosure practices vary because of cultural traits, degree of substitution, company-level governance practices (Filatotchev et al., 2013), market forces (Lattemann, 2014), political, economic and legal environment differences among the countries (Jacoby et al., 2019).

On the contrary, Wang et al. (2008) found no correlation between voluntary disclosure and lower debt capital costs. Additionally, (Lo & Wong, 2011) examine the significant impact of ownership structure, earnings management, board composition, and incentive structures on accounting disclosure decisions. Hence, it is necessary to examine corporate governance, particularly disclosure practices in emerging economies like India

As a highly regulated industry, the Corporate disclosure practices of banks are unique (Adams & Mehran, 2003). Further, Gillan et al. (2003) advocated that the corporate governance structure and disclosure practices differ systematically across industries due to internal and external factors. Hence, studying industry-specific corporate governance and disclosure practices is essential. Banks are an economic

fuel for any country, and stability and good governance are supreme factors in gaining and maintaining the trust of the various stakeholders. Further failure of a financial institution may lead to uncertainty and affect the financial system. Therefore, a particular focus on the bank's corporate governance and disclosure practices should be required. Failure in Indian ICICI Banks has again reiterated the importance of disclosure practices of banks. Hence, the policymakers and regulators are focused more on corporate governance and disclosure practices of banks. Many banks worldwide started to disclose corporate governance practices to attract the attention of various stakeholders. A study by Cheung et al. (2010) evaluated 100 businesses in China using OECD principles and discovered that Chinese firms reward investors for accounting disclosure transparency, implying that favorable capital market outcomes influence Chinese firms' accounting disclosure decisions.

India is focusing on a more transparent and accountable financial system, and thus, CG reforms (Refer to Table 1) play a significant role in achieving this objective. India has several legislations that promote good governance practices in Indian companies, especially in Banks (Uzma, 2018). Even before these corporate governance reforms, many banks in India and around the world have practiced the disclosure of both financial and non-financial reports voluntarily. Numerous studies (Al-Homaidi et al., 2020; Almaqtari et al., 2022; Lo & Wong, 2011) examined the impact of corporate attributes on voluntary disclosure practices. Further, some studies (Almaqtari et al., 2022; Kusi et al., 2018; Loang, 2022; Warrad & Khaddam, 2020) investigated the qualitative aspects of CG in banking companies and found that the corporate attributes have a strong influence on governance disclosure.

Notably, most studies focused on the impact of CG and disclosure on corporate attributes, but very few studies have concentrated on how corporate attributes influence corporate disclosure. Some previous studies advocate that the extensive, financial, non-financial information and risk exposure disclosure

Table 1. Banking governance reforms in india.

Regulation/Acts	Implemented by	Period of Implementation	Purpose	Literature
Section 35 A of the Banking Regulation Act 1949.	Reserve Bank of India (RBI)	1949	It gives RBI the power to regulate banks.	(Das, 2022; Saldanha & Aranha, 2021)
SEBI Act 1992 and Clause 49, 2006.	Securities and Exchange Board of India (SEBI)	1992 and 2006	Guidelines on Corporate Governance.	(Singla & Singh, 2018; Uzma, 2018)
Code of Corporate Governance 1998, Clause 49.	Confederation of Indian Industries (CII)	1998	Improve governance practices and disclosures in all the listed companies.	(Srivastava et al., 2018; Uzma, 2018)
Corporate Governance Act 1999	Kumar Mangalam Birla Committee	1999	Introduced the principal need to build a governance landscape in India	(Singla & Singh, 2018; Uzma, 2018)
Corporate Audit and Governance 2002	Naresh Chandra Committee Report	2002	Recommendation on Corporate Audit and Governance	(Srivastava et al., 2018)
Committee on Corporate Governance by SEBI, 2003	Narayana Murthy Committee	2003	Evaluate and improve the existing corporate governance practices.	(Srivastava et al., 2018)
Dr Jamshed J. Irani Report (2005).	Ministry of Corporate Affairs, Government of India.	2005	Recommendations on addressing the concerns of stakeholders.	(Hanrahan & Hargovan, 2020; Srivastava et al., 2018)
The Companies Bill, 2009	Ministry of Corporate Affairs, Government of India.	2009	Enables greater shareholder involvement, stringent norms of CG, and additionally, pronounced corporate social responsibility (CSR) initiatives for companies	(Uzma, 2018, Hanrahan & Hargovan, 2020)
The Takeover Code, 2011.	Securities and Exchange Board of India (SEBI)	2011	Increase the measure of transparency and governance	(Naik et al., 2014; Uzma, 2018)
The Companies Act (2013)	Ministry of Company Affairs (MCA)	2013	Regulates Institutions/ firms in India.	(Bag & Omrane, 2022; Naik et al., 2014)
Establishment of the Bank Boards Bureau	Government of India.	2016	To improve governance in public sector banks.	(Uzma, 2018; Naik et al., 2014)

practices are an additional cost to the corporates and irrelevant to corporate attributes performance (Li et al., 2017; Smith et al., 2007). However, Waddock and Graves (1997) argue that a relationship exists between corporate attributes and firms' disclosure practices. Furthermore, recently Suwaidan et al. (2021) examined how corporate characteristics influence mandatory corporate disclosure and found that corporate attributes such as corporate size, profitability, ownership structure, and company age affiliations significantly influence the disclosure practices of multinational corporations. Furthermore, Uyar and Kilic (2012) examined the degree to which accounting information is disclosed and the drivers that influence disclosure in listed Turkish corporations. The study discovered that attributes such as listing age, profitability, independent directors, leverage, and ownership structure have a negligible effect, and firm size significantly affects disclosure practices. These results complement the findings of Ahmed (2021), who studied the relationship between corporate attributes and accounting disclosure practices of Chinese banks.

Similarly, Bhaumik et al. (2019) mentioned in their study that corporate governance and disclosure practices in developing economies affect profitability and leverage. Similarly, Wang (2016) investigated the relationship between corporate attributes and voluntary disclosure practices in Bangladesh banks and identified that disclosure is positively related to performance measured by ROE. Another piece of evidence is shown in the study of Al-Homaidi et al. (2020), in which they examined Islamic banks in Yemen and explained the association between corporate governance and CAR.

Based on the above discussions, there are no conclusive results on the impact of corporate attributes on disclosure practices. The literature on this domain provides mixed results, as the literature is ambiguous and contradictory. It is critical to recognize that banks' disclosure policies and governance difficulties are distinct from those of non-banking enterprises. This is primarily due to knowledge asymmetry, moral hazard problems, cultural diversity, legal structure, and the opaque nature of banking. Nevertheless, the literature on this domain established that the relationship between corporate attributes and disclosure practices among banks, particularly in the emerging economy context, has been primarily ignored by researchers (Bozec & Bozec, 2012; Gulati et al., 2020). Therefore, considering this significant research gap, this study aims to investigate the impact of corporate attributes on accounting disclosure within the context of Indian banks. Investors look for pertinent and reliable accounting data to make rational decisions. A composite index of Corporate Disclosure compresses the range of financial and non-financial indicators into a single numerical score, making interpretation easier. It is a valuable tool for benchmarking banks and enabling effective policy analysis.

3. Research methodology

3.1. Research question

India is one of the fastest-developing Asian nations. The Government introduced the Companies Bill in 2009, and the Stock Exchange Board of India introduced the Takeover Code in 2011 to improve banks' and listed companies' transparency and governance, respectively. These legal environments made it mandatory for banks to disclose accounting information to the stakeholders. However, the findings from the literature could be more specific and specific. As mentioned in the literature section, significant studies in this domain concentrated on developed and non-banking companies, but only a few concentrated on developing countries like India. So, in this study, we focus on listed Indian banks whose annual reports for the study period are available for 2011-2020 is available. Studies indicate an association between corporate characteristics and the degree of compulsory disclosure (Suwaidan et al., 2021). The study's primary focus is understanding corporate attributes' impact on disclosure scores. So, the primary research question is:

Do corporate attributes have a significant impact on disclosure scores?

3.2. Sampling

In the year 2009, the Indian Government introduced the Companies Bill 2009, which emphasized more on CG. Hence, all the Indian companies, including banking companies, were forced to follow the

Table 2. Details of Banks.

Sr.No	Bank	Category/Sector	Markt Capitalisation (Rs.)
S-1	HDFC Bank	Private	8,11,033.41
S-2	ICICI Bank	Private	5,42,442.58
S-3	State Bank of India	Public	4,67,158.79
S-4	Kotak Mahendra Bank	Private	3,77,053.73
S-5	Axis Bank	Private	2,34,596.58
S-6	Indus Ind Bank	Private	69,989.60
S-7	Bank of Baroda	Public	53,420.17
S-8	IDBI Bank	Public	52,149.15
S-9	Punjab National Bank	Public	44,980.00
S-10	Canara Bank	Public	43,339.57
S-11	Indian Overseas Bank	Public	40,073.11
S-12	Yes Bank	Private	33,448.30
S-13	Union Bank of India	Public	32,157.49
S-14	Bank of India	Public	22,672.20
S-15	Indian Bank	Public	18,694.07

corporate governance policy. From this year, corporate governance practices were expected to improve. Hence, the study period is from 2010-2020. The study units are selected based on two criteria: firstly, banks should be listed throughout the study period, and secondly, annual reports should be available covering the study period. Table 2 presents the sample banks. Fortunately, the sample covers banks of high and low market capitalization from private and public sectors.

Since the study is related to the significance of corporate attributes on governance practices, market capitalization plays a pivotal role. Since the sample covers the highest and lowest market capitalization banks, the study's findings are expected to be helpful to policymakers, Stock exchange regulators, and other stakeholders.

3.3. Variables

The response variable for the study is corporate disclosure, and the explanatory variable is Corporate attributes. Based on the Literature review, we have selected significant corporate attribute variables relevant to the banking industry. Table 3 presents the details of the selected variables:

3.4. Disclosure index development

The banking regulator (RBI) has issued directions on disclosure parameters to ensure financial stability and stakeholders' interest. The disclosure index was used to elicit information about banks' disclosure in annual reports to ascertain the disclosure score of banks. Table 4 shows the disclosure parameter used in the construction of the index.

3.4.1. Indexing method

Numerous methods used in index creation studies, including UDI, PCA analysis, and MCDM methods like Entropy Weight Method, AHP, etc., are used to develop disclosure index. Among the methods available,

Table 3. Variables of the study.

Variable	Symbol	Data Specification	Reference
Dependent Variable			
Disclosure Score	DS	Calculated based on information in annual reports.	
Independent Variables			
Return on Asset	ROA	$\frac{PAT}{Total\ Assets}$	(Kaur & Vij, 2018)
Return on equity	ROE	$\frac{PAT}{Total\ Assets\ Shareholder's\ equity}$	(Warrad & Khaddam, 2020)
Capital Adequacy Ratio	CAR	$\frac{Tier\ 1\ capital + Tier\ 2\ capital}{Risk\ Weighted\ Assets}$	(Al-Homaidi et al., 2020)
Loan to Deposit Ratio	LTD	$\frac{Total\ Loan}{Total\ Deposit}$	(Ahmed, 2021)
Dividend Pay-out Ratio	DPR	$\frac{Dividend\ Per\ Share}{Earnings\ Per\ Share}$	(Kanojia & Bhatia, 2022)
Debt Equity Ratio	DER	$\frac{Long-Term\ Debt}{Equity\ Shareholder's\ Fund}$	(Kaur & Vij, 2018)
Cost to Income Ratio	CIR	$\frac{Operating\ Cost}{Operating\ Revenue}$	(Ahmed, 2021)
Control Variables			
Bank Size	Size	$\ln \sum Total\ Assets$	(Al-Homaidi et al., 2020)
Bank Age	Age	No. of years since inception	(Al-Homaidi et al., 2020)

Table 4. Disclosure parameters.

No	Parameter	Classification
1.1	CAR (%)	Capital
1.2	CRAR - Tier I Capital (%)	
1.3	CRAR - Tier II Capital (%)	
1.4	Percentage of the shareholding of the Government of India in nationalized banks	
1.5	Amount raised by the issue of IPDI	Investments
1.6	Amount raised by the issue of Upper Tier II instruments*	
2.1	Value of Investments	
2.2	Movement of provisions held towards depreciation on investments	
3.1	Securities sold under repos	Repo Transactions
3.2	Securities purchased under reverse repos	
4.1	Issuer composition of Non-SLR investments	Non-SLR Investment Portfolio
4.2	Non-performing non-SLR investments	
5.1	Forward Rate Agreement/ Interest Rate Swap	Derivatives
5.2	Exchange Traded Interest Rate Derivatives	
5.3	Disclosures on risk exposure in derivatives	
6.1	Non-Performing Assets	
6.2	Particulars of Accounts Restructured	Asset Quality
6.3	Details of financial assets sold to Securitisation/Reconstruction Company for Asset Reconstruction	
6.4	Details of non-performing financial assets purchased/sold	
6.5	Provisions on Standard Assets	
7.1	Interest Income as a percentage of Working Funds \$	Business Ratios
7.2	Non-interest income as a percentage of Working Funds	
7.3	Operating Profit as a Percentage of Working Funds \$	
7.4	Return on Assets	
7.5	Business (Deposits plus advances) per employee #(Rs.in crore)	Asset Liability Management
7.6	Profit per employee (Rs. in crore)	
8	Asset Liability Management	
	Maturity pattern of certain items of assets and liabilities	
9.1	Exposure to the Real Estate Sector	Exposures
9.2	Exposure to Capital Market	
9.3	Risk Category-wise Country Exposure	
9.4	Details of Single Borrower Limit (SGL)/ Group Borrower Limit (GBL) exceeded by the bank.	
9.5	Unsecured Advances	Miscellaneous
10.1	Amount of Provisions made for Income-tax during the year-Provision for Income Tax	
10.2	Disclosure of Penalties imposed by RBI	
11.1	Accounting Standard 5 – Net Profit or Loss for the period, prior period items, and changes in accounting policies.	
11.2	Accounting Standard 9 – Revenue Recognition	Additional Disclosure Requirements as per RBI
11.3	Accounting Standard 15 – Employee Benefits	
11.4	Accounting Standard 17 – Segment Reporting	
11.5	Accounting Standard 18 – Related Party Disclosures	
11.6	Accounting Standard 21 – Consolidated Financial Statements (CFS)	
11.7	Accounting Standard 22 – Accounting for Taxes on Income	
11.8	Accounting Standard 23 – Accounting for Investments in Associates in Consolidated Financial Statements	
11.9	Accounting Standard 24 – Discontinuing Operations	

(continued)

Table 4. Continued.

No	Parameter	Classification
11.10	Accounting Standard 25 – Interim Financial Reporting	Additional Disclosures
11.11	Other Accounting Standards	
12.1	Provisions and Contingencies	
12.2	Floating Provisions	
12.3	Draw Down from Reserves	Disclosure of complaints
13.1	Customer Complaints	
13.2	Awards passed by the Banking Ombudsman	
13.3	Disclosure of Letters of Comfort (LoCs) issued by banks	

an unweighted disclosure index (UDI) approach is commonly used (Cheung et al., 2010; Coy & Dixon, 2004; Kamal Hassan, 2012; Zhang et al., 2020) in the accounting information disclosure studies. Hence, in this study, we have adopted the same.

As per the UDI approach, disclosure of accounting attributes is considered a dichotomous variable. Under this method, we assign the score to each parameter; a score of '1' is assigned for disclosed items and '0' for those not disclosed.

This study reflects disclosure and nondisclosure of accounting information in a bank's annual reports. The total disclosure score of a bank under UDI is calculated as follows:

$$DS = \sum_{i=1}^n d_i/n \quad (1)$$

Where $d = 1$ if the item DS is disclosed, 0 if the item DS is not disclosed, and $n =$ number of items to be disclosed. In UDI, the unique advantage is that it allows a measurement independent of a particular user group's perception.

3.5. Model specification

We have employed panel data analysis to analyze the relationship between the disclosure and bank attributes. Panel data analysis helps control endogeneity and heterogeneity issues by working with a shorter time series and more observations (Baltagi, 2005). Before applying panel data analysis, we examined the attributes of the data using descriptive statistics. To examine the variance among the variables, we used variance tests (ANOVA). To eliminate the effect of outliers, we have winsorized the data. The result of panel data analysis can be affected by confounding effects, which may distort the relationship between the study variables. Hence, we used the interaction of ROA and ROE to avoid the above issue. To achieve the research objective, we have developed the following regression model:

$$DS = \alpha + \beta_1 ROA * ROE_{it} + \beta_3 CAR_{it} + \beta_4 LTD_{it} + \beta_5 DPR_{it} + \beta_6 DER_{it} + \beta_7 CIR_{it} + \sum_{i=1}^n \beta_i Control\ Variables_{it} + \varepsilon_{it} \quad (2)$$

Panel unit root test for variables is conducted to avoid the issue of spurious regression. To check the multi-collinearity problem, we use a correlation matrix and Variance Inflation Factor (VIF). We found that ROA and ROE had a correlation coefficient of $0.927 > 0.8$, which indicates multi-collinearity. The same is confirmed by VIF, in which ROE had a value of $13 > 10$. To handle the multi-collinearity problem, we have multiplied ROA and ROE for our model. Again, a multi-collinearity test is employed and confirms the absence of multi-collinearity.

Hausman's test is used to analyze the endogeneity. The P-value(F) is $1.13866e-11 < 0.05$; thus, the null hypothesis is rejected, which indicates the consistency of the fixed effect model. This model determines the individual effects of unobserved, independent variables as constant over time.

3.6.1. Robustness test

We also employ Two Stage Least Square(2SLS) Regression as a Robustness Test. Though the controls and fixed effects care for the potential cofounds the possibility of unobservable time-varying firm

characteristics still needs to be addressed. This might lead to spurious results on the impact of corporate attributes on corporate disclosure. So, we overcome this problem by running a 2SLS Regression.

4. Result and discussion

The descriptive statistics of disclosure score (DS) and various measures of financial attributes of the banks reveal that the SBI bank, HDFC Bank, and ICICI bank have the highest mean score of DS with the lowest standard deviation, and it indicates that large banks are more transparent and consistent in accounting information disclosure. IDBI and Yes Bank secured the lowest mean score of DS, indicating that small banks are less transparent. IDBI has the lowest SD, indicating an inconsistency in disclosing.

Banks with higher mean returns have better disclosure scores than those with lesser returns in our sample. In our sample, Kotak Mahendra Bank and HDFC Bank have the highest mean value for returns (ROA, ROE) during the study period and has higher disclosure score. On the other hand, IDBI bank, having the lowest return, has lesser disclosure.

From the analysis, it can be inferred that (Refer to Table 5) banks with good corporate attributes like CAR, LTD, DPR, DER, and CIR have consistent and transparent disclosure practices than the banks performing poorly in said corporate attributes. Sometimes, the banks registered poor performance in specific corporate attributes and secured higher disclosure scores. For example, in our sample, SBI banks registered the lowest LTD but were more transparent and consistent in disclosure practices. Hence, it is apparent that banks with good performance corporate attributes are following good disclosing practices and others are not.

Therefore, it is necessary to examine the performance in corporate attributes among the sample banks. In general, the performance of any organization on its corporate attributes will be varied and well documented (Soundariya et al., 2021; Suresh & Krishnan, 2020), but still, it is good to examine the performance of banks. The analysis of the variance of corporate attributes results is presented in Table 6.

4.2. Analysis of variance of disclosure score and corporate attributes

ANOVA test is conducted to check the variance in corporate attributes. Results (Refer to Table 6) imply that CAR, LTD, and DER show no significant variation among sample Indian banks. This is opposite to the case of Chinese banks (Ahmed, 2021). Furthermore, it indicates that Return (ROA, ROE), DPR, and CIR show substantial variation among the sample banks. Notably, these variables are interrelated and reflect the banks' operating efficiency. The sample includes banks of varied sizes and varied performance. Thus, it is clear that depending on the variation in returns, other related variables, such as DPR and CIR, vary, thus explaining the variation. This confirms the study results of Ahmed (2021), (Al-Homaidi et al. (2020).

Table 5. Descriptive statistics of the variables.

Corp Attribute	Banks	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10	S-11	S-12	S-13	S-14	S-15
DS	N	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Mean	0.91	0.91	0.92	0.86	0.84	0.89	0.89	0.71	0.90	0.87	0.81	0.81	0.84	0.84	0.86
ROA	SD	0.01	0.02	0.02	0.02	0.02	0.04	0.03	0.18	0.03	0.01	0.02	0.10	0.05	0.02	0.06
	Mean	1.69	1.26	0.46	1.71	0.98	1.61	0.24	-1.08	0.15	0.10	-0.73	0.54	0.09	-0.23	0.55
ROE	SD	0.07	0.43	0.34	0.59	0.63	0.27	0.57	1.96	1.01	0.54	1.31	2.19	0.62	0.72	0.39
	Mean	16.62	10.10	7.96	13.86	10.48	15.24	4.11	-12.56	-1.03	1.62	-16.51	10.05	0.43	2.09	9.11
CAR	SD	1.58	3.44	5.83	1.31	6.69	3.23	9.62	28.04	16.77	10.68	20.85	32.74	14.24	13.72	4.88
	Mean	16.30	17.79	12.98	18.26	16.10	14.80	12.92	12.44	12.42	12.22	9.45	16.16	11.69	11.77	13.52
LTD	SD	1.51	1.06	0.59	2.13	1.51	1.47	0.88	1.68	1.68	1.14	2.07	2.93	0.69	1.43	0.86
	Mean	84.41	95.19	44.70	107.78	87.34	85.57	80.17	80.69	73.13	69.83	67.46	69.83	76.08	74.63	72.05
DPR	SD	2.92	9.08	37.89	24.79	6.56	18.49	4.78	4.46	5.01	1.74	11.58	25.39	5.51	18.43	4.73
	Mean	18.95	18.94	11.69	1.88	11.25	11.54	11.29	7.20	6.37	7.79	0.00	4.99	11.31	7.03	12.20
DER	SD	6.05	11.62	8.19	1.32	10.21	4.15	12.13	9.76	7.04	9.24	0.00	4.89	10.56	9.41	8.91
	Mean	0.92	7.20	15.68	3.86	9.5	7.49	15.32	12.02	15.25	16.62	16.36	6.29	17.36	17.27	13.99
CIR	SD	0.20	0.47	1.18	2.19	0.89	4.29	0.86	3.26	1.75	1.09	1.16	4.21	1.46	1.52	0.60
	Mean	39.21	35.96	44.51	49.40	41.14	49.64	38.06	49.44	45.26	33.33	47.30	6.29	46.29	48.18	33.75
	SD	1.15	5.53	8.09	4.55	7.56	13.39	9.47	28.77	4.78	10.13	19.33	4.21	5.48	4.93	6.06

Table 6. Analysis of variance of Disclosure score and Corporate Attributes.

Variables		Sum of squares	df	Mean square	F	Sig	Decision
ROA	Between Groups	39.56	9	4.39	3.27	0.001	Significant variation
	Within Groups	188.19	140	1.34			
	Total	227.77	149				
ROE	Between Groups	11646.60	9	1294.07	5.81	0.000	Significant variation
	Within Groups	31180.04	140	222.72			
	Total	42826.64	149				
CAR	Between Groups	80.56	9	8.95	1.105	0.363	No significant variation
	Within Groups	1134.25	140	8.10			
	Total	1214.81	149				
LTD	Between Groups	3020.167	9	335.57	0.79	0.62	No significant variation
	Within Groups	58970.63	140	421.22			
	Total	61990.79	149				
DPR	Between Groups	4514.80	9	501.76	7.95	0.00	Significant variation
	Within Groups	8835.46	140	63.11			
	Total	13351.27	149				
DER	Between Groups	42.033	9	4.67	0.142	0.998	No significant variation
	Within Groups	4601.14	140	32.87			
	Total	4643.17	149				
CIR	Between Groups	6162.39	9	684.71	4.801	0.000	Significant variation
	Within Groups	19966.20	140	142.62			
	Total	26128.59	149				

Source. Authors' calculation.

Table 7. Analysis of variance of the variables of the banks under study.

	Sum of Squares	df	Mean Squares	F(a)(b)	Sig.(a)(b)
Regression	706.020	7	100.86	7.677	0.000 ^{b***}
Residuals	1865.48	142	13.137		
Total	2571.50	149			

a. Dependent Variable: DS.

b. Predictors: (Constant), CIR, DER, DP, LTD, ROE, CAR, ROA.

***p 0.05; **p 0.01; ***p 0.001

Table 8. Analysis of coefficients of the dependent and independent variables.

Predictors ^a	Unstandardized Coefficients		Standardized Coefficients		Sig ^{***}	95.0% Confidence Interval for B	
	B	SE	B	t		Lower Bound	Upper Bound
(Constant)	41.087	3.697		11.115	0.000	33.780	48.395
ROA	1.250	0.560	0.372	2.231	0.027	0.143	2.357
ROE	0.001	0.040	0.005	0.028	0.978	−0.078	0.080
CAR	0.290	0.163	0.199	1.785	0.076	−0.031	0.611
LTD	−0.019	0.016	−0.093	−1.153	0.251	−0.051	0.014
DPR	0.030	0.037	0.069	0.817	0.415	−0.043	0.103
DER	0.175	0.082	0.235	2.118	0.036	0.012	0.337
CITI	−0.049	0.027	−0.156	−1.827	0.070	−0.102	0.004

^aPredictors: (Constant), CIR, DER, DP, LTD, ROE, CAR, ROA.

***p 0.05; **p 0.01; ***p 0.001

From the above discussion, we understand how different corporate attributes vary among Indian banks, and these results align with the results of the previous study. These findings can have important implications for understanding the financial landscape of Indian banks and can influence future research or policy decisions.

Additionally, Table 7 indicates that the various corporate attribute measurements differ significantly (F-ratio: 7.667, p -value-0.000) from the disclosure of data in the sample banks' annual reports over the study period. Thus, the corporate attributes considered in this study influence transparency in the banking sector.

The coefficients between the DS and all corporate attributes are shown in Table 8. From the discussion above, ROE, ROA, CAR, LTD, DPR, DER, and CIR were all determined to be insignificant at their respective significant levels, indicating no significant relationship between DS and the various corporate attributes of the sample banks. Variables such as return on assets and debt-to-equity ratio, on the other hand, have a significant relationship with disclosure scores. The results are consistent with the results of Ahmed (2021). We understand that specific corporate attributes have a more definite influence on disclosure.

Table 9. Pooled ordinary least square:.

Dependent variable: DS	Model 1: Without interaction	Model 2: With bank size interaction	Model 3: With bank age interaction	Model 4: With interaction
ROA*ROE	−0.0303*** (<0.0001)	0.0022** (0.0395)	−0.0255*** (0.0003)	0.0027*** (0.0084)
CAR	0.3540*** (0.0023)	0.0430** (0.0116)	0.4846*** (<0.0001)	0.0692*** (0.0001)
LTD	−0.0228 (0.1469)	−0.00465 (0.1412)	−0.0038 (0.8174)	−0.0015 (0.5264)
DPR	0.0754** (0.0245)	0.0129*** (0.0084)	0.0729** (0.0248)	0.0131*** (0.0051)
CIR	−0.0458* (0.0734)	0.0093** (0.0135)	−0.0430* (0.0830)	0.0092** (0.0101)
DER	−0.0071 (0.1381)	0.0002 (0.7046)	−0.0052 (0.1188)	0.0004 (0.3533)
Bank Size		36.5907*** (<0.0001)		36.2270*** (<0.0001)
Bank Age			0.0224*** (0.0018)	0.0039*** (0.0002)
Bank Dummy	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes
N	150	150	150	150
R ²	0.7757	0.7851	0.7189	0.7864

p-values are in parenthesis. *, **, *** indicate significant at 10%, 5% and 1% level, respectively.

Table 10. Fixed effect regression.

Dependent variable: DS	Model 5 Without interaction	Model 6 With bank size interaction	Model 7 With bank age interaction	Model 8 With interaction
ROA*ROE	−0.0201*** (0.0020)	0.0028*** (0.0040)	−0.0183*** (0.0048)	0.0028*** (0.0037)
CAR	0.2279* (0.0983)	0.0386* (0.0724)	0.2910* (0.0552)	0.0575*** (0.0059)
LTD	−0.0167728 (0.2896)	−0.0038* (0.0968)	−0.0102 (0.5291)	−0.0025* (0.0725)
DPR	0.0370918 (0.2651)	0.0033 (0.4900)	0.0385 (0.2473)	0.0062 (0.1845)
CIR	−0.0709884*** (0.0039)	0.0059* (0.0543)	−0.0705*** (0.0040)	0.0069* (0.0517)
DER	−0.00354773 (0.3574)	0.0006 (0.2593)	−0.0021 (0.5857)	0.0007 (0.1975)
Bank Size		36.2759*** (<0.0001)		36.2181*** (<0.0001)
Bank Age			0.0207* (0.0855)	0.0036** (0.0166)
Bank Dummy	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes
N	150	150	150	150
R ²	0.7077	0.7841	0.7655	0.7843

p-values are in parenthesis. *, **, *** indicate significant at 10%, 5% and 1% level, respectively.

4.3. Regression model (POLS and FER)

The researcher has conducted a Simple Linear regression analysis to test whether there is any relationship between the dependent and independent variables.

Table 9 illustrates the results of pooled ordinary least regression. The regression model helps establish the relationship between DS and corporate attributes of the sample considered. Model 1 analyses the influence of corporate attributes on accounting disclosure without the interaction of control variables. The outcome suggests that ROA, ROE, CAR, DPR, and CIR significantly influence DS. The R² value of 0.7757 indicates that the explanatory variables influence 77% of the model outcomes. Model 2 analyses the influence of corporate attributes on accounting disclosure with the interaction of Bank size (control variable). The outcome suggests that ROA, ROE, CAR, DPR, and CIR significantly influence DS. The R² value of 0.7851 indicates that the explanatory variables influence 78% of the model outcomes. Model 3 analyses the influence of corporate attributes on accounting disclosure with the interaction of Bank age (control variable). The outcome suggests that ROA, ROE, CAR, DPR, and CIR significantly influence DS. The R² value of 0.7189 indicates that the explanatory variables influence 72% of the model outcomes.

Model 4 analyses the influence of corporate attributes on accounting disclosure with the interaction of Bank size and Bank age (control variable). The outcome suggests that ROA, ROE, CAR, DPR, and CIR significantly influence the Disclosure score (DS). The R^2 value of 0.7864 indicates that the explanatory variables influence 78% of the model outcomes. Above, OLS models indicate that several corporate attributes (ROA, CAR, DPR, and CIR) significantly influence the Disclosure Score (DS). These findings align with a previous study (Al-Homaidi et al., 2020).

Panel unit root test indicates that there is no unit root. Our study used the Wald test for heteroskedasticity and the Jarque-Beta test to test the normality of residuals. The insignificant value of both tests indicates that the fixed effect regression model is tenable. Table 10 illustrates the results of pooled ordinary least regression. The regression model helps establish the relationship between DS and corporate attributes of the sample considered. Model 5 analyses the influence of corporate attributes on accounting disclosure without the interaction of control variables. The outcome suggests that ROA, ROE, CAR, and CIR significantly influence the Disclosure score (DS). The R^2 value of 0.7077 indicates that the explanatory variables influence 70% of the model outcomes. Model 6 analyses the influence of corporate attributes on accounting disclosure with the interaction of Bank size (control variable). The outcome suggests that ROA, ROE, CAR, LTD, and CIR significantly influence the Disclosure score (DS). The R^2 value of 0.7841 indicates that the explanatory variables influence 78% of the model outcomes. Model 7 analyses the influence of corporate attributes on accounting disclosure with the interaction of Bank age (control variable). The outcome suggests that ROA, ROE, CAR, and CIR significantly influence DS. The R^2 value of 0.7655 indicates that the explanatory variables influence 76% of the model outcomes. Model 8 analyses the influence of corporate attributes on accounting disclosure with the interaction of Bank size and Bank age (control variable). The outcome suggests that ROA, ROE, CAR, LTD, and CIR significantly influence the Disclosure score (DS). The R^2 value of 0.7843 indicates that the explanatory variables influence 78% of the model outcomes. The study outcomes align with the claims of (Kaur & Vij, 2018 and Al-Homaidi et al., 2020).

The fixed-effect regression models provide valuable insights into the relationship between corporate attributes and accounting disclosure. ROA, ROE, CAR, LTD, and CIR influence the Disclosure Score (DS). These findings are consistent with previous studies (Al-Homaidi et al., 2020; Kaur & Vij, 2018) and contribute to a deeper understanding of the dynamics between corporate attributes and disclosure practices of banks. The results of Model 6 and 7 indicate how the influence of relevant corporate attributes on disclosure vary depending on the bank size and age.

Table 11. 2SLS regression.

Dependent variable-DS	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
constant	48.3794*** (1.12e-114)	32.3235*** (2.46e-09)	46.6936*** (3.46e-059)	29.0963*** (9.29e-01)	70.3923*** (3.63e-013)	77.8656*** (6.95e-018)
ROA*ROE	-0.1877*** (6.94e-05)					
CAR		0.8751** (0.0185)				
LTD			-0.0282 (0.2123)			
DPR				1.6223*** (6.03e-05)		
DER					-0.1432*** (0.0027)	
CIR						-0.7829*** (0.0002)
Bank Size	0.2977*** (0.0005)	0.2751** (0.0174)	0.0282 (0.0003)	0.0223*** (0.0005)	0.0232*** (0.0002)	0.0229*** (0.0004)
Bank Age	0.1868*** (0.0004)	0.1641*** (0.0006)	0.1291 (0.0003)	0.1234*** (0.0003)	0.1243*** (0.0002)	0.1829** (0.0003)
N	150	150	150	150	150	150
F-Statistics	11.2803	34.5771	13.2669	12.2692	4.03196	5.2969
Prob.(F-Statistics)	0.000042	0.017212	0.2103	0.000036	0.00228	0.000159

DS is regressed against ROA*ROE in Model 1, CAR in Model 2, LTD in Model 3, DPR in Model 4, DER in Model 5, and CIR in Model 6 while controlling for age and size. DS is a measure of corporate disclosure score. P-values are in parenthesis. *, **, *** indicates significance at 10%, 5%, 1%.

4.4. Robustness test

We employ 2 stage least square regression as a robustness check.

The study indicates that corporate attributes considerably impact a bank's disclosure practices. Models 1 to 6 in Table 11 indicate the influence of individual corporate attributes on corporate disclosure when age and size are the instrumental variables. The corporate attributes considered in this study are ROA, ROE, CAR, LTD, DPR, DER, and CIR. Study results indicate that ROA, ROE, CAR, DPR, DER, and CIR significantly influence corporate disclosure when we control the Age and Size of banks. Thus, we understand that improved performance attributes lead to better corporate disclosure compliance. Control variables such as Age and Size of banks positively and significantly impact corporate disclosure. This indicates that when banks grow, they tend to comply with the corporate disclosure norms. Thus, policymakers can develop a disclosure framework by understanding the critical corporate attributes that influence disclosure practices. Policymakers can improve banks' transparency by implementing tailored regulatory requirements and proper risk management practices.

5. Conclusion

This research presents a comprehensive picture of corporate disclosure in banks operating in India. Our rigorous analysis presents valuable insights related to the compliance, corporate attributes, and performance implications of disclosure practices. Cultural dynamics and CG exert a sizable influence on Asia's emerging economies. Corporate Governance Act 2013 brings India's CG practices up to global standards. Nonetheless, standards did not improve across industries, companies, unlisted firms, small publicly traded firms, and large publicly traded firms. This study examines the extent to which CG information is disclosed in annual reports and its relationship to various corporate performance attributes of Indian banks. The descriptive statistics in Table 3 indicate that SBI bank has the highest mean value of DS and IDBI bank has the lowest mean value, but IDBI and HDFC have the lowest and highest SD values, respectively. The HDFC bank had the lowest disclosure norms throughout the study period, while the IDFC bank had the highest variance. Indian banks have the highest disclosure score, while IDBI banks have the lowest. The observations indicate that information disclosure in annual reports has fluctuated, but the percentage of information disclosed was satisfactory.

Our study emphasizes the vital link between disclosure and a bank's performance. Banks that are not transparent become prone to systemic risks, threatening their growth and stability. The analysis of the variance test reveals that there is no significant difference in the DS of sample banks for the considered period. The Pooled Ordinary Least Square results indicate no significant association between disclosure scores and loan-to-deposit and debt-equity ratios. However, there is a significant relationship between disclosure scores and variables such as ROA, ROE, CAR, DPR, and CIR among the samples.

The Fixed Effect Method also reveals a significant relationship between DS and the various corporate attributes measured for the sample banks. Most study outcomes differ from the study results (Ahmed, 2021). Thus demonstrating that governance, disclosure standards, and compliance vary by country (Filatotchev et al., 2013). Additionally, studies demonstrate the critical nature of transparent corporate disclosure and shareholders' reliance on such information for decision-making. A developing economy is no exception. Our study establishes a relationship between the variables examined and the disclosure score, demonstrating the critical nature of fair disclosure. Users of such information in Indian banks will place a premium on it, negatively affecting its performance. We believe that our research will significantly contribute to the existing literature on financial accounting and will also aid in understanding financial disclosure trends in Indian banks.

This study establishes a framework for policymakers to rank banks according to their compliance with corporate disclosure standards regarding managerial implications. The study will educate policymakers about the consequences of noncompliance and thus assist them in developing more effective policies. This study sheds light on the connection between disclosure compliance and performance. This comprehensive guidance assists banks in appreciating the value of disclosure and the associated benefits, encouraging them to comply with the standards. Thus, this study becomes critical for India's

policymakers and bank management by emphasizing the need for region-specific approaches in improving disclosure practices.

5.1. Theoretical implications

Our study has various theoretical implications. To begin with, our study creates an improved understanding of corporate disclosure and its compliance trend in Indian banks. The disclosure index created in this study is specific to the Indian banking sector and thus contributes to the bank disclosure measurement theory. The findings act as a benchmark for banks to evaluate the disclosure practice in Indian banks and create scope to benchmark Indian banks with international best practices. The novelty of this study is that we have analyzed the association between disclosure and corporate attributes in banks of an emerging Indian economy. The study results will encourage the bank management to be transparent, as they understand the relevance of corporate attributes and information disclosure. The study provides a scope for understanding disclosure practices in developing economies like India and helps researchers and policymakers understand the disclosure landscape in emerging economies. Our study introduces a multidimensional model that integrates a variety of corporate attributes such as ROA, ROE, CAR, LTD, DPR, DER, and CIR. This approach improves the theoretical framework by considering a broader spectrum of factors influencing disclosure.

5.2. Practical implications

The study results provide numerous insights to the stakeholders. Firstly, customers can choose the banking services based on the disclosure scores of the banks. Better disclosure scores indicate superior corporate governance and transparency. Secondly, investors can reconfirm the reliability of the bank's performance metrics based on the disclosure scores. Better disclosure scores indicate a lesser chance of window dressing. Thirdly, our study provides insights into the importance of disclosure compliance and thus encourages the bank's management to work toward better compliance and transparency. Finally, policymakers should make adequate efforts to educate the banks about the importance and benefits of corporate disclosure. Policymakers should also review the efficiency of existing reforms and take corrective actions if required.

Investors can leverage this insight to more comprehensively assess the banks they invest in. Banks with strong corporate attributes positively impacting disclosure practices may be more reliable and potentially more attractive investment options. This research becomes a foundation for policymakers in understanding corporate disclosure practices in Indian banks, which can serve as a foundation for developing governance regulations to ensure adherence. This will help Indian banks align their reporting practices with the world's best practices. In addition, Regulators can complement the banks with better disclosure practices with rewards and ratings, which will encourage the banks to comply.

5.3. Limitations and future recommendations

This study has a few limitations, which creates scope for further research. First, this study is based on the post-reform period, and thus, we have selected only 15 out of 34 listed banks whose annual reports are available for the specified period. Further researchers can further extend this study by analyzing more Indian banks. A comparison of a different banking system based on international CG regulations can also be considered. Second, this study is based only on Indian banks, and future researchers could consider a comparative study of different banks from multiple countries. Future researchers can also consider analyzing the relationship between DS and other corporate attributes and CG attributes.

The findings can serve as a valuable baseline for future research in financial inclusion, banking practices, and corporate disclosure in the Indian context. Researchers can build upon this data to investigate evolving trends and dynamics.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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