Board Characteristics and Risk Disclosure Quality by Integrated Reporters : Evidence from Indian Banks

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Abstract

This study aimed to analyze the influence of board characteristics on the quality of risk disclosures in integrated annual reports of banks in India. Integrated reports support organizations in controlling risks, identifying opportunities, connecting risks with business policies, developing business models, and contributing to the value creation process. In February 2017, the Securities and Exchange Board of India (SEBI) recommended the adoption of an integrated reporting (IR) framework by the top 500 companies in India on a voluntary basis from 2017–18. Considering the relevance of integrated reporting and its underlying benefits to various stakeholders, banks have primarily adopted the IR framework and started publishing their annual reports in line with the IR principles. Using content analysis on the sample of 30 banks listed on the National Stock Exchange (NSE) in India, the efficacy of risk disclosures, the outlook orientation (past, present, and future), approaches to risk (positive, neutral, and negative) were investigated, and the influence of attributes of board of directors on the quality of risk disclosure was examined. On examining 4,183 sentences concerning risk disclosures by Indian banks, the results showed a positive relationship between board size, diversity, independence, meetings, and education background in accounting/finance with risk disclosure quality (RDQ). Also, it was found that integrated reporters tended to disclose more risks and suggested ways to mitigate those risks compared to non-adopters.

Keywords : **risk disclosure, agency theory, integrated reporting, corporate governance, disclosure quality**

JEL Classification Codes : G21, G28, G32, M48

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Risk disclosures in annual reports are considered a cornerstone of accounting and investment practice (Abraham & Cox, 2007). Risk disclosures are more significant for increasing precision and enhancing the market discipline (Abraham & Shrives, 2014). Previous studies have revealed that investors believe risk disclosures to be crucial for their portfolio investment decisions (Solomon et al., 2011). Prior empirical studies have generally focused on risk disclosures, finding a regular trend of mostly disclosing qualitative and backward-

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looking data (Linsley & Shrives, 2006). The quality of risk disclosures in annual reports in meeting the information needs of various stakeholders is questionable at times (Steyn, 2014). By focusing solely on financial risk, traditional financial reports neglected other forms of risk that threaten the long-term viability of organizations and society. On the other hand, this broader risk disclosure is of interest to several stakeholders and is one of the objectives of the integrated reporting framework (Matta & Mohapatra, 2021). Integrated reporting (IR) overcomes the flaws of traditional reports by integrating financial and non-financial information. Integrated reports align the information needs of various stakeholders and reduce uncertainties (Pavlopoulos et al., 2019). The disclosure of risk and opportunities in integrated reports is crucial for a firm's growth (Kakkar & Kamboj, 2011).

Integrated reports support businesses in controlling risks, identifying opportunities, connecting risks with business policies, developing business models, and also contributing to the value creation process (Pavlopoulos et al., 2019). The integrated reporting framework (IRF) highlighted that integrated thinking takes into account the connectivity and interdependencies between the range of factors that affect an organization's ability to create value over time, including how the organization tailors its business model and strategy to respond to its external environment and the risks and opportunities it faces (IIRC, 2013).

Integrated reporting pulls together data on a company's strategy, governance, performance, risks, and opportunities to reflect the economic, social, and environmental environment in which it works. Corporate governance is one of the most critical factors in financial reporting practices (Rajpurohit & Rijwani, 2020). Integrated reporting links a company's non-financial and financial data. It is the obligation of the firm to safeguard the interests of its stakeholders. Stakeholders' demands are dynamic and change over time, therefore, companies must adapt how they convey information. Stakeholders used to be primarily concerned with financial accounts, but today, they are becoming more concerned with non-financial organizational factors such as social and environmental repercussions and governance systems. Annual financial reports' relevance and dependability, and an organization's capability to operate sustainably, are being questioned by stakeholders. As a result, the 'integrated reporting' paradigm has received ample attention from professionals and researchers.

Financial crises have become common among banks and financial institutions these days, highlighting the inadequacy of disclosures of risks such as liquidity risk, credit risk, and strategic risk. Jorion (2002) suggested that financial crises could be avoided if risks were disclosed in a timely and effective manner. Moreover, the board structure has been seen to play a vital role in identifying and managing risks and improving the quality of risk disclosures (Al-Hadi et al., 2019). Therefore, this research aims to analyze the influence of board attributes on the quality of risk disclosures by banks listed with a recognized stock exchange in India. Using content analysis, this study further investigates the outlook orientation based on past, present, and future outlooks and the approach to risk: positive, negative, or neutral (Beretta & Bozzolan, 2004 ; Manes - Rossi et al., 2017). Further, this study examines the attributes of the board of directors on the quality of risk disclosures by banks in India.

Review of Literature

The supervision, control, and monitoring of risk is a vital component of internal control to detect, determine, and analyze many types of risks that a business must confront, given the rising intricacies of the market and conducting business (Lamboglia et al., 2019). Non-financial risk management is also beneficial in achieving business and social accountability objectives (Wong, 2014). Instead, risk management tends to reduce risks along with the adverse consequences of indefensible activities (Welford, 2000).

Integrated reports may be viewed as a better way of interpreting how perceived risks are linked to the company's strategy and its outlook (Enslin et al., 2015). The IIRC has codified innovative practices by recommending a risk-managing approach that may assist value generation by standardizing the IRF's principles and essential aspects (IIRC, 2013). IR should provide users with a detailed explanation of how an organization manages financial and non-financial risks to generate sustainable returns (Van Zijl et al., 2017). As a result, by recognizing the linkages between financial, social, and environmental dimensions of company performance, IR encourages governance and management players to take a forward-looking and strategic approach to recognize various risks and opportunities (Van Zijl et al., 2017).

In general, risk disclosure is described as information regarding an opportunity, potential risk, harm, danger, or threat that has and/or might influence the organization in the near future, according to prior research (Linsley & Shrives, 2006). Prior risk management disclosure research has concentrated chiefly on Canada, the United States, Germany, and United Kingdom, as these are the only nations where risk disclosure is mandatorily required (Linsley & Shrives, 2006). Prior risk disclosure literature has been created in three separate approaches, each of which investigated the effectiveness of risk disclosure and risk management (Cole & Jones, 2004), the level of risk disclosure (Lajili & Zéghal, 2005), variation in the risk disclosure (Hariharan et al., 2017), and the drivers of risk disclosure (Linsley & Shrives, 2006), respectively.

Adherence to good governance practices is essential to maximize stakeholders' wealth and safeguard their interests (Singh et al., 2019). The initial viewpoint was centered on the significance that shareholders place on risk disclosure and its management (Linsmeier et al., 2002). Based on the previous studies on the efficacy of risk reporting, the majority of research studies focused on United States firms and looked for correlations between risk disclosures and stock market indices (Elshandidy et al., 2013). The returns were found to be sensitive to the oil and gas share price fluctuations and were positively linked with market risk disclosure. While studies in the United States and Egypt showed that risk disclosure might impact capital market participation, there is little evidence in the United Kingdom (Elshandidy et al., 2013). A proprietary cost theory was established in response to this current state of affairs (Marshall & Weetman, 2007). This notion is founded on the idea that executives are hesitant to provide information that they regard as confidential. As a result, managers must choose between secrecy and openness. If managers prefer to be reticent and secretive, the controlling system could be seen as ineffective or non-existent, and if managers are overly open, outsiders may be able to use potentially harmful information for their own gain (Cormier et al., 2005).

The next phase of the research may be looked at the level of risk disclosure. The financial risk was found to be the most stated category of risk in all of these investigations that employed content analysis (Beretta & Bozzolan, 2004). In a study of 300 Canadian firms, the financial risks were the most publicly reported, and it was observed that the risk description was low and mainly qualitative (Lajili & Zéghal, 2005). According to Beretta and Bozzolan (2004), based on a study of 85 Italian publicly traded companies, Italian firms were likely to report past and current risks more than future ones. As a result, prior research in this field has found that risk disclosure is primarily qualitative, focusing on past and present hazards rather than future threats. There has been no research to date that has looked into the level of non-financial risk disclosure by integrated reports. This is a research gap in academia (Anderson & Anderson, 2009).

The last section of the research looked into the drivers that impact risk disclosure. Beretta and Bozzolan (2004) looked at the business industry and its size ; Linsley and Shrives (2006) looked at the firm size and risk, and Abraham and Cox (2007) looked at governance and ownership components like the number of non-executive or independent directors in connection to risk disclosures. External ownership, gender, profitability, and size were all shown to be the predictors of voluntary risk disclosure, according to Al - Maghzom et al. (2016). The relationship between integrated report and risk disclosure was studied by Manes - Rossi et al. (2017), who compared public as well as private risk disclosure in business risk administration, while Elghaffar et al. (2019) looked at the factors that influenced risk disclosure in the banks in Egypt.

Based on extant literature, this paper attempts to address this gap by examining the intensity of non-financial risk disclosures by integrated reporters and ascertaining the influence of board characteristics on such non-financial risk disclosures. Indeed, this research paper provides the first assessment of non-financial risk disclosure by integrated reporters by banks in India to assess the level of disclosure, the efficacy of the non-financial risk managing system, and the board's influence over such disclosures.

Theoretical Framework

The linkage between corporate governance procedures and transparency is well explained by the agency theory (Vitolla et al., 2020). Agency theory is used to examine the link between board and disclosure (Fama & Jensen, 1983; Jensen & Meckling, 1976). According to the agency theory, because investors (principals) and executives (agents) have divergent objectives, the executives may not always operate in the greatest interests of investors, resulting in agency difficulties, including unsatisfactory investment decisions and excessive expenditure. The prevalence of asymmetric information between agent and principal is linked to the ability of executives to act against the interests of investors (Barako et al., 2006). Therefore, disclosure is a technique that can help reduce the informational asymmetry that exists between stockholders and managers (Watson et al., 2002).

Agency theory argues that the managers of a company act on behalf of the investors. Agency theory acts as a tool to mitigate the information asymmetry between the managers and shareholders by aligning the interest of shareholders with those of managers and consequently reducing the agency cost (Barako et al., 2006). Greater disclosure by the board reduces moral hazard and harmonizes the interest of managers and shareholders (Beretta & Bozzolan, 2004). In this light, appropriate control is necessary for disclosure to fulfill its purpose of minimizing information asymmetry.

In fact, the board, that is entrusted with monitoring the activity of the administration and management, especially in areas of disclosure, is a major control mechanism (Donnelly & Mulcahy, 2008). As a result, the board serves as a control and monitoring mechanism, analyzing and assessing the management's performance and assuring shareholders of profit maximization (Donnelly & Mulcahy, 2008). The board's increased transparency indicates a better capacity to oversee risk. The board can set itself apart from others who may be regarded to be less competent risk managers (Elshandidy et al., 2013). The board of directors may utilize risk disclosure to communicate their company's strong performance as well as to improve its legitimacy (Oliveira et al., 2011).

Supervision by the board is a way to encourage the spread of quality disclosure, which reduces information asymmetry as well as the consequent agency issues. On the other hand, the board of directors must contain features to successfully carry out the monitoring function. In this regard, the analysis of the board's characteristics on risk disclosure quality by integrated reporters in the banking sector in India is the main aim of this study.

Description of Variables and Hypotheses Development

Prior studies on disclosure investigated the drivers of risk disclosure, involving firm characteristics like profitability, leverage, market capitalization, and corporate governance qualities such as composition, size, and diversity of the board. However, the level of risk disclosures by integrated reporters and the composition of the board of directors in the company remain under investigation.

Board Size

The board size is a critical factor that influences its efficacy. The agency theory claims that big boards are favorable to improved monitoring, while Jensen (1993) argued that a larger board size might lead towards less efficient collaboration and decision-making. As a result, firms with larger boards of directors are more inclined to voluntarily disclose more information despite many studies having linked larger boards to more risk disclosure (Elshandidy & Neri, 2015).

↳ **H1 :** RDQ (risk disclosure quality) is positively associated with board size.

Board Meetings

It is the responsibility of the directors to attend the board meetings of the company. Meetings are crucial for a board's effectiveness (Vafeas, 1999). Financial reporting is more likely to be enforced by active boards that meet regularly. The meetings often decrease the likelihood of fraud (Chen et al., 2006). This supports agency theory, and numerous studies found that it had a good influence on increased transparency (Allegrini & Greco, 2013).

↳ **H2 :** RDQ is positively associated with the number of board meetings.

Board Independence

The efficacy of corporate governance in reducing agency issues is highly dependent on the board's structure (Frias-Aceituno et al., 2013; Sarpal, 2015). Since non-executive directors are not actively involved in business activities, a board with a more number of non-executive directors may monitor the management more effectively (De Villiers et al., 2011; Tonk, 2012). Independent directors may aid in reducing information asymmetry and improving reporting quality. Non-executive directors are generally professionals who do not hold a managerial position or have any business or ownership links with the firm. They have a professional and ethical reputation to uphold. Prior study has found a favorable link between them and voluntary risk disclosure (Abraham & Cox, 2007; Oliveira et al., 2011).

↳ **H3 :** RDQ is positively associated with board independence.

Board Diversity

The difference in the qualities of the members of a board can be characterized as board diversity (Robinson & Dechant, 1997). The diversities in the board members influence the policymaking procedure in a company. According to the agency theory, gender has no bearing on the board's effectiveness. Recent research, however, has shown conflicting results when it comes to gender variations in behavior and skills. Women directors have a beneficial impact on board choices (Nielsen & Huse, 2010). On the other hand, some research cast doubt on women's capacity to provide benefit to the board of directors (Bianco et al., 2011). However, the evidence concerning risk disclosure is limited.

↳ **H4 :** RDQ is positively associated with board diversity.

Board Education

The diversity in educational background of the board of directors is seen to ensure greater monitoring and efficacy in the context of the agency theory. Williams and O'Reilly III (1998) considered educational level and practical experience and how diversity among the board may help with transparency. Evidence on the link between educational level of the board and efficacy is scarce. Previous studies investigated that educational background in accounting and finance influenced the decision-making process of the board of directors (Jackson, 1992).

↳ **H5 :** RDQ is positively associated with board education.

Research Methodology

Sample and Sources of Data

In February 2017, the Securities and Exchange Board of India (SEBI) recommended the adoption of integrated reporting (IR) framework by the top 500 companies in India on a voluntary basis from 2017–18. Considering the relevance of integrated reporting and its underlying benefits to various stakeholders, banks have primarily adopted the IR framework and started publishing their annual reports in line with the IR principles. Therefore, this study is based on annual reports of 30 banks listed on the National Stock Exchange (NSE) in India that have published integrated reports in 2020. The integrated reports of banks were downloaded from their respective websites and were further investigated to ascertain the risk disclosure quality of these reports.

Content Analysis for Risk Disclosure Score

In the earlier studies, content analysis was used to determine the level or quantity of risk disclosure (Hackston & Milne, 1996; Raar, 2002). Following prior collected literature on this subject, sentences as the recording unit are employed (Kajüter, 2006; Oliveira et al., 2011). The use of the total sentences as a 'text encoding unit' is seen to be more accurate than using other units of analysis because words are meaningless without the context provided by sentences (Milne & Adler, 1999).

A content analysis method is employed to generate the 'risk disclosure score' (RDS) (Kravet & Muslu, 2013). The annual reports of banks for the financial year 2019–20 are downloaded from their respective websites and converted into text format as per the research fitment. The data cleansing looks at and counts every statement that contains the term 'risk,' focusing on non-financial information. As with prior research, risk disclosure is assessed at three levels: 'categories of risk,' 'outlook orientation,' and 'approaches to risk' (Manes et al., 2017). The word 'risk' is counted once in a sentence when the 'text encoding unit' is the phrase, not the word.

On the other hand, if more than one category of risk is mentioned in the same line, then that is also taken into account. The QSR NUD*IST software was employed to identify the number of sentences which included at least one 'risk' keyword. In order to measure the risk disclosure quality (RDQ) by banks in India, the risk disclosure score (RDS) is ascertained. The RDS is obtained by considering the number of sentences comprising of at least one 'risk' keyword.

The business risk model created by Arthur Andersen is used in this study to analyze the various kinds of business risks. Further, it is examined whether the risk disclosure has been linked to the 'present,' 'past,' or 'future' era in order to determine the outlook orientation. In the absence of a reference, the 'tense' employed in the phrase is considered to assess the outlook orientation. Further, to assess the risk management strategy, the phrases including information about risk mitigation and preventive strategies are considered 'positive.' On the other hand, any phrases including negative information or no response to minimize the existing dangers are considered 'negative.' Finally, any general phrases that lacked specific information on how to confront and/or minimize risk are considered 'neutral.'

Research Model

Further, the influence of the board's characteristics on risk disclosure quality was measured. For this, the independent variables are board size (BSIZE), which is measured by the number of directors on a board; board meetings (BMEET), which are computed by the number of meetings of the board during the financial year 2019–20; board independence (BIND), which is computed by the number of independent or non-executive directors on board size (De Andres et al., 2005); board diversity (BDIV), which is calculated as the number of woman directors on board size and board education (BEDU), which is calculated as the number of directors with an educational background in the field of accounting or finance.

$$RDS = \beta_0 + \beta_1\, BSIZE + \beta_2\, BMEET + \beta_3\, BIND + \beta_4\, BDIV + \beta_5\, BEDU + \beta_6\, RMCOM + \beta_7\, ROE + \beta_8\, FSIZE + \beta_9\, AGE + \beta_{10}\, FLEV + e \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

where,

RDS = risk disclosure score,

β_0 = intercept,

BSIZE = number of directors on board,

BMEET = board meetings,

BIND = board independence,

BDIV = board diversity,

BEDU = board education,

FSIZE = firm size,

ROE = return on equity,

AGE = average age of board of directors,

FLEV = firm leverage,

RMCOM = number of directors in the risk and management committee, and

e = standard error.

In order to test the hypotheses, ordinary least square (OLS) regression with robust standard errors is employed. Also, some control variables are added to improve the regression model. Firstly, the variable composition of risk and management committee (RMCOM) is included. For this, the number of directors in the risk and management committee is considered. In the model, ROE is also integrated. Further, firm size (FSIZE), calculated as the natural logarithm of total assets, is incorporated as a control variable. The variable age (AGE) is the average age of the number of board of directors which is computed by the total of the age of the board divided by the board size. Finally, the variable leverage (FLEV) is included as a control variable, computed as the debts over the total assets of a firm.

Analysis and Results

Content Analysis of Annual Reports

The content analysis yields intriguing insights concerning the degree and spread of non-financial risks. Table 1 and Table 2 describe the fundamentals of outlook orientation and approaches to risk. Table 3 shows that 4,183 sentences concerning risk disclosures by banks with an average of 36 phrases for each enterprise were studied. The banking sector has mainly disclosed financial, compliance, and strategic risks (29%, 16%, and 12%, respectively). Though public sector banks of India are more prone to risks like fraud and scams (Mohapatra & Jha, 2018), but this study validates banks' efforts to combat corruption and affirms the banking sector's key requirements and rules. Banks' focus on strategic risk could be described by their need to safeguard their brand and prevent reputational harm.

Table 1. *Outlook Orientation*

Outlook Orientation	Example of Sentences
Present	"This is the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events."
Past	"It was followed by process understanding, mapping of applications to the same, and understanding financial risks posed by people-process and technology."
Future	"Your bank will be generally required to recognize either a 12-month or lifetime ECL, depending on whether there has been a significant increase in credit risk since initial recognition."

Table 2. *Approaches to Risk*

Approaches to Risk	Example of Sentences
Positive	"Your bank has always adhered to the highest standards of compliance and has put in place appropriate controls and risk measurement and risk management tools to ensure a robust compliance and governance structure."
Neutral	"It also continues to engage closely with farmers to mitigate risks and protect portfolio quality."
Negative	"The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control."

Table 3. *Results of Content Analysis*

Risks 2020	Number of Sentences	Minimum	Maximum	Average	Percentage
Total Risk Disclosures	4,183	12	172	35.28	100
Compliance	683	0	28	8.16	16
Financial	1,189	0	49	16.54	29
Strategic	517	0	20	9.65	12
Operational	326	0	16	6.23	8
Environmental, Health, and Safety	490	0	18	5.36	11
General	978	0	41	10.23	24
Past	543	0	21	2.19	13
Present	3,514	12	68	32.35	84
Future	126	0	6	1.5	3
Positive	1,632	0	33	11.82	39
Neutral	2,007	1	43	17.66	48
Negative	544	0	19	6.85	13

General risks (978 sentences) account for around 24% of the phrases examined. These findings are encouraging because they demonstrate the application of a risk management approach that includes not only the reduction of typical financial risks but also general risks. Further, the results discovered unfavorable findings in terms of risk outlook orientation: 84% of the information is directed to the present, 13% of the information is related to the past,

Table 4. *Descriptive Analysis*

Variables	Mean	Standard Deviation	Minimum	Maximum
Risk Disclosure Score	13.87	6.48	5.30	36.20
Board Size	9	2.72	8	15
Board Meetings	7.8	2.14	5	11
Board Independence	62.50	18.68	30	100
Board Diversity	2.3	1.27	2	4
Board Education	50.85	14.95	32	68
Control Variables				
Firm Size	15.81	2.63	11.89	43.38
ROE	11.38	41	–34	155
Age	57	3.81	42	65
Leverage	76	12	71	98
Composition of risk and management committee	3	1.72	0	100

with just 3% is geared to the future. This conclusion is consistent with the annual report's perspective and aim (past and present), yet it falls short of stakeholder expectations (future information). The IR framework supports this future viewpoint. In terms of risk management, the firms in the sample generally provided neutral and positive information. The negative data is at a very low level (544, that is, 13%). This finding might be seen as a strong desire on the part of the managers to keep this unfavorable information hidden in order to avoid potential reputational harm.

Descriptive Analysis

The descriptive analysis results in Table 4 present a varied disparity in the risk disclosure score (RDS) (from 5.30% to 36.20%) in total in terms of board size (from 8 to 15 with a mean of 9), in terms of the presence of women as board diversity (from 2 to 4), in terms of the educational background in the field of accounting as well as finance (from 32% to 68%), and in terms of the board meetings (from 5 to 11). The average percentage of non-executive directors on board is 62.50%. There are also a good number of control variables. The mean of the number of directors in the risk and management committee is 3. The mean ROE is 11.38%. Also, there is a high level of leverage with 76%.

Findings

To test the hypotheses, linear multiple regression models are employed. The regression results between board attributes and risk disclosure quality are presented in Table 5. The adjusted R^2 is 0.684. H1 is accepted based on the results and findings. Board size (BSIZE) shows a positive and significant association with risk disclosure quality as $p = 0.031$. The result indicates that boards with larger sizes positively influence risk disclosure quality by banks. The hypothesis H2 is accepted based on the findings. Board meetings (BMEET) show a positive and significant association with risk disclosure quality at $p = 0.030$. This shows that the higher number of meetings of the board favors the risk disclosure quality by banks.

Table 5. *Regression Analysis*

Variables	Coefficient	Standard Error	*p* - value
Board Size	0.283	0.129	0.031**
Board Meetings	0.105	0.048	0.030**
Board Independence	0.050	0.027	0.060*
Board Diversity	0.104	0.047	0.024**
Board Education	0.111	0.056	0.050**
Control Variables			
Firm Size	0.561	0.229	0.016**
ROE	0.017	0.031	0.575
Age	–0.011	0.013	0.417
Leverage	–0.035	0.067	0.603
Composition of Risk Management Committee	–0.051	0.042	0.237
Adjusted *R* Square (R^2)	0.684		
F	13.760***		

Note. *n* = 30 ; *significant at the 10% level, **significant at the 5% level, ***significant at the 1% level.

Board independence (BIND) presents a positive and significant relationship with risk disclosure quality (RDQ) at $p = 0.060$. This shows that the presence of a greater number of independent directors favors the risk disclosure quality by banks. The hypothesis H3 is accepted based on the research findings.

Additionally, board diversity (BDIV) is also positively and significantly associated with risk disclosure quality (RDQ) at $p = 0.024$. This supports hypothesis H4 and highlights that the higher number of women encourages a rise in the quality of risk disclosures by banks. Finally, the results support hypothesis H5, showing a positive association between the educational level of the board in the field of accounting or finance and risk disclosure quality at $p = 0.050$.

In terms of control factors, the results reveal that the firm's size has a positive and significant influence on risk disclosure quality ($p = 0.016$). Additionally, there is no impact of the number of directors in the risk and management committee on the risk disclosure quality.

Conclusion

This study is conducted to evaluate the board characteristics on risk disclosure quality by Indian banks. Using agency theory, this study examines the influence and impact of the size of the board, independence, their diversity, and education of directors in the field of accounting or finance as determining factors of risk disclosure quality. The content analysis is employed on the annual report of 30 banks listed on the National Stock Exchange (NSE) in India. On examining 4,183 sentences concerning risk disclosures by banks in India, the results confirm that the size of the board, the presence of non-executive directors and women on board size, board meetings, and the educational level of board of members in the field of accounting or finance have a positive impact on the risk disclosure quality. This demonstrates that board characteristics are the key drivers in promoting transparency between managers and shareholders by improving risk disclosure quality and further helps in establishing a good corporate governance mechanism.

This study enriches the existing literature and additionally widens the scope of the agency theory. Also, this study widens the field of determining factors of risk disclosure quality by banks. In this regard, this study has identified that the information related to risk is mainly oriented to the past or present (97%) and rarely to the future (3%). Furthermore, the information is mainly neutral or positive (87%) and negative (13%). This might be due to the voluntary disclosure of information, only neutral or positive, and neglecting the negative information, which could be dangerous for a firm's reputation.

Further, the results of this study reveal that the banks which have adopted the integrated reporting framework in accordance with IIRC tend to disclose more risk and ways to mitigate those risks as compared to non-adopters. The quality of risk disclosures is better in the integrated reports, which is in line with the principles of the integrated reporting framework. The findings of this study additionally support McNally et al. (2017), who highlighted that risk identification and its effective management is a vital part of integrated reporting.

To sum up, this study highlights risk disclosure practices adopted by companies, specifically the banking sector in India, and further investigates the board's role in improving such risk disclosures. The increasing role of a board positively and significantly impacts improving the quality of risk disclosures in integrated reports of banks.

Managerial Implications

This study has significant implications for banks and policymakers. Banks should appoint more board members to better supervise, monitor, and support the development of high-quality of risk disclosure in their reports. This would reduce the information asymmetry as well as the agency costs. Additionally, the banks should have a larger number of non-executive directors or independent directors and woman directors on their boards. The independent or non-executive directors have no business relationship with the company and are free to exercise control effectively, supporting the development of high-quality risk disclosures. Also, the presence of more woman directors within the board supports the publication of high-quality risk disclosures. In order to carry out the monitoring function effectively and support the development of high-quality risk disclosures in reports, more board meetings are required. Furthermore, the results are vital for policymakers. The existence of independent directors and women directors should be promoted. As a result, this would promote high-quality risk disclosures in the reports of banks.

Limitations of the Study and Scope for Further Research

This study investigates a sample size of 30 banks based on one-year reports. The scope for further research in performing the longitudinal study over a period can be done, and the trend of quality of reporting risk disclosures could be analyzed. Additionally, the impact of other corporate governance mechanisms such as audit quality and corporate social responsibility on the quality of risk disclosures could be studied.

Authors' Contribution

Rahul Matta and Dr. Khyati Kochhar conceptualized the idea and developed the initial outline of this research work. Dr. Amiya Kumar Mohapatra and Rahul Matta further validated and translated it into a detailed framework. Rahul Matta and Debasis Mohanty conducted the review of literature to find the research gaps. Rahul Matta and Dr. Amiya Kumar Mohapatra collected and analyzed the data by adopting appropriate research techniques. Dr. Khyati Kochhar and Dr. Amiya Kumar Mohapatra systematically analyzed the data using the content analysis approach along with necessary interpretation. Rahul Matta and Dr. Amiya Kumar Mohapatra prepared the manuscript in consultation with their co-authors. Finally, Debasis Mohanty and Khyati Kochhar concluded the research outcomes along with necessary copyediting and formatting.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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References

Abraham, S., & Cox, P. (2007). Analyzing the determinants of narrative risk information in UKFTSE 100 annual reports. *The British Accounting Review, 39*(3), 227– 248. https://doi.org/10.1016/j.bar.2007.06.002

Abraham, S., & Shrives, P. J. (2014). Improving the relevance of risk factor disclosure in corporate annual reports. *The British Accounting Review, 46*(1), 91–107. https://doi.org/10.1016/j.bar.2013.10.002

Allegrini, M., & Greco, G. (2013). Corporate boards, audit committees and voluntary disclosure: Evidence from Italian listed companies. *Journal of Management & Governance, 17*(1),187–216. https://doi.org/10.1007/s10997-011-9168-3

Al-Maghzom, A., Hussainey, K., & Aly, D. (2016). Corporate governance and risk disclosure: Evidence from Saudi Arabia. *Corporate Ownership and Control, 13*(2), 145–166. https://doi.org/10.22495/cocv13i2p14

Al-Hadi, A., Al-Yahyaee, K. H., Hussain, S. M., & Taylor, G. (2019). Market risk disclosures and corporate governance structure: Evidence from GCC financial firms. *The Quarterly Review of Economics and Finance, 73,* 136–150. https://doi.org/10.1016/j.qref.2017.11.008

Anderson, D. R., & Anderson, K. E. (2009). Sustainability risk management. *Risk Management and Insurance Review, 12*(1), 25–38. https://doi.org/10.1111/j.1540-6296.2009.01152.x

Barako, D. G., Hancock, P., & Izan, H. Y. (2006). Factors influencing voluntary corporate disclosure by Kenyan companies. *Corporate Governance: An International Review, 14*(2), 107–125. https://doi.org/10.1111/j.1467-8683.2006.00491.x

Beretta, S., & Bozzolan, S. (2004). A framework for the analysis of firm risk communication. *The International Journal of Accounting, 39*(3), 265–288. https://doi.org/10.1016/j.intacc.2004.06.006

Bianco, M., Ciavarella, A., & Signoretti, R. (2011). *Women on boards in Italy*. Available at SSRN. https://dx.doi.org/10.2139/ssrn.1945855

Chen, G., Firth, M., Gao, D. N., & Rui, O. M. (2006). Ownership structure, corporate governance, and fraud: Evidence from China. *Journal of Corporate Finance, 12*(3), 424–448. https://doi.org/10.1016/j.jcorpfin.2005.09.002

Cole, C. J., & Jones, C. L. (2004). The usefulness of MD&A disclosures in the retail industry. *Journal of Accounting, Auditing & Finance*, *19*(4), 361–388. https://doi.org/10.1177/0148558X0401900401

Cormier, D., Magnan, M., & Van Velthoven, B. (2005). Environmental disclosure quality in large German companies: Economic incentives, public pressures or institutional conditions? *European Accounting Review, 14*(1), 3–39. https://doi.org/10.1080/0963818042000339617

De Andres, P., Azofra, V., & Lopez, F. (2005). Corporate boards in OECD countries: Size, composition, functioning and effectiveness. *Corporate Governance: An International Review, 13*(2), 197–210. https://doi.org/10.1111/j.1467-8683.2005.00418.x

De Villiers, C., Naiker, V., & Van Staden, C. J. (2011). The effect of board characteristics on firm environmental performance. *Journal of Management, 37*(6), 1636–1663. https://doi.org/10.1177/0149206311411506

Donnelly, R., & Mulcahy, M. (2008). Board structure, ownership, and voluntary disclosure in Ireland. *Corporate Governance: An International Review, 16*(5), 416–429. https://doi.org/10.1111/j.1467-8683.2008.00692.x

Elghaffar, E. S., Abotalib, A. M., & Mohamed Khalil, M. A. (2019). Determining factors that affect risk disclosure level in Egyptian banks. *Banks & Bank Systems*, *14*(1), 159–171. http://dx.doi.org/10.21511/bbs.14(1).2019.14

Elshandidy, T., Fraser, I., & Hussainey, K. (2013). Aggregated, voluntary, and mandatory risk disclosure incentives: Evidence from UK FTSE all-share companies. *International Review of Financial Analysis, 30*, 320–333. https://doi.org/10.1016/j.irfa.2013.07.010

Elshandidy, T., & Neri, L. (2015). Corporate governance, risk disclosure practices, and market liquidity: Comparative evidence from the UK and Italy. *Corporate Governance: An International Review, 23*(4), 331–356. https://doi.org/10.1111/corg.12095

Enslin, Z., Bruwer, W., & Viljoen, C. (2015). Enhancing risk-related disclosure in South Africa: A study on guidelines and current practices. *Journal of Economic and Financial Sciences, 8*(1), 261–280. https://doi.org/10.4102/jef.v8i1.94

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics, 26*(2), 301–325. http://www.jstor.org/stable/725104

Frias-Aceituno, J. V., Rodriguez-Ariza, L., & Garcia-Sanchez, I.M. (2013). The role of the board in the dissemination of integrated corporate social reporting. *Corporate Social Responsibility and Environmental Management, 20*(4), 219–233. https://doi.org/10.1002/csr.1294

Hackston, D., & Milne, M. J. (1996). Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, Auditing & Accountability Journal, 9*(1), 77–108. https://doi.org/10.1108/09513579610109987

Hariharan, B. R., Sailaja, V. N., & Patel, K. (2017). A study of disclosures on risk management of life insurance companies in India. *Indian Journal of Finance,11*(1), 29–43. https://doi.org/10.17010/ijf/2017/v11i1/108959

IIRC.(2013).*International<IR>framework.* http://integratedreporting.org/resource/international-ir-framework

Jackson, S. E. (1992). Consequences of group composition for the interpersonal dynamics of strategic issue processing. *Advances in Strategic Management*, *8*(3), 345–382.

Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *The Journal of Finance, 48*(3), 831–880. https://doi.org/10.1111/j.1540-6261.1993.tb04022.x

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Jorion, P. (2002). How informative are value-at-risk disclosures? *The Accounting Review*, 77(4), 911–931. https://doi.org/10.2308/accr.2002.77.4.911

Kajüter, P. (2006). Risk disclosures of listed firms in Germany: A longitudinal study. Paper presented at the *10th Financial Reporting & Business Communication Conference*, July, Cardiff Business School.

Kakkar, D., & Kamboj, G. (2011). Board structure and corporate performance: A causal analysis of select Indian companies. *Prabandhan: Indian Journal of Management*, *4*(11), 44–56. https://doi.org/10.17010/pijom/2011/v4i11/62647

Kravet, T., & Muslu, V. (2013). Textual risk disclosures and investors' risk perceptions. *Review of Accounting Studies, 18*(4), 1088–1122. https://doi.org/10.1007/S11142-013-9228-9

Lajili, K., & Zéghal, D. (2005). A content analysis of risk management disclosure in Canadian annual reports. *Canadian Journal of Administrative Sciences, 22*(2), 125–142. https://doi.org/10.1111/j.1936-4490.2005.tb00714.x

Lamboglia, R., Paolone, F., & Mancini, D. (2019). Determinants of the implementation of environmental risk indicators: Empirical evidence from the Italian manufacturing context. *Corporate Social Responsibility and Environmental Management, 26*(2), 307–316. https://doi.org/10.1002/csr.1680

Linsley, P. M., & Shrives, P. J. (2006). Risk reporting: A study of risk disclosure in the annual reports of UK companies. *The British Accounting Review, 38*(4), 387–404. https://doi.org/10.1016/j.bar.2006.05.002

Linsmeier, T. J., Thornton, D. B., Venkatachalam, M., & Welker, M. (2002). The effect of mandated market risk disclosures on trading volume sensitivity to interest rate, exchange rate, and commodity price movements. *The Accounting Review, 77*(2), 343 – 377. https://doi.org/10.2308/accr.2002.77.2.343

Manes-Rossi, F., Nicolo, G., & Levy Orelli, R. (2017). Reshaping risk disclosure through integrated reporting: Evidence from Italian early adopters. *International Journal of Business and Management, 12*(10), 11–23. https://doi.org/10.5539/ijbm.v12n10p11

Marshall, A., & Weetman, P. (2007). Modelling transparency in disclosure: The case of foreign exchange risk management. *Journal of Business Finance & Accounting, 34*(5–6), 705–739. https://doi.org/10.1111/j.1468-5957.2007.02007.x

Matta, R., & Mohapatra, A. K. (2021). Do content elements and capitals of integrated reporting framework require rethinking amid COVID-19? *Empirical Economics Letters*, *20*, (July Special Issue 1), 13–25. http://www.eel.my100megs.com/2021-7-july-si-1-abstract-p2.pdf

McNally, M.-A., Cerbone, D., & Maroun, W. (2017). Exploring the challenges of preparing an integrated report. *Meditari Accountancy Research*, *25*(4), 481–504. https://doi.org/10.1108/MEDAR-10-2016-0085

Milne, M. J., & Adler, R. W. (1999). Exploring the reliability of social and environmental disclosures content analysis. *Accounting, Auditing & Accountability Journal, 12*(2), 237–256. https://doi.org/10.1108/09513579910270138

Mohapatra, A. K., & Jha, S. (2018). Bank recapitalization in India: A critique of public policy concerns. *FIIB Business Review, 7*(1), 10–15. http://dx.doi.org/10.1177/2319714518766113

Nielsen, S., & Huse, M. (2010). Women directors' contribution to board decision-making and strategic involvement: The role of equality perception. *European Management Review, 7*(1), 16–29. https://doi.org/10.1057/emr.2009.27

Oliveira, J., Rodrigues, L. L., & Craig, R. (2011). Voluntary risk reporting to enhance institutional and organizational legitimacy: Evidence from Portuguese banks. *Journal of Financial Regulation and Compliance, 19*(3), 271–289. https://doi.org/10.1108/13581981111147892

Pavlopoulos, A., Magnis, C., & Iatridis, G. E. (2019). Integrated reporting: An accounting disclosure tool for high quality financial reporting. *Research in International Business and Finance, 49,* 13–40. https://doi.org/10.1016/j.ribaf.2019.02.007

Raar, J. (2002). Environmental initiatives: Towards triple bottom line reporting. *Corporate Communications: An International Journal, 7*(3), 169–183. https://doi.org/10.1108/13563280210436781

Rajpurohit, P. D., & Rijwani, P. R. (2020). Financial reporting practices and internal corporate governance mechanisms in emerging markets. *Prabandhan: Indian Journal of Management*, *13*(8–9), 8–27. https://doi.org/10.17010/pijom/2020/v13i8-9/155230

Robinson, G., & Dechant, K. (1997). Building a business case for diversity. *Academy of Management Perspectives, 11*(3), 21–31. https://doi.org/10.5465/AME.1997.9709231661

Sarpal, S. (2015). Antecedents of corporate board independence in simultaneous equation framework: Evidence from India. *Prabandhan: Indian Journal of Management, 8*(9), 35–46. https://doi.org/10.17010/pijom/2015/v8i9/77191

Singh, A. K., Maurya, S., & Mohapatra, A. (2019). IPO underpricing and predictive power of board related corporate governance mechanisms: A study of Indian IPO market. *Theoretical Economics Letters*, *9*(6), 2002–2018. https://doi.org/10.4236/tel.2019.96127

Solomon, J. F., Solomon, A., Norton, S. D., & Joseph, N. L. (2011). Private climate change reporting: An emerging discourse of risk and opportunity? *Accounting, Auditing & Accountability Journal, 24*(8), 1119–1148. https://doi.org/10.1108/09513571111184788

Steyn, M. (2014). Organisational benefits and implementation challenges of mandatory integrated reporting: Perspectives of senior executives at South African listed companies. *Sustainability Accounting, Management and Policy Journal, 5*(4), 476 – 503. https://doi.org/10.1108/SAMPJ-11-2013-0052

Tonk, M. S. (2012). Independent directors: An Indian perspective. *Prabandhan: Indian Journal of Management, 5*(4), 32–38. https://doi.org/10.17010/pijom/2012/v5i4/60328

Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics, 53*(1), 113–142. https://doi.org/10.1016/S0304-405X(99)00018-5

Van Zijl, W., Wöstmann, C., & Maroun, W. (2017). Strategy disclosures by listed financial services companies: Signalling theory, legitimacy theory and South African integrated reporting practices. *South African Journal of Business Management, 48*(3), 73 – 85. https://doi.org/10.4102/sajbm.v48i3.37

Vitolla, F., Raimo, N., & Rubino, M. (2020). Board characteristics and integrated reporting quality: An agency theory perspective. *Corporate Social Responsibility and Environmental Management, 27*(2),1152–1163. https://doi.org/10.1002/csr.1879

Watson, A., Shrives, P., & Marston, C. (2002). Voluntary disclosure of accounting ratios in the UK. *The British Accounting Review, 34*(4), 289–313. https://doi.org/10.1006/bare.2002.0213

Welford, R. (2000). *Corporate environmental management 3: Towards sustainable development* (1st ed.). Routledge. https://doi.org/10.4324/9781315825106

Williams, K. Y., & O'Reilly III, C. A. (1998). Demography and diversity in organizations: A review of 40 years of research. In, B. M. Staw & L. L. Cummings (eds.), *Research in organizational behaviour* (Vol. 20, pp. 77–140). JAI Wilson.

Wong, A. (2014). Corporate sustainability through non-financial risk management. *Corporate Governance, 14*(4), 575–586. https://doi.org/10.1108/CG-02-2013-0026

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