ARE BANKS' RISK DISCLOSURES VALUE RELEVANT? EVIDENCE FROM AN EMERGING MARKET

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DECLARATION

I, hereby, declare this dissertation entitled "*Are Banks' Risk Disclosures Value Relevant? Evidence From an Emerging Market*" embodies the original research work that I carried out in partial fulfillment of the requirements for the degree of Master of Philosophy (MPhil) in Finance of Kathmandu University School of Management. I further confirm that this dissertation has not been submitted for the award of any other degree.

Moti Ram Paudel January 2026

RECOMMENDATION

This is to certify that Mr. Moti Ram Paudel has completed his dissertation on "*Are Banks' Risk Disclosures Value Relevant? Evidence From an Emerging Market*" under my supervision and that his dissertation embodies the result of his investigation conducted during the period he worked as an MPhil candidate of KU School of Management. The dissertation meets the scholarly standards expected of a candidate for the partial fulfillment of the requirements for the MPhil degree. This research has been followed the format of the School of Management.

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Assistant Prof. Rajesh Sharma, PhD

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ABSTRACT

This study examines the value relevance of risk disclosures in Nepalese banks and financial institutions (BFIs), using Information Asymmetry Theory to assess how readability influences stock price. To our knowledge, it is the first to examine this relationship in an emerging market context. We performed a textual analysis of risk disclosures in annual reports and evaluated their readability using the BOG Index for Class A, B, and C Nepalese banks over a fourteen-year period (2010/11 to 2023/24). Using fixed-effects and instrumental variable estimations on a sample of 49 BFIs with 354 firm-year observations, we find that lower readability of risk disclosures significantly reduces share prices, thereby supporting their value relevance. These results are consistent across several model specifications, multiple readability indexes, and principal component analysis. The research enhances agency theory and information asymmetry literature by illustrating the crucial importance of disclosure readability in emerging markets. Policy implications highlight the necessity for regulators to promote for plain-language reporting standards and for banks to improve the readability of risk disclosures to improve market efficiency.

Keywords: *Risk disclosures, readability, value relevance, information asymmetry, emerging markets*

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

ASEQ	Asset to Equity Ratio
BFI	Banking and Financial Institutions
COVID	COVID-19 Pandemic
FE	Fixed Effects Model
FY	Fiscal Year
IV	Instrumental Variable
NLP	Natural Language Processing
NLTK	Natural Language Toolkit
NRB	Nepal Rastra Bank
PCA	Principal Component Analysis
ROA	Return on Assets
ROE	Return on Equity
SAARC	South Asian Association for Regional Cooperation
VIF	Variance Inflation Factor

CHAPTER I

INTRODUCTION

Background of the Study

The banking sector serves as the backbone of global economies, providing indispensable financial services that underpin economic growth and stability. Commercial banks, in particular, perform crucial functions such as deposit mobilization, credit allocation, payment facilitation, and risk management (Matthews et al., 2023). These activities not only fuel economic development but also expose banks to a range of risks, including credit, market, operational, and liquidity risks. Managing and communicating these risks effectively is vital for maintaining trust, market discipline, and financial stability (Bessis, 2011). Consequently, risk disclosure has emerged as a cornerstone of corporate transparency and governance in the banking sector.

In the global context, the importance of risk disclosure came into importance aftermath of 2008 global financial crisis. This crisis emphasized the systemic vulnerabilities arising from inadequate disclosure practices and encouraged the adoption of robust regulatory frameworks, such as the Basel Accords, aimed at enhancing risk management and disclosure standards (Basel Committee on Banking Supervision, 2013). These regulations require BFIs to disclose qualitative and quantitative information about their risk exposures (e.g., credit, liquidity, and operational risks). Such disclosures are designed to enhance market discipline by assisting stakeholders to assess the financial health of institutions (Munk et al., 2017). The effectiveness of these regulations often depends on how well the disclosed information is communicated, particularly its narrative quality.

In the context of developed economies, risk disclosure practices are marked by stringent regulatory oversight and well-established market norms. For example, the Securities and Exchange Commission (SEC) in the United States (US) requires annual reports to include detailed risk disclosures that are clear and comprehensive (Johnston & Petacchi, 2017). Similarly, under the European Union's Capital Requirements Directive (CRD IV), Banks are required to disclose detailed information to promote transparency and maintain financial stability (Longo et al., 2025). These practices are complemented by advanced analytical tools and a high level of financial literacy among stakeholders, which collectively enhance the value relevance of disclosures. Studies in these contexts have consistently shown that high-quality risk disclosures positively influence investor confidence and market valuations (Loughran & McDonald, 2014).

In contrast, emerging markets face special challenges in executing effective risk disclosure practices. These are inadequate regulatory frameworks, restricted enforcement capabilities, resource constraints and a lower level of financial literacy of investors, which lead to lower disclosure quality (Khan et al., 2024; El-Sayed et al., 2021). Moreover, the nature and extent of risk disclosures are influenced by cultural and institutional factors. BFIs in these regions implement a "*tick-the-box*" approach to regulatory compliance. This approach focuses on compliance with minimum disclosure requirements over the provision of meaningful and contextually relevant information (Stubbs & Higgins, 2018). While this may satisfy regulatory requirements, it often reduces the narrative quality of disclosures. As a result, reports become standardised and lack depth and practical usefulness for stakeholders.

The challenges associated with risk disclosures in emerging markets are further compounded by the rapid growth and evolving regulatory landscapes of their BFIs. This

dynamics make risk management less readable and increase the demand for clear communication. In response, some banks have started providing voluntary disclosures to stand out and gain stakeholder trust. However, adoption varies widely, reflecting differences in organizational priorities, resources, and market maturity (Md Zaini et al., 2018). This shows the importance of assessing not just the quantity but also the quality of risk disclosures, particularly their narrative attributes.

Narrative quality, encompassing readability, has emerged as a important dimension of risk disclosures. Readability refers to the ease with which information can be understood (Samarakoon et al., 2025; Bonsall IV et al., 2017). High readability ensures that disclosures are clear and easily understood by a wide range of stakeholders, such as investors, regulators, and the general public. Research in developed markets found that companies with more readable financial reports have higher market value. This shows that clarity in reporting add real value for investors (Asay et al., 2017). In many emerging markets, the focus on narrative quality is especially important given the widespread "*tick-the-box*[1]" compliance culture. Such an approach often produces disclosures that are highly technical and dense, making them difficult to use and reducing their value relevance (Stubbs & Higgins, 2018).

Agency theory suggests that managers, as agents of shareholders, prioritise their personal incentives over the long-term interests of the firm, leading to strategic obfuscation in financial disclosures to serve their interests (Jensen & Meckling, 1976; Watts & Zimmerman, 1986). This misalignment can result in managers producing less readable disclosures to conceal true risk

[1] In "*tick-the-box*" regulators focus on fulfilling only the minimum legal requirements & ignore whether the narrative disclosure is easily understood (Rose, 2016).

exposures and create a more favorable financial image of firms, often motivated by short-term performance incentives that undermine transparency (Wruck & Wu, 2021). When combined with information asymmetry theory, this strategic opacity worsens the information gap between managers and investors, as managers intentionally obscure crucial risk information to maintain their informational advantage (Akerlof, 1970). In emerging markets, weaker regulatory oversight and low disclosure readability increase information gaps and limit investor decision-making. This reduces clarity, increases processing costs, and leads to less accurate valuations with higher market uncertainty (Samarakoon et al., 2025). Understanding how managerial incentives influence the readability of risk disclosures and their effect on information asymmetry is important. This study examines risk disclosure readability and its impact on firm valuation.

Statement of the Problem

Nepal, which is an emerging economy[2] with rapidly growing BFIs, offers a compelling context for examining the quality and value relevance of risk disclosures. Over the years, the Nepalese BFIs have undergone major transformation, driven by economic liberalization, technological advancements, and increasing stakeholder expectations (Nepal Rastra Bank, 2023). As of mid-January 2025, there are 20 commercial banks and 17 development banks and 17 finance companies, which play an important role in economic development. However, BFIs are

[2] According to the World Bank, lower-middle-income economies (also called emerging nation) are defined as those with a GNI per capita, calculated using the World Bank Atlas method, between $1,146 - $4,515. As of 2023, Nepal's Gross National Income (GNI) per capita is $1,370, placing it in the lower middle-income category according to the World Bank's classification. Nepal's Gross National Income (GNI) per capita for 2023 is available on the World Bank website: https://data.worldbank.org/indicator/NY.GNP.PCAP.CD?locations=NP . Accessed on September 26, 2024.

also characterized by heightened risk exposures, making effective risk management and communication important.

Despite regulatory advancements, the narrative quality of risk disclosures in Nepalese BFIs remains a major concern. The central regulatory authority (i.e., Nepal Rastra Bank (NRB)) requires BFIs to disclose risk-related information, such as credit, liquidity, and operational risks. Nevertheless, these requirements tend to emphasize quantitative measures, giving relatively little attention to the narrative content of the disclosures. This regulatory focus has led to the increase of *standardized*, *boilerplate* reports that fail to address the information needs of stakeholders. Moreover, the poor financial literacy in Nepal (*financial literacy rate of 57.9 %*[3]) increases the difficulty of understanding poorly readable disclosures (Sharma, 2013; Giri, 2020).

The weaknesses of current practices highlight the need for a systematic evaluation of the narrative quality of risk disclosures in Nepalese BFIs. Assessing readability, Researchers can provide insights into the accessibility and usability of disclosed information (El-Sayed et al., 2021), facilitating the way for improvements that align with global best practices. Enhancing the narrative quality of risk disclosures is essential for meeting stakeholder expectations (Enslin et al., 2025). It also plays a key role in fostering a culture of transparency and accountability in the BFIs.

The value relevance of risk disclosures, particularly regarding their narrative quality, remains an underexplored area in the Nepalese BFIs. Value relevance refers to the extent to

[3] NRB, *Baseline Survey on Financial Literacy in Nepal*, Kathmandu: Financial Inclusion Department, December 2022. The survey reported a national financial literacy rate of 57.9%, with an average composite score of 11.59 out of a maximum of 20, based on the OECD/INFE framework comprising financial knowledge, financial behaviour, and financial attitudes. https://www.nrb.org.np/contents/uploads/2025/04/Financial-Stability-Report.pdf (Page. 82)

which disclosed information influences stakeholder perceptions and decisions. It ultimately affects the market valuation of the institution (Asay et al., 2017; Elshandidy & Zeng, 2022). High-quality disclosures, characterized by better readability, are more likely to be value-relevant (Enslin et al., 2025; El-Sayed et al., 2021). They provide stakeholders with clear and actionable insights. By focusing on these dimensions, this study aims to bridge the gap between compliance-driven and quality-driven disclosure practices in Nepal.

Empirical studies show that higher readability in financial and analyst reports enhances investor decision-making and trading activity (De Franco et al., 2015; Elliott et al., 2015). Conversely, firms that manage earnings opportunistically tend to issue less readable disclosures to obscure information, reducing transparency and affecting value relevance (Lo et al., 2017; Ertugrul et al., 2017). However, the existing literature (Sharma, 2013; Giri, 2020) on risk disclosure in Nepal, primarily focuses on regulatory compliance rather than the quality and value relevance of the information disclosed. These studies emphasize the "*check-the-box*" approach, which prioritizes meeting regulatory requirements over addressing the clarity or value of the disclosed information. While adherence to regulations like the NRB Guidelines (2010) is important, the quality and clarity of disclosures are essential for informed decision-making. This gap in research highlights the need to explore whether risk disclosures in Nepalese BFIs are not only compliant but also relevant to investors. The guiding research question for this study is:

- Are the banks' risk disclosures value-relevant in Nepal?

Objectives of the Study

The main objectives of this study are given below:

- To explore the quality of Nepalese bank's risk disclosure.
- To assess the value relevance of Nepalese banks' risk disclosure quality.

Significance of the Study

This study contributes to the literature in the following ways. First, this study provides evidence on the importance of risk disclosure quality in a context of emerging market. Risk disclosure in emerging market differs from the developed settings (e.g., Haryanto et al., 2025; Giner et al., 2020). The institutional environment in emerging markets provides an opportunity to assess whether the relevance of risk disclosure quality extends beyond developed markets. In developed markets risk disclosures are often *information-oriented* (Strampelli, 2018). However, in emerging markets like Nepal tends to *compliance-oriented*, where disclosures are boilerplate, repetitive, and lack interpretive depth. In such an environment, readability becomes especially important, yet it remains an underexplored dimension of risk disclosure quality.

Second, the study draws on agency theory and positive accounting theory (PAT) to explain how managerial incentives and information asymmetry influence narrative disclosure (Watts & Zimmerman, 1986; Jensen & Meckling, 1976; Akerlof, 1970). Managers adjust language of disclosures to manage information asymmetry, affecting transparency, and investor judgment (Tran et al., 2023). Readability influences how investors interpret information (Asay et al., 2017). Findings show that in emerging markets where weaker regulatory oversight, the

readability of disclosures is critical for bridging information gaps between managers and investors.

Third, this study assesses the impact of risk disclosure readability on share price using Ohlson's (1995) value relevance framework. The findings shows that the Ohlson (1995) model remains applicable in contexts with limited regulatory oversight. So, it confirms its robustness in emerging market settings.

Fourth, existing research (e.g., Ibrahim & Aboud, 2024; Giner et al., 2020; Elsayed & Hassanein, 2024), which focus on content-analyzed risk-related sentences, words as a proxy for risk disclosure quality, or on *lexical features* (i.e., tone) as in Elshandidy & Zeng (2022). But our study incorporates *syntactical features* (i.e., readability) of risk disclosure. We employ textual analysis using Natural Language Processing (NLP) techniques with NLTK (for alternative indices) and the StyleWriter (for BOG) to measure risk disclosure quality in terms of readability. And examine the effect of readability on share prices. Our findings indicate that, like lexical features (Elshandidy & Zeng, 2022), syntactical features of risk disclosure are also value-relevant.

Fifth, while the extant literature focuses on the economic benefits of risk disclosure in a *voluntary setting* (e.g. Elsayed & Hassanein, 2024; Hassanein & Elsayed, 2021). Our study extends this research to *mandatory settings*, demonstrating that risk disclosure is also value-relevant in such contexts.

The results have practical implications. For policymakers (e.g., NRB), they highlight the need to promote readable risk disclosures, not just compliance to follow the "*check the box*" approach. For BFIs, readable risk disclosures enhance share prices, so BFIs focus on readable

risk disclosures to increase market valuation. For investors, readable risk disclosure reduces information asymmetry and supports market efficiency. The study provides fresh evidence from an emerging economy that readability shapes both communication quality and market outcomes. This highlights the role of clear disclosures in supporting efficient capital allocation and financial stability.

Organization of the Study

This study is divided into five chapters. Chapter-I contains the background of the study, statement of problem, objectives, and significance of the study. Chapter-II reviews theories and prior studies on risk disclosure and firm valuation. Chapter-III contains the research design, population and sample, variables, and regression models. Chapter-IV reports the results include descriptive statistics, correlations, and regressions. Chapter-V provides discussion, and conclusion of the study.

CHAPTER II

LITERATURE REVIEW

This chapter presents both a theoretical and empirical review. The theoretical review explores the mechanisms that influence the quality of risk disclosures and their value relevance in detail. The empirical review provides a comprehensive examination of prior studies on the quality and value relevance of risk disclosures.

Theoretical Literature

Kothari (2001) identifies four main drivers of demand for capital markets research in accounting: (1) fundamental analysis and valuation, (2) tests of capital market efficiency, (3) disclosure regulation and (4) the role of accounting in contracts and the political process. Among the four sources, this research focuses on disclosure regulation because it plays a vital role in ensuring transparency. It reduces information asymmetry and enhances the quality of financial reporting (Shim et al., 2016). Effective disclosure regulation is essential for providing accurate and timely information to investors, helping them make informed decisions.

Positive Accounting Theory

Most accounting research since Ball and Brown (1968) and Beaver (1968) is positive in nature. PAT developed by Watts and Zimmerman (1986) focuses on “what is”, examining actual practices and behaviors observed in the real world. In contrast, normative accounting theory emphasizes “what should be”, reflecting ideal standards and practices. In the context of risk disclosure, “what is” pertains to the current readability of banks’ disclosures, whereas “what should be” denotes the ideal levels of clarity and comprehensiveness as prescribed by normative guidelines.

PAT considers two perspectives in explaining firms' disclosure behavior: the opportunistic form and the efficiency form[4] (Watts & Zimmerman, 1990). This is particularly relevant for risk disclosures in banks, where managers may intentionally make disclosures less readable to present a more favourable view of the firm (Bushee et al., 2018). In contrast, the efficiency perspective argues that firms provide disclosures to minimise transaction costs and improve market efficiency, ensuring that shareholders receive clear, relevant, and comprehensive information (Watts & Zimmerman, 1990; Brown & Hillegeist, 2007). PAT offers a useful framework for examining whether disclosure readability in Nepalese BFIs reflects opportunistic obfuscation or efficiency-driven transparency, which is essential for assessing its value relevance.

Agency Theory

Agency theory, introduced by Jensen and Meckling (1976), defines the agency relationship as a contract in which principals delegate decision-making authority to agents to act on their behalf. This delegation inherently creates conflicts of interest, as managers may not always act in the best interests of shareholders. Managerial behavior is often guided by self-interest, including financial rewards, job security, or personal reputation, rather than by the goal of maximizing shareholder value (Solomon, 2020). Such incentives can lead to opportunistic behavior, where managers manipulate financial reporting and disclosures to serve their own objectives (Watts & Zimmerman, 1986).

In the context of BFIs, managers may deliberately reduce the readability of financial statements and risk disclosures to obscure unfavorable information. By presenting a more

[4] The efficiency perspective, focusing on minimizing agency costs ex ante, and the opportunistic perspective, which highlights ex post opportunistic actions by managers (Deegan, 2016).

favorable view of the bank's financial health, they can enhance short-term performance metrics, secure bonuses, or increase stock prices. Reduced readability impedes investors and analysts from accurately assessing underlying risks, thereby allowing managers to avoid scrutiny (Ness & Mirza, 1991). Consequently, poor disclosure readability can mask weak performance, distort investment decisions, and reduce overall market efficiency.

Accordingly, agency theory provides a strong basis for examining how managerial incentives shape the readability of risk disclosures in Nepalese BFIs. Consistent with this framework, the present study investigates whether lower disclosure readability is associated with weaker market valuation, reflecting investors' penalty for opaque risk communication.

Information Asymmetry

Information asymmetry arises when one party in a transaction have better information than another party, which creates inefficiencies in capital markets (Akerlof, 1970). This asymmetry between principals and agents reduces shareholders' ability to evaluate managerial competence and effort, making effective disclosure mechanisms essential.

In BFIs, managers may comply with disclosure regulations while maintaining low readability of disclosure to hide critical details. This preserves private knowledge of the bank's risk profile and limits investors' understanding (Asay et al., 2017). Less readable disclosures increase information processing costs for shareholders and reduce the ability to extract value-relevant information (Lee, 2012; Bushee et al., 2018; Saleeb Agaiby Bakhiet, 2024). Conversely, highly readable disclosures reduce information asymmetry, enabling investors to better assess risks and make informed decisions (Brown & Hillegeist, 2007; Huang & Zhang, 2012).

Accordingly, this study integrates agency theory and information asymmetry theory to examine how managerial incentives shape the readability of risk disclosures in Nepalese BFIs.

By linking disclosure readability to stock valuation outcomes, the study highlights readability as a core narrative channel through which transparency improves investor decision-making and market efficiency.

Literature Review

Extensive research shows the important role of corporate disclosures in mitigating information asymmetry within capital markets. Managers use both mandatory and voluntary disclosures (e.g. financial statements, management's discussion and analysis (MD&A), and risk reports). These disclosures help bridge informational gaps and improve efficiency in capital markets (Tran et al., 2023; Aman & Moriyasu, 2022; Jiang et al., 2021; Jeriji & Nasfi, 2023). These disclosures include annual & quarterly reports, footnotes, MD&A, and risk-related information, which collectively serve as the primary source of information for investors.

Textual disclosures account for roughly 80% of financial reports (Guay et al., 2016; Lo et al., 2017), and managers include detailed narratives, such as forward-looking statements and non-quantifiable content, to meet investor demands while apparently reducing information asymmetry (Rawson et al., 2023). However, from an agency theory perspective, although managers are expected to provide transparent signals to facilitate monitoring and control, textual features can also be manipulated to serve managerial interests, such as impressing stakeholders or concealing adverse information (Leung et al., 2015). Nevertheless, some scholars argue that when banks report their exposures in a transparent and informative manner, financial reporting can significantly reduce information asymmetry (Giner & Mora, 2019; Tran et al., 2023). Moreover, theoretical perspectives further support the value relevance of increased disclosure, since agency theory posits that the separation of ownership and control leads to information

asymmetry, which heightens uncertainty and monitoring costs, thereby reducing firm value (El-Deeb et al., 2022; Wang & Hussainey, 2013). Increased disclosure can mitigate information asymmetry and its related costs, thus enhancing firm value. Consistent with this reasoning, empirical evidence by Miihkinen (2013) demonstrates a negative relationship between RD level and information asymmetry, while Chung et al. (2015) conclude that firms with higher voluntary disclosure experience lower agency problems.

Previous empirical studies (e.g. Martínez et al., 2014; Elshandidy, 2014) emphasized that the effectiveness of corporate disclosures depends on the accuracy and relevance of accounting numbers and financial information. Beyond accounting numbers & financial information, the value relevance of disclosures is influenced by the extent of risk-related information provided (Giner et al., 2020; Abdullah et al., 2015). Both the content & tone of disclosures influence stakeholders' perceptions. For instance, Elshandidy and Zeng (2022) found that disclosures emphasising upside risks tend to increase stock prices, whereas those highlighting downside risks tend to decrease share prices. El-Deeb et al. (2022) demonstrated that strong corporate governance improved disclosure tone, which in turn positively affects firm value. Wang and Hussainey (2013) found that forward-looking statements in the narrative sections of annual reports value relevant. Barth et al. (2018) found that voluntary IFRS adoption increases accounting comparability and provides capital market benefits and enhanced value relevance of financial reporting. Over time, the value relevance of corporate disclosures depends not only on their accuracy and volume but also on the quality, content, and tone of the information presented.

Evidence from developed economies presents mixed results regarding the value relevance of disclosures. For instance, voluntary disclosures in Denmark did not consistently enhance the informativeness of current returns or predictability of future earnings (Banghøj & Plenborg,

2008). In contrast, compliance with IFRS standards, such as IAS 36 and IAS 38, generally improves transparency, reduces forecast dispersion, and positively influences firm valuation (Andréet al., 2018; Tsalavoutas & Dionysiou, 2014). Empirical studies also demonstrate that high-quality financial KPI disclosures lower the Implied Cost of Capital and weakly increase firm value, whereas non-financial KPI disclosures have limited impact (Elzahar et al., 2015). Similarly, valuation-related disclosures improve market value beyond traditional metrics such as book value and earnings (Reitmaier & Schultze, 2017), while XBRL adoption significantly enhances the value relevance of accounting measures like BVPS and EPS (Shan & Troshani, 2021). Likewise, mandatory non-financial risk disclosures under EU Directive 2014/95/EU enhance market value and help mitigate the negative effects of financial risks (Veltri et al., 2020). Even when IFRS or digital reporting tools are used, weak enforcement and limited investor literacy mute their benefits (Shan & Troshani, 2021; Reitmaier & Schultze, 2017). Existing literature also offers empirical evidence on the impact of various forms of disclosure on firm value. For example, Orens et al. (2009) identified a positive link between intellectual capital disclosure and firm value across four European countries, while Gordon et al. (2010) reported a positive association between overall voluntary disclosure & firm value in the USA. However, relatively little attention has been devoted to risk disclosure, and the relationship between RD and FV remains underexplored in the accounting literature. Similarly, Malafronte et al. (2018), focusing on 47-European insurance companies during 2005–2010, documented a significant positive relationship between RD and firm value. In addition, financial risk disclosures under IFRS 7 and Pillar 3 positively influence market prices, particularly under strong regulatory oversight (Giner et al., 2020). Moreover, readability plays a role, as lower readability can deter small investors, while larger investors respond more to report length than clarity (Miller, 2010).

Taken together, prior research in developed markets indicates that the level of risk disclosure is positively associated with firm value, although the accounting literature has paid relatively less attention to this area compared to other forms of disclosure. Other dimensions, including the readability of risk disclosures, have received even less focus, despite their potential implications for how different classes of investors interpret and respond to disclosed information.

In emerging markets, the value relevance of corporate disclosures is often more sensitive to textual clarity and readability than in developed economies. Weak regulatory enforcement, lower levels of investor financial literacy limit the effectiveness of disclosures, even when content and tone are carefully managed (Hassan et al., 2022; Restrepo et al., 2022). In such contexts, poorly structured or linguistically less readable reports exacerbate information asymmetry and reduce market efficiency, hindering stakeholders' ability to interpret and use the information effectively (Stubbs & Higgins, 2018; Garel et al., 2019). Empirical evidence indicates that readable and well-organized disclosures enhance investors' comprehension, lower cognitive costs, and improve the decision-usefulness of financial information (Du et al., 2024; Li, 2008; Lehavy et al., 2011). From an agency theory perspective, improved readability aligns managerial communication with stakeholder expectations, mitigating agency conflicts and enhancing transparency (Dalwai et al., 2021). Therefore, in emerging economies, readability is a crucial complement, ensuring that disclosures are both informative and accessible, ultimately strengthening their value relevance and supporting more efficient capital markets.

Existing studies in emerging markets found that the quality of disclosure impact on firm valuation varies with regulation, investor sophistication, and market development. For example, voluntary disclosures in Turkey positively impact on firm value (Uyar & Kılıç, 2012). Voluntary adoption of Integrated Reporting (IR) positive influence on the market value of a firm (Lunawat

et al., 2025). IFRS-based disclosures enhance accounting information relevance in the UAE (Alali & Foote, 2012). In China, weak investor protections and enforcement mechanisms limit the value relevance of financial disclosures (Wang et al., 2013). In Brazil, weak investor protections and enforcement mechanisms reduce the value relevance of financial risk disclosures (Menezes da Costa Neto et al., 2023). Srivastava and Muharam (2022) found that IFRS enforcement increased the value relevance of both book values and earnings in India and Indonesia, with earnings showing greater explanatory power. Elbannan and Elbannan (2015) found that in Egypt, a high level of risk disclosure is positively associated with higher market valuation. Abdullah et al. (2015) found that voluntary risk management disclosure in Malaysia has a significant positive impact on firm value. In the context of South Africa, the readability of mandatory integrated reporting (IR) is positively associated with higher market valuation (Caglio et al., 2020). Low readability in emerging markets increases information asymmetry, reduces market efficiency, and diminishes the value relevance of disclosure (Saleeb Agaiby Bakhiet, 2024; Hesarzadeh & Rajabalizadeh, 2019). Dalwai et al., (2021) found that in Oman's financial sector, readable annual reports are associated with higher Tobin's Q. Empirical evidence from emerging markets found that higher-quality disclosures enhance firm valuation. Their impact is influenced by regulatory strength, investor sophistication, and market development. Both mandatory and voluntary reporting practices, including R&D, risk disclosures, IFRS adoption, and integrated reporting, play a significant role in increasing firm value.

Readability refers to the ease with which a reader can process and comprehend written text. Readability consists use of clear, straightforward language that avoids complexity, such as legal/financial jargon, lengthy sentences and abstract words (Bonsall IV et al., 2017). Less readable disclosures lead investors to seek external information more, affecting their valuation

judgments (Asay et al., 2017; El-Sayed et al., 2021). Cui (2016) found that the readability of financial disclosures plays a crucial role in investor decision-making, and information accessibility. In emerging markets, recent studies have measured readability using indices such as the Flesch-Kincaid Grade Level, Gunning Fog Index, SMOG Index, Coleman-Liau Index, and Automated Readability Index (Gangadharan & Padmakumari, 2023; Toerien & Du Toit, 2024; Dhir & Singh, 2025). The Bog Index has been applied in the Indian context to examine the readability of annual reports (Tiwari & Chatterjee, 2024).

In emerging markets, the value relevance of corporate disclosures is often inconsistent. Because of weak regulatory enforcement and low investor financial literacy frequently limit their effectiveness. Voluntary disclosures, IFRS adoption, and R&D reporting positively impact firm value when properly implemented. However, institutional weaknesses often constrain these benefits. This shows a research gap on how the readability of risk disclosures influences firm value in emerging economies with less stringent regulatory environments. In such contexts, BFIs often adopt a mere compliance or "*check-the-box*" approach to disclosure practices.

Hypothesis Development

Despite the 2010 regulation imposed by the Nepal Rastra Bank (NRB), the quality of banks' risk disclosures remains a contested issue. While the regulatory mandate emphasizes transparency by requiring comprehensive reporting of credit, market, operational, liquidity, strategic, reputational, and legal risks using both quantitative metrics and narrative explanations (Nepal Rastra Bank, 2010). However, compliance alone does not guarantee that disclosures are meaningful. Managers often fulfill the minimum reporting requirements while strategically reducing readability, and making information harder for stakeholders to interpret effectively

(Hellman et al., 2018; Habib & Hasan, 2020). This raises the question of whether such disclosures genuinely enable stakeholders to assess risk or merely serve as a compliance exercise.

Clear and comprehensive risk disclosures are essential for investors, as they facilitate accurate assessments of financial stability and support informed decision-making (Saleeb Agaiby Bakhiet, 2024; Hesarzadeh & Rajabalizadeh, 2019). However, information asymmetry arises when managers hold private knowledge about a firm's risk profile that investors cannot easily access or interpret (Akerlof, 1970). This asymmetry widens when disclosures lack readability, since investors face higher processing costs and struggle to extract value-relevant insights (Bushee et al., 2018). By contrast, high readability enhances transparency and reduces information asymmetry (Samarakoon et al., 2025). It improves the decision-usefulness of risk reports, improving investor confidence, and strengthening market efficiency (Hesarzadeh & Rajabalizadeh, 2019); however, within the frameworks of PAT and agency theory, managers have incentives to deliberately obscure disclosures by reducing readability. This allows them to protect personal interests, such as maximising compensation or safeguarding professional reputation, even if it comes at the expense of shareholders (Watts & Zimmerman, 1986; Jensen & Meckling, 1976; Chakrabarty et al., 2018).

In emerging markets, where regulatory enforcement is often weak and investor literacy is limited, the clarity of narrative disclosures becomes important. Well-structured, readable reports enable stakeholders to interpret complex financial information, reduce misunderstandings, and support confidence in corporate reporting (Samarakoon et al., 2025). Empirical studies found that high readability improves forecast accuracy, trading volumes, credit ratings, and reduces the cost of equity and information-processing costs (De Franco et al., 2015; Guay et al., 2016;

Bonsall & Miller, 2017; Bai et al., 2019). Conversely, less readable disclosures increase reliance on external information, reduce investor confidence, and impair market efficiency (Li, 2008; Miller, 2010; Asay et al., 2017).

Given this strong evidence, the readability of risk disclosures is expected to have significant value relevance in emerging markets. Investors are more likely to rely on disclosures that are readable and easy to understand. This facilitates accurate risk assessment and supports informed decision-making. Accordingly, this study proposes the following hypothesis:

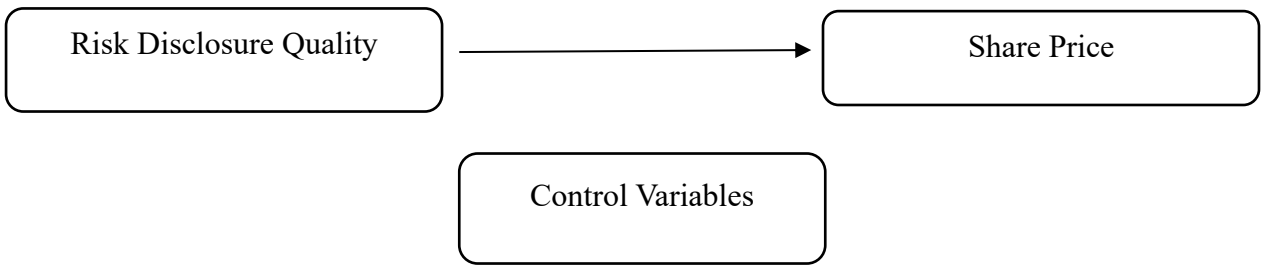
H: Banks' risk disclosures with better readability score are likely to be associated with higher firm values.

Conceptual Framework

The conceptual framework of this study is shown below in Figure 1.

Figure 1

Conceptual Framework



CHAPTER III

RESEARCH METHODOLOGY

The study employed a quantitative research approach to examine the value relevance of risk disclosure quality. The analysis was conducted using the models developed by Ohlson (1995). Existing studies have used this approach to assess the value relevance of risk disclosures (e.g., Giner et al., 2020; Elshandidy & Zeng, 2022).

Research Design

The objective of this research is to assess the value relevance of Nepalese BFIs' risk disclosure quality. The study has adopted a descriptive and causal research design. The analysis is based on a long, unbalanced panel of BFIs using panel data regression models.

Population and Sample

The population for this study included all categories of BFIs in Nepal, as classified by the NRB: Commercial Banks (A), Development Banks (B), Finance Companies (C), and Micro Finance Institutions (D). The sample for the study includes A, B and C class banks. The asset distribution among BFIs in Nepal, as reported in the Bank Supervision Report (2023/2024)[5], highlights the substantial role of Commercial Banks (83.11%), followed by Development Banks (8.23%) and Finance Companies (1.97%), in the financial sector. These institutions hold a dominant position in the banking sector, controlling over 93% of total assets. In addition, the rationale for selecting A, B and C class banks is that these banks publish their annual reports in English, facilitating textual analysis. Conversely, most Micro Finance Institutions publish their annual reports in Nepali. The study used secondary data obtained from the financial statements

[5] Source: Bank and Financial Institutions Regulation Department, *Bank Supervision Report*, Nepal Rastra Bank, Bank Supervision Department, Kathmandu, Nepal, March 2025, p. 3.

of sampled Nepalese BFIs over fourteen years, spanning from FY 2010/2011 to FY 2023/2024. The sample period for commercial banks starts in 2010/11, because the Nepal Rastra Bank (NRB) in 2010 issued Risk Management Guidelines that mandated comprehensive risk disclosures for all commercial banks. For development banks and finance companies, the sample period begins in 2017/18, when these institutions were first required to disclose risk disclosures in annual reports.

Table 1

Sample Distribution by Year

Year	Frequency	Percent	Cumulative Frequency	Cumulative Percent
2011	11	3.11	11	3.11
2012	12	3.39	23	6.5
2013	14	3.95	37	10.45
2014	13	3.67	50	14.12
2015	16	4.52	66	18.64
2016	17	4.80	83	23.44
2017	17	4.80	100	28.24
2018	19	5.37	119	33.61
2019	40	11.30	159	44.91
2020	40	11.30	199	56.21
2021	43	12.15	242	68.36
2022	41	11.58	283	79.94
2023	37	10.45	320	90.39
2024	34	9.60	354	100.00

Source: Authors' compilation

Considering all, the total sample is 49 BFIs, categorised as A, B, and C classes. A-class banks are 21 with 215 firm-year observations, B-class banks are 15 with 75 observations, and C-class banks are 13 with 64 observations. The dataset contains 354 firm-year observations across all bank classes.

Table 1 shows the annual distribution of sampled Nepalese BFIs' risk disclosure reports in English from 2011 to 2024. The frequency of reports increases steadily, peaking between 2019 and 2022. The cumulative percentages show good coverage, giving reliable data to analyse risk disclosure quality over time.

Measurement of Risk Disclosure Quality

Readability refers to the ease with which a reader can process and comprehend written text. It is achieved through clear, straightforward language that avoids complexity, such as legal/ financial jargon, lengthy sentences, and abstract words (Bonsall IV et al., 2017). Prior studies show that less readable firm disclosures push investors to rely more on external information sources, which in turn affects their valuation judgments and increases dependence on outside data (Asay et al., 2017). Similarly, Cui (2016) shows that the readability of financial disclosures is crucial for both decision-making and information accessibility.

Readability is regarded as a reliable proxy for disclosure quality because it reflects how easily investors can process narrative information. It enables faster comprehension and improves comparability (Bonsall IV et al., 2017). Unlike alternative measures of disclosure quality, such as risk item counts, numeric-to-qualitative ratios, sentiment and tone analysis, or the forward- versus backward-looking orientation of text, readability directly captures the clarity and accessibility of disclosures (Hassan et al., 2022; Asay et al., 2017). This becomes particularly

important in emerging markets, where lower levels of financial literacy heighten misinterpretation risks and reduce the usefulness of complex narratives.

While earlier studies predominantly applied traditional readability indices such as Flesch-Kincaid Grade Level, SMOG Index, Gunning Fog Index, Coleman-Liau Index, and Automated Readability Index, Bonsall IV et al. (2017) introduced the BOG as a more accurate measure tailored to the context of business reporting. Likewise, the study of Panta and Panta (2023) argues that the BOG Index is a significant improvement on the Fog Index[6]. The BOG Index captures a broader range of plain English features and has since been increasingly adopted in empirical research. In the emerging market context, Tiwari and Chatterjee (2024) applied the BOG Index to annual reports, highlighting its relevance for assessing risk disclosure quality in India.

This study has used the computational linguistics software program *StyleWriter*—The Plain English Editor, which calculates the BOG Index, a comprehensive measure of readability. The BOG Index captures the plain English writing attributes recommended by linguistic experts and underscored in the SEC's Plain English Handbook (1998b).

The BOG Index is computed as the sum of three composite components:

$$BOG\_INDEX = Sentence\ Bog + Word\ Bog - Pep$$

Sentence BOG measures the extent to which a reader may become bogged down by sentence characteristics. Word BOG measures sentence length and word difficulty, whereas Pep counts the distinguishing characteristics of good writing, such as names, interesting words,

[6] Loughran and McDonald (2014) point out that business texts have a very high % of words that are labelled 'complex' by the Fog Index because they include three or moresyllables but are, in fact, well understood by the majority of investors & analysts (e.g., "depreciation," liability").

conversational expressions and the standard deviation of sentence length divided by the average sentence length (Bonsall IV et al., 2017). A higher BOG Index suggests less readable annual reports.

Model and Data Analysis

To assess the value relevance of risk disclosure quality for investors in the BFIs, this study estimated the model based on Ohlson's (1995) framework. This method has been applied in many prior empirical studies on the value relevance of disclosures (e.g. Giner et al., 2020; Elshandidy & Zeng, 2022). The following equation tests *H*:

$$P_{it} = a_0 + a_1 BVPS_{it} + a_2 EPS_{it} + a_3 BOG_{it} + a_4 Control_{it} \ldots\ldots + \sum_{i=1}^{n} Firm_{it} + \sum_{1=1}^{n} Year_{it} + \varepsilon_{it} \text{------(1)}$$

Where, P = share price at the end of fiscal years (Ashad end). In the literature related to value relevance of disclosures, the existing studies apply year-end price[7] (Menezes da Costa Neto et al., 2023; Giner et al., 2020; Elshandidy & Zeng, 2022). BOG is the risk disclosure readability score calculated using textual attributes of risk disclosure (see *Measurement of Risk Disclosure Quality Section*), and the remaining variables are controls (see *Table 2*). Our coefficient of interest is a_3. If higher risk disclosure quality (i.e., more readable disclosures, corresponding to a lower BOG score) is associated with higher stock price, i.e., investors reward firms that provide readable risk disclosures with higher market valuations reflected in stock price, we expect a_3 to be negative. This study incorporates year dummy variables to control for

[7] The fundamental assumption of a value-relevance study is that the information employed by investors when valuing a share will be reflected in the firm's share price (Barth et al., 2001). Value relevance can therefore be assessed in terms of equity price levels (i.e., price-level models). While the goal with a price levels approach is to assess what is incorporated in stock price at a particular moment (Barth 2006).

year-specific shocks. Firm fixed effects were included to account for unobservable firm characteristics that may simultaneously influence both stock price and risk disclosure quality. We used wild standard errors to account for heteroskedasticity and intra-cluster correlation across banks in classes A, B, and C, ensuring more reliable inference (Cameron et al., 2008).

Table 2

Variables Definition

Variable	Description
Dependent Variable	
P	Share price at the end of fiscal years
Independent Variables	
BOG	Measure of risk disclosure readability
Control Variables	
BVPS	Book value per share at the end of fiscal years
EPS	Earnings per share at the end of fiscal years
LnMCAP	Natural log of total market value of shares
ROE	Return on equity (profitability)
ASEQ	Assets to equity ratio (leverage)
COVID	COVID-19 dummy; 0 = pre, 1 = post
MERGER	M&A dummy; 1 = yes, 0 = no

Control variables, BVPS, EPS, LnMCAP, and ROE are included to account for fundamental financial performance and firm size; these are well-established determinants of stock prices (Barth et al., 1996). Higher EPS and BVPS typically signal stronger financial health, positively affecting market valuation (Giner et al., 2020). The leverage ratio ASEQ (Equity Multiplier) controls, as highly leveraged firms are viewed as riskier than their influence stock price (Huang & Zha, 2017). External factors such as dummy variables for COVID-19 and MERGER are incorporated to control for external shocks and strategic corporate actions that impact firm value. This comprehensive approach aligns with prior empirical research emphasising the importance of controlling for various factors to accurately assess the value relevance of risk disclosure (Barth et al., 1996; Li, 2008; Giner et al., 2020).

Endogeneity

A key methodological concern in this study is the endogeneity of disclosure quality, particularly BOG index and share price equation. Endogeneity comes when an explanatory variable is correlated with the regression error term. This correlation produces biased and inconsistent estimates (Tobin, 1958). In the context of risk disclosures, endogeneity arises from several sources.

First, omitted firm-level characteristics, such as managerial quality or strategic policies, may simultaneously influence both disclosure quality and firm share price. Second, simultaneity or reverse causality is a concern: better-performing firms often have greater resources and incentives to produce clearer, more comprehensive disclosures, making it difficult to establish the direction of causality. Finally, measurement errors in disclosure proxies, such as imperfectly captured readability, can correlate with the regression error term, further biasing OLS estimates.

To correct for this, the analysis applies two-stage least squares (2SLS) using industry–year median values of BOG as instruments. These instruments are relevant, being strongly correlated with firm-level BOG, and exogenous, since aggregation at the industry–year level minimises exposure to firm-specific pricing errors. They also meet the exclusion restriction, as their impact on stock price operates only through disclosure quality. This peer-benchmarking approach aligns with Elshandidy & Elsayed (2024), while Seo (2021) provides evidence that industry peers' disclosure practices shape a firm's voluntary reporting, further supporting instrument validity.

This study exploits exogenous variation in disclosure quality at the industry-year level. For each firm *i*, operating in industry *g (i.e., instrument based on peer firms $j \neq i$)* in year *t*, we construct the following instruments:

$$\text{ind\_BOG\_median}_{it} = Median_{j \neq i}(BOG_{jt} \mid Industry_j = Industy_i)$$

This study estimates the first-stage regressions to predict the endogenous variables using their respective instruments and control variables.

$$BOG_{it} = \pi_0 + \pi_1 \cdot industry\_\text{BOG}\_median_{it} + \pi' \cdot X_{it} + u_{it}$$

The study then estimates the Second-Stage Regression using the predicted (fitted) values from the first stage:

$$Price_{it} = \gamma_0 + \gamma_1 \widehat{BOG}_{it} + \gamma'.X_{it} + \eta_i + \lambda_t + \varepsilon$$

Where in both equations X_{it} include:

EPS_{it}, $BVPS_{it}$, ROE_{it}, $ASEQ_{it}$, LnMCAP_{it}, $COVID_{it}$

Alternative Measure of Readability

Previous studies in emerging nations have measured readability using indices such as the Flesch-Kincaid Grade Level, Coleman-Liau Index, Gunning Fog Index, SMOG Index, and Automated Readability Index (Gangadharan & Padmakumari, 2023; Toerien & Du Toit, 2024; Dhir & Singh, 2025). And these alternative indices are calculated using Python's NLTK library.

Table 3

Summary of Readability Indices and Interpretations

Readability index	**Readability formula**	**Description**
Flesch-Kincaid Grade Level	$= 0.39\left(\frac{total\ words}{total\ sentences}\right) + 11.8\left(\frac{total\ syllables}{total\ words}\right) - 15.59$	The Flesch–Kincaid Grade Level (FKG) indicator for report readability (Li, 2008) measures the no. of years of education generally needed to understand a report. Accordingly, the higher a report's FKG score, the more difficult it is to read. The Flesch–Kincaid formula gives the number of years of education that a reader has to understand the material; with 12 indicating school-level, 16 that a degree is required & 18 that a master's degree is required.
Gunning Fog	*= (Avg no of words + Complex words) ×0.4*,	Words are considered complex if they have three or more syllables. A typical text with a Fog index

		of 18 or higher shows it is unreadable, between 14 -18 difficult to read, between 12 - 14 ideals, between 10 -12 acceptable, and between 8 - 10 childish.
Flesch Reading Ease	*= 206.835 – (1.015 x words per sentence) – (84.6 x syllables per word)*,	The Flesch Index calculates text readability using a 100-point scale corresponding to U.S. grade-school levels. Flesch (1949) is measured as: higher levels of Flesch score indicate an easier-to-read text. A Flesch Reading Ease Score between 50–59 are considered *fairly difficult* and suitable for readers at the 10th to 12th-grade level. Scores between 30–49 indicate *difficult* texts appropriate for college-level readers (13th to 16th grade), while scores between 0–29 reflect *very confusing* content, best understood by college graduates.
Coleman Liau	*= 0.0588 * Average number of letters per 100 words) – 0.296 * (average no. of sentences per 100 words) – 15.8*	The Coleman–Liau Index uses constants: 0.0588 for letters, -0.296 for sentences, and a fixed 15.8 to align results with U.S. grade levels. Longer words make text harder, while more sentences improve readability. A score of 8.5 suggests the text suits students in grades 8 to 9.

SMOG	$=1.0430\sqrt{\left(30 \times \frac{Complex\ words}{Sentences}\right)} + 3.1291$	where complex words are words with 3 or more syllables (Mc Laughlin, 1969). The index estimates the education level required for a reader to fully understand a text; for instance, SMOG Grades 13–16 indicate that college-level education is needed (Mc Laughlin, 1969).
Automated Readability	$=-21.43 + (4.71 \times characters\ per\ word) + (0.5 \times words\ per\ sentence)$	Automated Readability Index: Average student of the grade can read the text. E.g., >13 – College – Very Difficult – 18–22 yrs. old; 12 – Twelfth grades – Difficult – 17–18 yrs. old.

CHAPTER IV

RESULTS

This chapter shows the empirical analysis of the quality and value relevance of risk disclosures by Nepalese BFIs. It is structured into six sections: (i) trend analysis of readability measures, (ii) descriptive statistics of variables, (iii) correlation among variables, (iv) regression results (v) results from the two-stage least squares (2SLS) approach, and (vi) alternative measures and robustness checks, including the Ln(Share Price) model, categorical readability groups, alternative readability indices, Principal Component Analysis (PCA), industry–year median change analysis, and within–industry–year decile ranking regression. Together, these analyses provide an extensive and robust assessment of the impact of disclosure readability on firm value.

Trend Analysis of Readability Measures

This section shows the results on the quality of risk disclosure, evaluated through readability metrics. Readability scores for Nepalese BFIs were derived through textual analysis, and the resulting measures are summarised below.

In table 4, the readability analysis indicates that the risk disclosures of Nepalese BFIs are difficult to read. The BOG Index ranges from 96.9 in 2024 to 104.8 in 2015, with an average of 98.6, which indicates poor readability. Bonsall and Miller (2017) note that scores between 71–100 are poor, and those above 100 are very poor.

Similar studies in emerging markets (including the SAARC region) report low readability because annual reports often use complex, formal, and regulatory language (Du et al., 2024;

Tiwari & Chatterjee, 2024). The BOG Index, which measures dense and bureaucratic writing, shows that scores between 60–140 are typical for financial reporting in South Asia. Reports above 120 are highly inaccessible, as they rely on passive voice, abstract nouns, and jargon, which limit stakeholder engagement (Bonsall & Miller, 2017).

Table 4

Trend Analysis of Readability Measures

Year	BOG	Fleschreading	Fleschgrade	Fog	Smog	Automatedindex	Colemanliau	totalwords
2011	99.09	22.89	15.75	15.55	17.33	16.59	14.86	1024.45
2012	99.75	24.51	15.48	15.25	17.19	16.39	14.74	1198.25
2013	99.93	23.54	15.94	15.53	17.53	17.03	14.79	1149.14
2014	102.08	21.95	16.11	15.63	17.71	17.17	15.14	1255.23
2015	104.75	20.32	16.35	15.27	17.98	17.54	15.56	1910.44
2016	100.29	22.85	15.76	14.97	17.47	16.95	15.37	1892.65
2017	97.88	23.47	15.54	14.65	17.41	16.78	15.42	2031.71
2018	99.84	22.73	16.13	14.30	17.82	17.62	15.32	3742.21
2019	97.85	23.23	15.88	14.59	17.61	17.11	15.14	2729.58
2020	97.65	23.34	15.93	14.82	17.77	17.37	15.30	2439.00
2021	98.19	23.09	16.01	14.86	17.74	17.41	15.23	2451.72
2022	97.61	23.44	15.99	14.81	17.76	17.49	15.26	2756.71
2023	97.78	22.68	16.11	14.87	17.85	17.61	15.35	2513.35
2024	96.85	21.89	16.20	14.65	17.90	17.76	15.55	2825.12
Overall	98.62	22.90	15.97	14.87	17.70	17.32	15.26	2374.79

Note. *Higher scores (except for Flesch Reading Ease) indicate less readable financial disclosures; lower scores reflect more readable ones.*

The Flesch Reading Ease score averages 22.9, firmly in the very difficult range (0–30), meaning disclosures are less readable to average readers, while the Flesch–Kincaid Grade Level (mean 15.97) suggests that postgraduate-level education is required for comprehension. Similarly, the Fog Index (mean 14.87) confirms the need for advanced literacy, and the SMOG Index (mean 17.7) reflects reliance on long, complex sentences and polysyllabic words, all of which reduce readability for ordinary investors. The Automated Readability Index (17.32) and Coleman–Liau Index (15.26) both point to graduate-level readability. Another measure of readability, Total Words (Miller, 2010), captures the overall length of each disclosure document. Reports contain around 2,375 words, reflecting the lengthy and detailed disclosures typical of financial reporting, reducing readability. These results indicate that risk disclosures are systematically designed in a highly technical manner, making them less readable.

Figure 2 *Trend of Average BOG Index Year-wise*

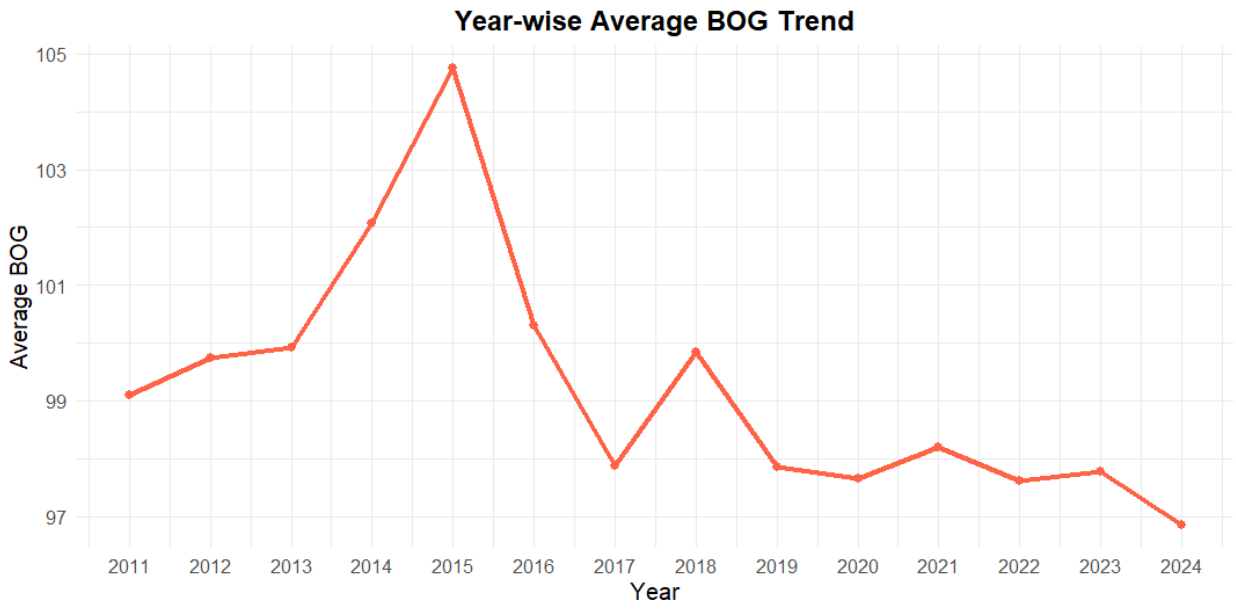


Figure 2 presents the trend of the average value of the BOG Index year-wise. Although the BOG Index has shown a declining trend over time, it is not yet an internationally accepted

standard (Bonsall & Miller, 2017). The declining BOG index over time suggests banks' risk disclosure writing improved due to learning-by-doing and greater experience, making reports easier to read. In emerging markets (including the SAARC region), previous studies have also found that scores between 60–140 are typical for financial reporting in South Asia (Du et al., 2024; Tiwari & Chatterjee, 2024).

Descriptive Statistics of Variables

Table 5

Descriptive Statistics of Variables

Variables	N	Mean	Median	Std. Dev.	CV	Skewness	Kurtosis	Min	Max
BOG	354	98.62	98.00	8.97	0.09	0.48	5.14	67.00	140.00
P	354	499.29	380.50	473.88	0.95	3.26	16.25	92.00	3600.00
EPS	354	19.41	17.31	17.62	0.91	1.20	7.66	-54.22	91.88
BVPS	354	154.96	146.00	47.73	0.31	1.09	5.86	17.00	375.00
ROE	354	0.10	0.11	0.14	1.41	-7.71	89.57	-1.72	0.33
LnMCAP	354	23.17	23.51	1.45	0.06	-0.72	3.00	18.94	25.96
ASEQ	354	8.93	9.21	3.11	0.35	-0.67	5.19	-7.82	18.16
Totalwords	354	2374.79	1429.50	2302.61	0.97	2.52	11.46	285.00	17565.00

Variable definitions are in Table 2

Descriptive statistics reported in Table 5 show that the mean readability score (BOG) is 98.62 (SD = 8.97). As interpreted by Bonsall and Miller (2017), such a high BOG score reflects poor[8]. Total words, captures the overall length of each disclosure document. On average, reports

[8] Bonsall and Miller (2017) show the following descriptions of the BOG index: "0–20 = Excellent; 21–40 = Good; 41–70 = Average; 71–100 = Poor; 101–130 = Bad; 131–1000 = Dreadful; 1000+ = Gobbledygook".

contain around 2374.79 words, reflecting lengthy and detailed disclosures typical of financial reporting. This shows the low readability of financial disclosures in emerging economies.

Market price per share has a mean of 499.29 but is widely dispersed (Std. Dev. = 473.88), ranging from 92 to 3,600. Similarly, firm performance variables show notable variation as well. EPS averages 19.41 (Std. Dev. = 17.62), with both negative values (-54.22) and very high positives (91.88), reflecting earnings volatility across firms. BVPS averages 154.96 with relatively lower dispersion (CV = 0.31), while ROE has a mean of 0.10 but exhibits extreme skewness (-7.71) and kurtosis (89.57), suggesting the presence of outliers with very poor.

Firm size indicators reveal stability with some dispersion. LnMCAP has a mean of 23.17 (median 23.51), showing modest variability (CV = 0.06). Similarly, asset-to-equity ratio (ASEQ) averages 8.93, with moderate dispersion (Std. Dev. = 3.11). The descriptive statistics highlight that textual features (readability) vary substantially across firms, while financial performance shows high dispersion.

Correlation Among Variables

In Table 6, the correlation matrix reports the pairwise relationships among the variables. BOG is positively correlated with firm performance measures, including EPS ($r = 0.132$, $p < 0.05$), BVPS ($r = 0.150$, $p < 0.01$), and ROE ($r = 0.115$, $p < 0.05$). These findings imply that more profitable and efficient firms tend to issue less readable disclosures, possibly due to the complexity of their operations or strategic communications aimed at sophisticated stakeholders. Market capitalisation (LnMCAP) also shows a strong positive correlation with BOG ($r = 0.232$, $p < 0.01$), reinforcing that larger firms tend to produce less accessible reports. The asset equity ratio (ASEQ) does not directly associate with BOG in simple correlation. The weak and

insignificant correlation between BOG and Price indicates no strong direct link. These relationships affected by other factors, and regression analysis better identify these connections.

Table 6

Pairwise Correlations

Variables	1	2	3	4	5	6	7
BOG (1)	1						
Price (2)	0.073	1					
EPS (3)	0.132**	0.663***	1				
BVPS (4)	0.150***	0.689***	0.786***	1			
ROE (5)	0.115**	0.264***	0.676***	0.476***	1		
ASEQ (6)	0.085	0.222***	0.369***	0.301***	0.160***	1	
LnMCAP (7)	0.232***	0.414***	0.484***	0.599***	0.327***	0.515***	1

Notes: *Superscripts indicate significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.*

Regression Results

In Table 7, Model I shows that the coefficients on EPS and BVPS are positive and statistically significant, underscoring their value relevance in firm valuation. Specifically, the positive and statistically significant coefficient for EPS (coef. = 4.277, SE= 2.264, $p < 0.1$) indicates that higher profitability is associated with higher stock prices, reflecting the importance of earnings as a key driver of market valuation. Similarly, the coefficient for BVPS (coef. = 6.633, SE= 0.310, $p < 0.01$) demonstrates that firms with higher book values tend to be valued more highly, aligning with traditional valuation models that link a firm's asset base to its market value. These results confirm that EPS and BVPS are key fundamental indicators investors use in valuation, supporting the Ohlson (1995) framework on the informational content of these metrics.

Table 7

Regression Results

Variables	Share Price		
	Model I	Model II	Model III
BOG			-5.666 (1.418)***
EPS	4.277 (2.264)*	0.269 (0.695)	0.249 (0.788)
BVPS	6.633 (0.310)***	6.389 (0.367)***	6.472 (0.458)***
ROE		297.304 (151.115)**	309.321 (160.669)*
ASEQ		58.315 (17.066)***	56.399 (16.566)***
LnMCAP		211.814 (1.493)***	215.026 (2.653)***
COVID		-91.445 (20.750)***	-97.444 (18.910)***
MERGER		-94.667 (16.675)***	-124.108 (32.180)***
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
R^2	0.32	0.49	0.51
N	354	354	354

*Notes: Wild cluster SEs (in parentheses) are computed by resampling residuals at the industry (ABC-class banks) level with 1,000 replications. *p < 0.1, **p < 0.05, **p < 0.01. Variable definitions are in Table 2*

Model II examines the determinants of stock prices, revealing that while EPS has a non-significant impact (coef. = 0.269, SE= 0.695, p > 0.1) when controlling for other variables, BVPS exerts a strong, highly significant positive effect (coef. = 6.389, SE = 0.367, p < 0.01). Return on equity (ROE), asset equity ratio (ASEQ), and log market capitalization (LnMCAP) are also significant positive predictors, with coefficients of 297.304, 58.315, and 211.814

respectively (all $p < 0.05$ or $p < 0.01$), indicating they substantially influence stock prices. Conversely, macroeconomic factors such as COVID-19 and mergers negatively impact stock prices, with coefficients of -91.445 and -94.667 (both $p < 0.01$). The model explains approximately 49% of the variation in stock prices ($R^2 = 0.49$) across 354 observations, incorporating fixed effects for firms and years to control for unobserved heterogeneity. BVPS, ROE, asset size, and macro factors play significant roles in determining stock performance. In contrast, EPS shows a weaker influence once these additional variables are included.

In Model III, our main variable of interest, BOG, shows a significant effect on stock prices, with a coefficient of -5.666 (SE=1.418, $p < 0.01$). This negative relationship underscores that less readable disclosures substantially reduce stock prices. BVPS shows a positive and significant effect with a coefficient of 6.472 (SE = 0.458, $p < 0.01$), consistent with prior models and underscoring its role as a critical determinant. Additional variables such as ROE (positive, e.g., coef. = 309.321, SE= 160.669, $p < 0.1$), ASEQ (coef. = 56.399, SE=16.566, $p < 0.01$), and macro factors like COVID and Merger events maintain their expected influences, indicating their robustness across different model specifications. The model's explanatory power slightly improves, with an R-squared of 0.51, suggesting that over half of the variation in stock prices is captured by these variables, reinforcing their collective importance in the analysis.

Result from Two-Stage Least Squares (2SLS) Estimation

The 2SLS estimates reported in Table 8 show that the coefficient on BOG continues showing negative and statistically significant (coef. = –38.57, SE=16.794, $p < 0.05$), confirming that lower readability (higher BOG values) is associated with lower share prices, even after correcting for endogeneity. EPS and BVPS show a strong positive impact on share price. In contrast, ROE shows a significant negative effect on share price. The COVID dummy is negative

but not significant, suggesting limited incremental influence of pandemic effects beyond firm controls.

Table 8

Two-Stage Least Squares (2SLS) Estimates

Variables	Coefficient (SE)
BOG	-38.573(16.794)**
EPS	14.154(3.077)***
BVPS	3.896(0.942)***
ROE	-940.265(238.325)***
ASEQ	-17.431(9.639)*
LnMCAP	76.716(34.6)**
COVID	-98.824(64.552)
N	354
Firm FE and Time FE	Yes
Model Fit & Diagnostics	
R^2	0.115
Adjusted R^2	0.097
Residual SE	450.2 (df = 346)
Wald $\chi^2(7)$	32.39, $p < 0.001$
Weak Instruments (F-stat)	9.65, p = 0.002 **
Wu–Hausman Endogeneity Test	$\chi^2(1) = 10.36$, p = 0.001 **

*Note: The single-equation 2SLS (ivreg) with full diagnostics. Superscripts ****, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Sargan Overidentification Test: Not applicable (only one instrumental variable)*

The first-stage F-statistic of 9.65 (p = 0.002) is very close to the conventional Staiger and Stock (1994) rule-of-thumb threshold of 10. The instrument demonstrates strong relevance, as evidenced by its highly significant association with the endogenous regressor. The Wu–Hausman test indicates significant endogeneity ($\chi^2 = 10.36$, p = 0.001), thereby justifying the IV approach over OLS. As the model is exactly identified, overidentification tests are not applicable; however, the instrument remains credible since industry-level median readability captures exogenous variation in disclosure practices, independent of firm-specific factors. These findings support a causal link between lower disclosure readability and lower share prices. They also highlight the importance of addressing endogeneity when assessing the effects of disclosure.

Robustness Checks

This study employs several robustness checks, including the Ln(Share Price) model, categorical readability groups, alternative readability indices, Principal Component Analysis (PCA), industry–year median change analysis, and within–industry–year decile ranking regression. Collectively, these approaches confirm that the association between lower disclosure readability and firm valuation is robust across different measures and model specifications.

1. LnShare Price As Dependent Variable

The natural logarithm of share price is used as the dependent variable to reduce skewness, mitigate outliers, and ensure a more normal distribution. Log transformation also enables percentage-based interpretation of coefficients, enhancing economic meaning (Wooldridge, 2010).

In Table 9, the natural logarithm of share price (LnShare Price) is used as the dependent variable in the alternative model. The coefficient for BOG remains negative (-0.002) and

statistically significant at the 1% level, indicating that poorer readability of risk disclosures is associated with an approximately 0.2% decrease in share price, consistent with the prior interpretation. While BVPS, ROE, ASEQ, LnMCAP, and COVID have positive and significant relationships with share price, Mergers remain negatively significant, and EPS remains insignificant. The model's R-squared of 0.65 indicates that a substantial proportion of the variation in share prices is explained by these variables, emphasising their relevance in explaining market valuation.

Table 9

Regression Results Using LnShare Price as Dependent Variable

Variables	Coefficient (SE)
BOG	-0.002 (0.001)***
EPS	0.002 (0.002)
BVPS	0.003 (0.000)***
ROE	0.731 (0.350)**
ASEQ	0.090 (0.024)***
LnMCAP	0.570 (0.070)***
COVID	0.112 (0.047)**
MERGER	-323(0.049)***
Firm FE	Yes
Year FE	Yes
R^2	0.65
N	354

*Notes: Wild cluster SEs (in parentheses) are computed by resampling residuals at the industry (ABC-class banks) level with 1,000 replications. *p < 0.1, **p < 0.05, **p < 0.01. Variable definitions are in Table 2*

2. *Using the Category of Readability Score*

To examine the effect of disclosure readability on stock prices, we classify firms into Low, Medium, and High readability groups based on the BOG Index.

Let $BOG_{i,t}$ denote the BOG Index score for the bank i in year t. Define:

$$Q_{50} = Median(\{BOG_{i,t}\}) \qquad Q_{75} = 75th\ percentile(\{BOG_{i,t}\})$$

Here, Q_{50} represents the median readability score, while Q_{75} marks the upper quartile threshold.

Using these thresholds, we construct indicator variables:

$$Median_{i,t} = \begin{cases} 1, & Q_{50} \le BOG_{i,t} < Q_{75}, \\ 0, & otherwise, \end{cases} \quad High_{i,t} = \begin{cases} 1, & BOG_{i,t} \ge Q_{75}, \\ 0, & otherwise, \end{cases}$$

Firms with $BOG_{i,t} < \ Q_{50}$ fall into the Low BOG score category, which serves as the baseline group in our regression analysis.

We estimate the following two-way fixed effects panel regression:

$$P_{i,t} = \alpha + \beta_{Med} Medium_{i,t} + \beta_{High} High_{i,t} + \gamma_1 EPS_{i,t} + \gamma_2 BVPS_{i,t} + \gamma_3 ROE_{i,t} + \gamma_4 ASEQ_{i,t} + \gamma_5 LnMCAP_{i,t} + \gamma_6 COVID_{i,t} + \gamma_7 MERGER_{i,t} + \eta_i + \lambda_t + \varepsilon$$

We expect β_{Med} to be negative. This coefficient measures how stock prices respond to moderately unreadable (Medium BOG) risk disclosures relative to the baseline group of Low BOG (most readable) reports. Similarly, β_{High} captures the effect of highly unreadable (High BOG) risk disclosures on stock prices. Given that more unreadable disclosures reduce

transparency, we expect β_{High} to be negative and larger in magnitude than β_{Med}, indicating a stronger adverse effect on stock prices.

Table 10

Regression Results Using Categorical Readability

Variables	Coefficient (SE)
BOG _Medium	-62.238 (44.538)
BOG _High	-142.445 (58.495)**
EPS	0.071 (3.703)
BVPS	6.482 (1.935)***
ROE	296.058 (263.542)
ASEQ	55.381 (20.482)***
LnMCAP	218.995 (37.801)***
COVID	-117.535 (59.784)*
MERGER	-106.646 (68.975)
Firm FE	Yes
Year FE	Yes
R^2	0.508
N	354

*Notes: *p < 0.1, **p < 0.05,* ***p < 0.01. *Variable definitions are in Table 2*

In Table 10, the regression results indicate a strong negative association between low disclosure readability and firm valuation. The BOG Index, categorized into Low, Medium, and High readability groups, shows that firms falling into the High BOG group (i.e., BOG

Index ≥ 75th percentile), indicative of the lowest readability, experience a statistically significant decline in stock price by approximately NPR 142 ($p < 0.05$) relative to firms with Low BOG scores (below median). This implies that when annual reports are harder to read, investors respond negatively, likely due to increased information processing costs and reduced transparency. The Medium BOG group also shows negative coefficients, though they are not statistically significant. This suggests that moderate declines in readability may not affect investor perception unless obfuscation reaches a higher threshold.

3. Alternative Measure of Readability \

In Table 11, the fixed-effects regressions examine how different readability measures influence share price. As expected, higher readability scores, such as Flesch Reading, are associated with higher stock prices. The Flesch Reading score has a positive coefficient of 6.951, indicating that easier-to-read disclosures are linked to higher share price, and this effect is highly significant at the 1% level. In contrast, measures that capture textual complexity, such as Flesch Grade (coef. = -29.113, SE= 9.019, $p < 0.01$), Fog (coef. = -26.283, SE= 7.114, $p < 0.01$), Smog (coef. = -39.573, SE= 13.779, $p < 0.01$), Automated Index (coef. = -23.034, SE= 10.5, $p < 0.05$), and Coleman-Liau (coef. = -50.797, SE = 5.871, $p < 0.01$), all have negative coefficients, suggesting that less readable disclosures reduce share price. Most of these negative effects are statistically significant at the 1% level, while the Automated Index is significant at the 5% level. The significance levels across all measures demonstrate that the relationship between readability and share price is robust, with easier-to-read disclosures generally associated with higher stock price, while difficult-to-read text tends to depress stock price.

Table 11

Regression Results Using Alternative Readability Measures

Variables	Fleschreading	Fleschgrade	Fog	Smog	Automated	Colemanliau
	6.951	-29.113	-26.283	-39.573	-23.034	-50.797
Readability	(0.993)***	(9.019)***	(7.114)***	(13.779)***	(10.5)**	(5.871)***
EPS	-0.152 (0.617)	-0.077 (0.701)	0.023 (0.729)	-0.118 (0.808)	0.059 (0.738)	-0.062 (0.74)
	6.332	6.348	6.467	6.311	6.306	6.164
BVPS	(0.352)***	(0.399)***	(0.485)***	(0.392)***	(0.396)***	(0.343)***
	308.286	297.75	276.695	303.303	291.205	316.347
ROE	(139.152)**	(134.739)**	(122.241)**	(143.23)**	(131.423)**	(161.737)*
	57.25	56.799	55.996	56.584	56.675	57.254
ASEQ	(17.223)***	(16.785)***	(16.594)***	(17.098)***	(17.287)***	(18.063)***
	213.613	217.269	215.039	217.899	219.176	213.87
LnMCAP	(3.422)***	(4.431)***	(2.615)***	(4.569)***	(5.145)***	(3.435)***
	-84.538	-77.876	-96.248	-90.68	-79.657	-94.848
COVID	(22.659)***	(25.6)***	(20.909)***	(20.768)***	(26.76)***	(20.581)***
	-115.101	-116.2	-112.349	-121.206	-115.015	-111.19
MERGER	(26.666)***	(34.588)***	(32.674)***	(36.613)***	(37.456)***	(23.999)***
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.499	0.497	0.496	0.499	0.496	0.499
N	354	354	354	354	354	354

*Notes: Wild cluster SEs (in parentheses) are computed by resampling residuals at the industry (ABC-class banks) level with 1,000 replications. *p < 0.1, **p < 0.05, ***p < 0.01. All calculation processes for the readability indices are reported in Table 3.*

4. Principal Component Analysis of Readability Scores

This study employed seven readability measures: the BOG Index, Gunning Fog Index, Flesch Reading Ease (FRE), SMOG Index, Flesch-Kincaid Grade Level (FKG), Colemanliau

and Automated Readability Index. To ensure consistency across indices, where higher values indicate lower readability, FRE scores were reversed.

$$FRE_{reversed} = -1 \times Flesch\ Reading\ Ease$$

All measures were standardized (z-scores) to ensure comparability. Sampling adequacy and intercorrelations were verified using the Kaiser-Meyer-Olkin (KMO) test & Bartlett's Test of Sphericity (Hair et al., 2018; Field et al., 2012). The variable Colemanliau was removed due to a low KMO (0.197), increasing the overall KMO to 0.761, while Bartlett's test confirmed significant correlations ($\chi^2 = 3241.811$, $df = 15$, $p < 0.001$). Principal Component Analysis (PCA) on the readability metrics shows that the first component (PC1) accounts for 73.7% of the variance, representing overall readability difficulty. Together, PC1 and PC2 capture 90.5% of the total variance, effectively reducing dimensionality (Jolliffe, 2011).

The loadings show that Flesch-Kincaid Grade Level (0.471), SMOG Index (0.463), and Automated Readability Index (0.450) contribute most strongly, while BOG Index contributes least (0.156). Higher PC1 scores correspond to reports that are harder to read, reflecting the combined influence of multiple readability measures on overall textual difficulty.

The second principal component (PC2) explains 16.82% of the total variance and captures variation among individual readability metrics not reflected in PC1. It is primarily dominated by the BOG Index (-0.925), with smaller contributions from other measures such as Gunning Fog Index (0.270) and Automated Readability Index (0.174). PC2 therefore represents metric-specific differences, and higher positive or negative scores indicate divergences in particular readability measures relative to the general readability captured by PC1.

Table 12

Regression Results Using Principal Component Score of Readability

Variables	Coefficient (SE)
PC1	-21.779 (8.728)**
PC2	35.169 (22.152)
EPS	-0.027 (3.734)
BVPS	6.400 (1.846)***
ROE	310.684 (255.943)
ASEQ	55.976 (20.502)***
LnMCAP	217.103 (40.193)***
COVID	-89.485 (63.432)
MERGER	-131.775 (74.069)*
Firm FE	Yes
Year FE	Yes
R^2	0.508
N	354

*Note: *p < 0.1, **p < 0.05, ****p < 0.01. *Variable definitions are in Table 2*

Table 12 reports fixed-effects regression results using PC1 and PC2 scores as predictors of the dependent variable (e.g., share price). The coefficient for PC1 is negative and statistically significant (coef. = -21.779, SE = 8.728, $p < 0.01$), indicating that overall less readability of disclosures is associated with lower dependent variable outcomes (i.e stock price). In contrast, PC2, representing divergence among individual readability measures, is positive but not

statistically significant (coef. = 35.169, SE = 22.152, p > 0.1), suggesting that metric-specific variation does not meaningfully influence the stock price in this sample.

Among control variables, BVPS (coef. = 6.400, SE = 1.846, p < 0.01), assets-equity ratio (ASEQ) (coef. = 55.976, SE = 20.502, p < 0.01), and market capitalization (LnMCAP, coef. = 217.103, SE = 40.193, p < 0.01) are positively associated with the outcome, while merger events negatively affect it (coef. = -131.775, SE = 74.069, p < 0.05). COVID-19 events show a negative but insignificant effect (coef. = -89.485, SE = 63.432). The model explains 50.8% of the within-firm variance ($R^2 = 0.508$) and includes firm and year fixed effects, confirming that the PCA-based readability scores provide a meaningful summary of textual readability in explaining the outcome while controlling for firm-level heterogeneity and time effects.

5. *Change Analysis Using Industry-Year Median*

Consistent with prior research (Elshandidy & Elsayed, 2024; Kravet & Muslu, 2013; Elshandidy & Shrives, 2016), this study employs an alternative measure: Change Analysis Using Industry–Year Medians. This approach addresses potential endogeneity by capturing a firm's performance relative to its industry-year peers. In this approach, changes are defined as the differences between a firm's observed value and the median value for other financial firms in the same industry-year, mitigating firm-specific biases and time-invariant unobserved effects.

The delta transformation is applied to all variables and defined as:

$$\Delta X_{i,j,t} = X_{i,j,t} - Median(X_{j,t})$$

$X_{i,j,t}$= observed value for firm i in industry j at time t

Median ($X_{j,t}$)= median of all firms in industry j in time t

$\Delta X_{i,j,t}$ =the deviation (change) of the firm's value from the industry–year benchmark

$$\Delta P_{i,j,t} = \beta_1 \Delta BOG_{i,j,t} + \beta_2 \Delta EPS_{i,j,t} + \beta_3 \Delta BVPS_{i,j,t} + \beta_4 \Delta ROE_{i,j,t} + \beta_5 \Delta ASEQ_{i,j,t} + \beta_6 \Delta LnMCAP_{i,j,t} + \beta_7 \Delta COVID_{i,j,t} + \beta_8 \Delta MERGER_{i,j,t} + \alpha_i + \lambda_t + \varepsilon_{i,j,t}$$

Table 13

Regression Results Using Delta Change Method

Variables	Coefficient (SE)
ΔBOG	-6.024 (2.169)***
ΔEPS	1.072 (3.842)
$\Delta BVPS$	6.486 (1.906)***
ΔROE	259.568 (253.894)
$\Delta ASEQ$	53.242 (19.621)***
ΔLnMCAP	176.632 (50.049)***
$\Delta COVID$	-81.186 (66.504)
ΔMERGER	-130.397 (44.842)***
Firm FE	Yes
Year FE	Yes
R^2	0.466
N	354

*Note: *p < 0.1, **p < 0.05,* ***p < 0.01. *Variable definitions are in Table 2*

The regression results highlight the critical role of disclosure readability in stock prices. Specifically, a one-unit increase in a firm's BOG index relative to the industry-year median, indicating less readability, is associated with a 6.024-point decrease in stock price change ($p < 0.01$). This negative effect suggests that investors penalize firms whose disclosures are less

readable than peers, even after controlling for firm fundamentals and time and firm-specific effects.

Relative improvements in key accounting and financial metrics also significantly affect stock price changes. Firms with higher BVPS (ΔBVPS = 6.486, SE= 1.906, $p < 0.01$), highly levered (ΔASEQ = 53.242, SE=19.621, $p < 0.01$), and larger market capitalization (ΔLnMCAP = 176.632, SE = 50.049, $p < 0.01$) compared with the industry-year median experience positive stock price changes. In contrast, deviations in EPS and ROE relative to peers are not statistically significant, indicating that the market may place less weight on these measures once disclosure quality and industry-relative effects are considered.

The analysis also reveals that mergers have a strong negative impact on stock price changes (ΔMERGER = −130.397, SE=44.842, $p < 0.01$), suggesting that investors perceive merger activity as potentially risky or value-dilutive relative to peers. Relative exposure to COVID-19 shows a negative but statistically insignificant effect, indicating limited market reaction in this context. The model explains a substantial portion of the variation in relative stock price changes ($R^2 = 0.466$), capturing both the influence of disclosure quality and the relative performance of firm fundamentals. These findings emphasize the importance of relative disclosures and key fundamentals in stock prices in the BFIs.

6. Within–Industry–Year Decile Ranking Regression

The within–industry–year decile ranking of the Bog index is employed to ensure that readability scores are comparable across firms and over time while addressing potential biases stemming from differences in scale and distribution. A, B and C class BFIs inherently produce risk disclosures with varying levels of readability, meaning that raw BOG scores may reflect industry-specific reporting styles rather than true firm-level disclosure quality. Ranking each

firm's BOG score relative to its industry peers in the same year and converting these ranks into percentiles and deciles, the approach captures a firm's relative disclosure readability in a standardized and interpretable manner. This method also mitigates the influence of extreme values, reducing sensitivity to outliers, and enables meaningful interpretation, such as identifying firms that fall within the top decile of least readable disclosures within their respective industry-year cohort.

For firm i in industry j and year t with BOG index $Bog_{i,j,t}$

Rank within each industry–year group

$R_{i,j,t} = rank(BOG_{i,j,t}),$ $N_{j,t} = number\ of\ firms\ in\ industry\ j\ during\ year\ t$

Convert to a percentile

$$P_{i,j,t} = \begin{cases} 0, & if\ N_{j,t} = 1 \\ 100 \times \dfrac{R_{i,j,t} - 1}{N_{j,t} - 1}, & if\ N_{j,t} > 1. \end{cases}$$

Convert to decile

$DECILE_{i,j,t} = \left\lceil \frac{P_{i,j,t}}{10} \right\rceil,\ DECILE_{i,j,t} = \in \{1,2 \ldots.,10\}.$

Final Regression Equation (with controls)

$$P_{i,t} = \alpha + \beta DECILE\_BOG_{i,j,t} + \gamma_1 EPS_{i,t} + \gamma_2 BVPS_{i,t} + \gamma_3 ROE_{i,t} + \gamma_4 ASEQ_{i,t} + \gamma_5 LnMCAP_{i,t} + \gamma_6 COVID_{i,t} + \gamma_7 MERGER_{i,t} + \eta_i + \lambda_t + \varepsilon$$

Table 14 reports fixed effects estimate of the impact of disclosure readability, measured by the within–industry–year decile of the Bog index, on Share price. The coefficient on

DECILE_ BOG is -17.107 (SE = 7.564, $p < 0.05$), indicating that a one-decile increase in the BOG index is associated with a Rs. 17.107 decline in share price, controlling for other factors. This finding suggests that less readable risk disclosures negatively affect stock price, consistent with the idea that readable disclosures improve investor understanding.

Table 14

Regression Results Using Within–Industry–Year Decile of BOG Index

Variables	Coefficient (SE)
DECILE_ BOG	-17.107 (7.564)**
EPS	4.127 (4.139)
BVPS	6.296 (2.544)**
ROE	254.063 (301.789)
ASEQ	54.991 (13.715)***
LnMCAP	249.227 (32.070)***
COVID	-289.117 (76.279)***
MERGER	-287.550 (53.386)***
Firm FE	Yes
Year FE	Yes
R^2	0.574
N	354

*Note: *p < 0.1, **p < 0.05, ***p < 0.01. Variable definitions are in Table 2*

Among the control variables, BVPS (coef. = 6.296, SE = 2.544, $p < 0.05$), ASEQ (coef. = 54.991, SE = 13.715, $p < 0.01$), and LnMCAP (coef. = 249.227, SE = 32.070, $p < 0.01$) are positively and significantly associated with stock price, indicating that larger firms, highly

leveraged, those with higher equity, and greater market capitalisation tend to exhibit higher valuations. Conversely, COVID (coef. = -289.117, SE = 76.279, $p < 0.01$) and MERGER (coef. = -287.550, SE = 53.386, $p < 0.01$) show significant negative effects, reflecting the adverse market impacts of pandemic-related uncertainty and merger activity during the sample period. Other controls, such as EPS (coef. = 4.127, SE = 4.139) and ROE (coef. = 254.063, SE = 301.789), are not statistically significant in this specification.

CHAPTER V

DISCUSSIONS AND CONCLUSIONS

Discussion

This study addresses the call from previous research (e.g., Sharma, 2013; Giri, 2020; Giner et al., 2020) to examine the value relevance of risk disclosures. Although the implementation of risk disclosure standards is anticipated to enhance readability (Nepal Rastra Bank, 2010), it will also strengthen the influence of risk disclosures on firm valuation. Empirical evidence remains inconclusive, as compliance with mandatory disclosures does not necessarily guarantee quality or improve firm value (Hellman et al., 2018). Similarly, most prior studies have examined either the extent of risk-related information disclosed (Martínez et al., 2014; Elshandidy, 2014; Giner et al., 2020; Abdullah et al., 2015) or the content and tone of disclosures, which influence firm value (Elshandidy & Zeng, 2022; El-Deeb et al., 2022; Wang & Hussainey, 2013). While research in developed economies is extensive (Veltri et al., 2020; Shan & Troshani, 2021; Reitmaier & Schultze, 2017), findings from emerging markets remain mixed (Menezes da Costa Neto et al., 2023). However, none of the studies directly address the value relevance of risk disclosure readability. This study provides valuable empirical evidence on the value relevance of risk disclosure readability.

The findings of this study demonstrate that the readability of risk disclosures is a key determinant of market valuation in Nepalese BFIs. Readable disclosures were positively associated with firm value, confirming the study's hypothesis (*H*) and supporting prior arguments on the economic significance of readability in corporate communication (Hassan et al., 2022; Miller, 2010; De Franco et al., 2015). By contrast, disclosures with lower readability have been found to erode investor confidence and weaken stock market responses. This aligns

with similar evidence that less readable or opaque reports reduce trading activity, particularly among small investors (Miller, 2010; Saleeb Agaiby Bakhiet, 2024), diminish the precision of analysts' forecasts (Elzahar et al., 2015), and limit the incorporation of firm-specific information into prices (Bai et al., 2019). These effects are especially prominent in emerging markets, where weaker institutional safeguards amplify the consequences of low-quality disclosures (Stubbs & Higgins, 2018). Econometric analyses using fixed-effects regressions, instrumental variable approaches and other robustness tests consistently showed a negative relationship between poor readability and firm valuation. For example, instrumental variable results indicated that a one-unit increase in the BOG Index (reflecting lower readability) reduced share prices by (approx.) NPR 38.57. These findings align with prior studies (Asay et al., 2017; Bai et al., 2019). In Nepal, where financial literacy is low (*57.9%*), the adverse effects of unreadable disclosures are amplified, highlighting the need for readable disclosures to strengthen investor confidence, market efficiency, and reduce information asymmetry. The findings show that regulatory compliance alone does not ensure high-quality disclosures; the value of risk communication depends on narrative qualities, particularly readability. Similar to other emerging markets (Stubbs & Higgins, 2018; Baboukardos & Rimmel, 2016; Tiwari & Chatterjee, 2024), Nepalese BFIs often have less readable reports, limiting their usefulness. This shows the importance of moving beyond mere compliance toward clear, stakeholder-oriented reporting.

The findings also provide theoretical support for PAT (Watts & Zimmerman, 1986), Agency Theory (Jensen & Meckling, 1976), and information asymmetry frameworks (Akerlof, 1970). Specifically, the evidence indicates that lower readability in risk disclosures limits investors' ability to evaluate firm-specific risks, thereby decreasing stock price. These findings support prior research demonstrating that readable disclosures ease cognitive burdens, enable

firm-specific information incorporation, and positively influence share prices (Bai et al., 2019; De Franco et al., 2015; Lehavy et al., 2011; Miller, 2010). Conversely, less-readable disclosures increase information asymmetry and the risk of stock price crashes (Saleeb Agaiby Bakhiet, 2024), while more readable reports enhance informational efficiency and stock prices, as observed in Nepalese BFIs and other emerging markets (Hesarzadeh & Rajabalizadeh, 2019; Gangadharan & Padmakumari, 2023).

Consistent with Loughran and McDonald (2014), longer disclosures tend to be less readable. This can limit comprehension in emerging markets, where investor literacy varies widely. Similar findings with Bushee et al. (2010) more profitable firms, reflected in higher EPS, BVPS, and ROE, often issue less readable reports, suggesting strategic obfuscation to manage investor expectations. Firm size is positively associated with lower readability, as larger firms often deal with more complex operations and a broader range of stakeholders. They may also employ more sophisticated language either to project credibility or to strategically obscure information (Panta & Panta, 2023).

The trend analysis of textual features indicates that Nepalese BFIs' risk disclosures are generally less readable and difficult to read. Average BOG Index scores exceeding 98 fall within the "*poor*" readability category (Bonsall & Miller, 2017), while complementary measures such as the Flesch-Kincaid Grade Level and SMOG index confirm that these texts often demand postgraduate-level comprehension. Such lower readability substantially limits accessibility for retail investors, thereby exacerbating information asymmetry as highlighted in agency theory (Jensen & Meckling, 1976). This finding is consistent with prior evidence from emerging markets, particularly in the SAARC region, where annual reports have been shown to exhibit low readability due to reliance on formal, technical, and regulatory language (Tiwari & Chatterjee,

2024; Du et al., 2024). Moreover, field evaluations of the *StyleWriter* BOG Index suggest that scores between 60 and 140 are typical for financial reports in South Asia, with scores above 120 denoting highly inaccessible texts characterised by passive constructions, abstract nouns, and jargon (Bonsall IV et al., 2017). Hence, the consistently high BOG scores observed in Nepalese BFIs align with broader regional patterns of poor readability and underscore how disclosure practices may impede effective stakeholder engagement.

Robustness checks, consistent with prior (Elshandidy & Elsayed, 2024; Kravet & Muslu, 2013; Elshandidy & Shrives, 2016) , confirm that lower disclosure readability systematically reduces stock prices. The log-transformed model shows that poorer readability lowers prices, while categorical analysis reveals significant penalties for firms in the highest BOG quartile, with moderate reductions having limited impact. Alternative readability indices, PCA, industry–year median changes, and within–industry–year decile rankings all consistently show that less readable disclosures depress stock prices. Collectively, these approaches demonstrate the robustness of the readability–valuation relationship across measures, models, and designs, highlighting the economic importance of readable disclosures in Nepalese BFIs.

Finally, the contribution of this study lies not only in confirming previous evidence but also in contextualizing it within Nepal's unique institutional and regulatory environment. Unlike mature markets, Nepal's banking sector is characterised by weaker enforcement mechanisms, heterogeneous investor literacy, and evolving disclosure standards (Nepal Rastra Bank, 2023). These conditions amplify the significance of readability, such that even modest improvements in clarity yield disproportionately positive valuation effects. Hence, while prior research has broadly established the role of readability in reducing asymmetry (Li, 2008; Bonsall & Miller,

2017), this study advances theory by demonstrating how readability interacts with institutional capacity and investor sophistication in an emerging economy.

Conclusion

This study makes a significant contribution to the understanding of how textual features of risk disclosures influence stock price within the context of an emerging economy Nepal. The core finding shows that improved readability increases stock price. This aligns with literature from developed markets, highlighting that transparency and clarity are universally valued (Li, 2008; Giner et al., 2020). The empirical evidence presented herein demonstrates that less readable disclosures, characterized by high BOG Index scores, are systematically associated with lower share prices, indicating that investors penalize opacity and favor straightforward communication.

The study extends the theoretical underpinnings of agency theory and PAT by illustrating that managerial incentives and strategic obfuscation significantly influence the linguistic quality of risk disclosures (Jensen & Meckling, 1976; Watts & Zimmerman, 1986). Managers often prioritize regulatory compliance over clarity, producing dense, jargon-laden reports that hinder stakeholder understanding and exacerbate information asymmetry in Nepal's emerging regulatory environment. These findings underscore that enhancing transparency and investor confidence requires moving beyond mere compliance towards more readable and stakeholder-focused disclosures.

Methodologically, the application of multiple textual indices, PCA, industry-year decile rankings, and instrumental variable techniques provides a robust framework for assessing the causal impact of disclosure quality on valuation. The consistent negative effect of readability

scores across models underscores that linguistic clarity is a cost-effective, high-impact lever for improving market efficiency. These results echo prior findings from developed economies, such as the work of Li (2008) and Giner et al. (2020), but also highlight the unique challenges faced by emerging markets where regulatory enforcement and financial literacy are often limited (Sharma, 2013; Giri, 2020).

The policy implications of this research are significant. Regulators, such as the NRB, should introduce clear readability standards for disclosures. Firms should be encouraged to produce risk disclosures that are easy for all stakeholders to understand. Reforms could include plain language guidelines, minimum readability scores, and initiatives to engage stakeholders. Moreover, investor education programs can play a pivotal role in enhancing financial literacy. By improving stakeholders' ability to interpret disclosures, such initiatives help reduce the adverse effects of opacity.

From a managerial perspective, the findings emphasize that transparency is a strategic asset. Firms that prioritize clear and comprehensible risk communication are more likely to foster investor confidence and reduce perceived risk premiums. In turn, this can contribute to enhanced market liquidity (Li, 2008; Giner et al., 2020; Boubaker et al., 2019). The positive association between firm size, profitability, and less readable disclosures indicates that larger or more successful firms may use hard-to-read disclosures to project sophistication. However, this strategy can backfire if it undermines stakeholder trust. Therefore, firms should recognize that simplicity and transparency are not disadvantages but opportunities for differentiation and reputation building.

Despite the comprehensive methodological approach employed in this study, several limitations should be acknowledged. Firstly, the reliance on textual indices such as the BOG

Index may not fully capture the interpretive aspects of risk disclosures. Tone, framing, or stakeholder-specific understanding are critical for assessing disclosure quality (Beattie, 2014; Elshandidy & Zeng, 2022). Additionally, the indices are inherently objective measures and may overlook contextual factors influencing readability, such as cultural language differences or the use of idiomatic expressions (Stubbs & Higgins, 2018), particularly in emerging markets like Nepal. The cross-sectional and longitudinal analyses, while robust, are limited by potential measurement errors and omitted variable bias. These issues could affect the validity of causality inferences despite the use of instrumental variables and change-score methods (Wooldridge, 2010). Moreover, the study's focus on quantitative textual analysis precludes capturing qualitative aspects of disclosures, such as managerial tone or strategic intent, which also influence investor perceptions (Beattie, 2014). Lastly, the generalizability of the findings is constrained by the specific institutional context of Nepalese banks. Regulatory enforcement, financial literacy, and disclosure practices in Nepal may differ significantly from those in developed markets. Therefore, caution is warranted when applying these results to other settings.

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APPENDIX

Textual Analysis Process for Risk Disclosure Quality