An analysis of the relationship between readability of the chairman's statement and firm financial performance in South Africa

Sinethemba Mankayi (a)* Frank Ranganai Matenda (b) Mabutho Sibanda (c)

(a) School of Accounting, Economics and Finance, University of KwaZulu-Natal, Westville Campus, University Road, Westville, Private Bag X54001, 4000 Durban, South Africa
(b) Postdoctoral Research Fellow, School of Accounting, Economics, and Finance, University of KwaZulu-Natal, Westville Campus, University Road, Westville, Private Bag X54001, 4000 Durban, South Africa
(c) Professor, School of Accounting, Economics, and Finance, University of KwaZulu-Natal, Westville Campus, University Road, Westville, Private Bag X54001, 4000 Durban, South Africa

A B S T R A C T

Stakeholders receive a comprehensive message that includes financial information, non-financial information, and a forecast for the future. Chairman’s disclosure is susceptible to manipulation by directors resulting in less transparency and thereby misleading the stakeholders. An evaluation of the chairman's messages in relation to financial performance is conducted in this study. The study examined the top 40 listed companies on the Johannesburg Stock Exchange for the year 2021, using the Gunning Fog Index as a measure of readability of the chairman’s statement and Return on Equity (ROE) as a measure of financial performance. In order to determine the relationship between the chairman’s statement readability and the company's financial performance, multiple linear regression was applied. This study found that as company performance increases, readability becomes more difficult. In contributing to existing literature, the study examines how the chairman's statement is correlated with financial performance from a South African viewpoint.

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Introduction

This study examines whether a company's financial performance correlates with its chairman's statement's readability. Stakeholders require financial and non-financial reporting. Although the Chairman's announcements are considered influential, there is no statutory requirement governing their content. Executives are free to make any claims they want due to the voluntary nature of the chairman's disclosure narrative, and the narrative is rarely audited. It is possible for a preparer to intentionally choose the length and complexity of a financial statement so as to disguise undesirable information or make it less transparent. In consequence, stakeholders may make inaccurate or misinformed decisions.

The literature on the ease of reading financial reports in South Africa is limited and no research has been conducted on its relevance to financial performance. In addition, financial performance is not consistently studied in the literature to determine whether it affects readability of accounting narrative disclosures. As a result, it would be beneficial to investigate whether the results of a company affect the readability of the chairman's statement in South Africa. As part of the overall reporting effort, directors should ensure that the narrative disclosure is written in a clear and understandable way in order to prevent readers from misunderstanding the information that informs their decision-making process.

Abdul Raman, MohdShaari and Mahmud (2012) cite the chairman's message as a key component of the company's annual report. An annual report usually begins with a statement from the company's chairman providing crucial details about the company's
performance and future prospects. The narrative disclosures are a significant source of information for business analysts (Smith & Taffler, 2000; Yasseen, Moola-Yasseen, & Padia, 2017). Several studies have suggested that management bias affects the chairman's statement (Jugnandand & Willows, 2021). In addition to assessing companies' financial potential, investors are also paying more attention to their sustainability.

Most accounting narratives in annual reports are not audited, therefore this non-financial data can easily falsified (Mankayi, Matenda, & Sibanda, 2023; Merkl-Davies, Brennan, & McLeay, 2011). Managers often confuse readers with unnecessarily complicated narratives in financial reporting, which makes the data ineffective. Poor performance may be concealed by narratives that are unreadable (Brennan & Merkl-Davies, 2013).

Research question: Is company financial performance associated with the readability of a chairman's statement? In answering this question the study extends the existing literature by examining the relationship between financial performance and the readability of the chairman's statement in South Africa which is a developing country. There are a number of factors that drive this examination. Studies focusing on developing countries are few since most of the existing studies are focused on developed countries. The chairman's statements do not undergo audits. The legitimacy of South African companies has been questioned in recent years due to accounting and auditing scandals. Accountants and auditors have been questioned over their legitimacy because of concerns regarding the validity of information disclosed.

The South African perspective of this study is therefore contributing to the literature. The reason for this is that no such study has been conducted so far. Consequently, stakeholders in the organization are made aware of the transparency and usefulness issues around the information disclosed. Stakeholders may consult professionals or specialists for help in making decisions after reading the chairman's disclosures. The disclosure narrative may also be difficult to comprehend, so assist with the general understanding.

This study benefits stakeholders because it raises awareness that disclosures from the chairman should be read with scepticism. According to the study, readability is positively correlated with financial performance, so as the performance of the company increases, readability becomes harder. The study will also contribute to a more general understanding of the fact that disclosure narratives are often difficult to understand. Among the users who will benefit from this study are:

   i. reliable suppliers, evaluating their performance, and evaluating their outlook.

This paper continues as follows. Section 2 presents an overview of both theoretical and empirical literature on the topic. Section 3 outlines methodology of the study. Findings and discussions are presented in Section 4. Section 5 concludes the paper.

Literature Review

Literature reviews are divided into theoretical and empirical. Firstly, the theoretical literature is discussed, which presents the underlying and guiding theory of the study. The agency theory underpins this study. The second section discusses the empirical literature, examining what scholars have found about the company's readability and how financial performance influences it.

Theoretical and Conceptual Background

It is the company that binds the principal and agent together. Principals and agents engage in business through the company, and their relationship is contractual. Owners invest in companies for profit, while agents manage them for the owners, receiving incentives for personal growth and success. Because of their differing goals and interests, there is a conflict between these parties, resulting in the agency problem. There is a problem when agents use company resources for their own benefit instead of that of the principals (Panda & Leepsa, 2017).

Using agency theory, this study shows how directors are agents who deliver information about strategy, performance, and future outlook to shareholders who are principals in the company. Directors are elected by shareholders, who are responsible for setting strategy and overseeing management. The study falls under the agency theory since there is an established agency relationship.

By focusing on favourable financial outcomes and avoiding adverse ones, management and the board interpret financial performance to protect their positions (Ahmed & Salat, 2019). Furthermore, the chairman provides investors and other users, with significant information through messages in the annual reports. The chairman of the company explains and interprets its financial performance and goals in his statement. The chairman's statement has been relied upon by investors in recent years for both good and bad performance explanations. This statement caught the researchers' attention because it entails voluntary narratives.

Empirical Review and Hypothesis Development

Authors should back their hypothesis with latest empirical studies in the related field.

A substantial amount of data is drawn from narrative disclosures by business analysts (Smith & Taffler, 2000; Yasseen et al., 2017). Based on Abdul Raman et al. (2012), the chairman's message is essential in the reporting process as it communicates a valuable message to the users and it is common for the chairman of the board to deliver the first message in an integrated report. Furthermore, due to the voluntary nature of chairman disclosures, executives are free to make whatever claims they wish. Research has indicated that users of company disclosure narratives are susceptible to both cognitive biases and social biases (Jugnandand & Willows, 2021).

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Users with the tools, expertise, or means to decipher and interpret highly complex quantitative information are likely to find disclosure narratives more valuable (Mishra & Haldar, 2019). In support of this argument, Yasseen et al. (2017) argue that statements that aren't subject to accounting standards are considered less than statements from the chairman. The apparent explanation for the attention that the message is getting is that it influences the stakeholders’ judgements. Although the message from the chairman is not audited, it is nevertheless considered important (Yasseen et al., 2017). Executives use impression management to manage the chairman's message, which is considered one of the essential disclosures. One of the key contributing aspects to this is that the chairman’s message disclosure is optional (Wang, 2016).

An analysis of the chairman's statements of Bangladeshi commercial banks was conducted by (Ahmed & Salat, 2019). The study was designed to critically assess the narratives used in these statements and examine whether they contain self-serving bias or not. A convenient sampling method was used to choose sixteen commercial banks for the study. In order to impress readers, banks employ impression management techniques to construct narratives. Additionally, companies tend to make accounting narratives based on bias and impression management techniques when their financial results are not positive. Furthermore, it was found that positive performance is attributed to management and other internal control, while poor performance is blamed on the industry and other external aspects. As a result, the authors claim, the banks have painted a picture of an industry in which competition is fierce. This is why the poor performance of the bank is justified.

Bhadra (2020) performed a study in the steel and cement industries in India to examine the fundamental elements affecting the disclosure practices of the companies. The author identified and examined the four elements of the disclosure narratives to be total assets, profit after tax, paid up capital, and total turnover. In terms of the Bombay Stock Exchange, 27 steel companies and 21 cement companies were investigated. Among the identified elements, the disclosure practices were found to be positively impacted. This means that when any of these elements increase the disclosure practice also increases. On the contrary, total assets adversely affect disclosure practices (Bhadra, 2020).

Considering impression management and readability in South Africa, Jugnandan and Willows (2021) examined these issues. A study examined impression management tactics and how easy it is to read financial reports from JSE-listed companies. Financial performance was correlated with report readability using a multiple linear regression model. In order to determine the reading complexity, the word count was divided into two categories: the word count and the Gunning Fog Index and Return on equity. Longer disclosures were found to be associated with poorly performing companies. Further, no evidence was found to link report complexity with performance.

Pasko, Minta, Rudenko and Hordiyenko (2020) explored how impressions were managed in CEO statements. In the study, 30 companies listed on the NASDAQ OMX Stockholm were compared with 30 companies listed on the NASDAQ OMX Stockholm with poor performance. The Flesch reading ease test was used to measure the level of readability and the profit was used to assess performance. Compared with CEOs of well-performing companies, CEOs of poorly performing companies are more future-oriented when presenting their reports.

In a study conducted by de Souza, Rissatti, Rover and Borba (2019) they investigated whether the ease of reading accounting disclosures is related to earnings of Brazilian listed companies. Disclosures that were deliberately complex were found to be intentionally included in order to hide poorly performed companies. Additionally, complex information from previous years negatively impacts the current year. This increases the time required to analyse disclosed information.

Li (2008) investigated how company financial performance affects annual report readability in the United States. Financial performance was quantified by profitability, and readability was quantified by the Fog index. Financially struggling firms' annual reports are hard to read, according to the author. Profitable companies also had annual reports that were easy to read.

There has been little empirical research in South Africa linking a company's performance to the readability of its chairman's message. Overall, the readability of integrated reports was examined. Therefore, this study aims to contribute to a body of research by examining the relationship between readability and financial performance. As far as South Africans are concerned, no such study has been conducted.

**Methodology**

**Readability**

A chairman's statement's readablness is measured by Gunning Fog Index scores and Flesch Reading Ease Index scores. The readability of this study refers to the ease with which readers can comprehend written content.

Fog index is given by:

\[ 0.4 \times (\text{average number of words per phrase} + \text{percentage of complicated words}) \]  

whereas complicated words are those with three or more syllables.
Table 1: Fog Index Score and Description.

<table>
<thead>
<tr>
<th>Fog index score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-10</td>
<td>Childish</td>
</tr>
<tr>
<td>10-12</td>
<td>Acceptable</td>
</tr>
<tr>
<td>12-14</td>
<td>Ideal</td>
</tr>
<tr>
<td>14-18</td>
<td>Difficult</td>
</tr>
<tr>
<td>&gt;=18</td>
<td>Unreadable</td>
</tr>
</tbody>
</table>

Flesch is given by:

\[ 206.835 - 0.864(\text{average word length per 100 words}) - 1.015(\text{average number of words per sentence}) \]  

Table 2: Flesch reading ease score and description.

<table>
<thead>
<tr>
<th>Flesch score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-30</td>
<td>Very difficult</td>
</tr>
<tr>
<td>30-50</td>
<td>Difficult</td>
</tr>
<tr>
<td>50-60</td>
<td>Fairly difficult</td>
</tr>
<tr>
<td>60-70</td>
<td>Standard</td>
</tr>
<tr>
<td>70-80</td>
<td>Fairly easy</td>
</tr>
<tr>
<td>80-90</td>
<td>Easy</td>
</tr>
<tr>
<td>90-100</td>
<td>Very easy</td>
</tr>
</tbody>
</table>

Financial performance

Financial performance variable is measured using the profitability ratio known as Return on Equity (ROE). It is described as financial performance indicator that calculated based on the net profit divided by its shareholders' equity of the company, that is, ROE = Net income/shareholders' equity.

Control variables

Company size - as a controlled variable, company size was identified and measured using the market capitalisation. In this calculation, the outstanding shares are multiplied by the market price per share.

Leverage Ratio - A measure of leverage was also computed using the Debt-to-Equity ratio. A debt-to-equity ratio shows the level of debt in the capital structure of the company in comparison with shareholder capital. In this ratio, total liabilities are divided by shareholder equity.

The association between financial performance and readability is analysed using a bootstrapped robust multiple linear regression model. This is a statistical method for analysing associations of variables. The proposed bootstrapped robust multiple linear modelling is:

\[ y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \epsilon, \]  

whereas \( y \) = Fog index readability score,

\( x_1 = \text{ROE}, \)

\( x_2 = \text{Company size measured using market capitalisation}, \)

\( x_3 = \text{debt to equity ratio}, \)

\( \beta_0 = \text{constant}, \)

\( \beta_1, \beta_2 \text{ and } \beta_3 = \text{regression coefficients and}; \)

\( \epsilon = \text{error term}. \)

The study covers the financial period ended in 2021. As this period is the most recent, it provides users with relevant information. As the government relaxed the COVID-19 lockdowns, companies began operating around this time. The COVID-19 lockdowns adversely affected the companies’ performance, so it was necessary to question whether performance is related to reporting of narrative disclosures.
Sample and data

Using a nonprobability sampling technique known as quota sampling, the Top 40 JSE-listed companies were selected (Bell, Bryman, & Harley, 2022). Based on their market capitalizations, the 40 largest JSE listed companies are ranked. The Top 40 index represents 80% of market capitalization in South Africa (Wealth, 2022). The presence on the Top 40 is a strong indicator of performance, according to (Barr, Kantor, & Holdsworth, 2007).

Among the Top 40 are stakeholder interests that span a wide range of industries (Du Toit, 2017). The results of several studies have shown excellent results with regards to sample risk management when using Top 40 listed businesses (Barr et al., 2007; Mamaro & Tjano, 2019; Marx & Mohammadali-Haji, 2014; Padayachee, 2010).

A secondary source of information was used to conduct this research. From the websites of the companies selected, integrated reports for financial period ended 2021 were downloaded and saved electronically in PDF format. A Microsoft Word document was created from the chairman's statement. Therefore, where necessary, any undesirable sections, tables, or footers were removed from the chairman's statement. For the calculation of ROE, financial information was referred to and captured from the integrated report. Whenever the integrated report did not provide sufficient financial information, the annual financial statements (AFS) of the companies were used.

In this study, we examined whether financial performance has an impact on it. Readability can therefore be considered a dependent variable while financial performance is an independent variable. 6 financial institutions were removed from the sample of 40 top selected companies since their reporting differed from other sectors. There are unique features to financial institutions' financial statements, such as their representation of the balance sheet and income statement. The final sample for the study consisted of 34 top listed companies.

Study scope is limited to JSE Top 40 companies for financial year 2021, limiting the scope to companies listed on the list. The study takes place in the context of South Africa. Considering the complexity of the concept of readability, measuring it quantitatively can be challenging.

Findings and Discussions

Financial performance was examined in this study in order to determine whether reading chairman's messages was affected by it. Fog Index was used to measure the readability of statements by the chairman, and Flesch was used as an alternative measure. Financial performance was quantified based on ROE. A bootstrapping robust linear regression model was used to model the relationship between readability and financial performance.

Table 1 lists the variables used. In terms of readability scores, Fog index (mean of 17.53, SD of 1.46) and Flesch readability (mean of 35.96, SD of 6.21) were 17.53 (SD of 1.46) and 35.96 (SD of 6.21). Return on equity (ROE) had a mean level of 0.2243 (SD = 5.9e+11) whilst leverage measured using debt to equity had a mean of 2.1933 (SD = 3.1600).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min.</th>
<th>Max</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fog Index Score</td>
<td>17.53</td>
<td>1.46</td>
<td>14.93</td>
<td>20.85</td>
<td>16.56</td>
<td>17.57</td>
<td>18.50</td>
</tr>
<tr>
<td>Flesch Score</td>
<td>35.96</td>
<td>6.21</td>
<td>22.30</td>
<td>46.60</td>
<td>31.38</td>
<td>36.55</td>
<td>40.58</td>
</tr>
</tbody>
</table>

ROE

Unwinsorized

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min.</th>
<th>Max</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>0.2243</td>
<td>0.1672</td>
<td>0.0058</td>
<td>0.7721</td>
<td>0.1118</td>
<td>0.1746</td>
<td>0.3110</td>
</tr>
</tbody>
</table>

*Winsorized

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min.</th>
<th>Max</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>0.2177</td>
<td>0.1418</td>
<td>0.0582</td>
<td>0.5055</td>
<td>0.1118</td>
<td>0.1746</td>
<td>0.3110</td>
</tr>
</tbody>
</table>

Company size

Unwinsorized

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min.</th>
<th>Max</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>3.9e+11</td>
<td>5.9e+11</td>
<td>3.8e+10</td>
<td>2.7e+12</td>
<td>6.4e+10</td>
<td>1.3e+11</td>
<td>3.1e+11</td>
</tr>
</tbody>
</table>

*Winsorized

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min.</th>
<th>Max</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>3.6e+11</td>
<td>4.6e+11</td>
<td>5.2e+10</td>
<td>1.4e+12</td>
<td>6.4e+10</td>
<td>1.3e+11</td>
<td>3.1e+11</td>
</tr>
</tbody>
</table>

Leverage

Unwinsorized

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min.</th>
<th>Max</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>2.1933</td>
<td>3.1600</td>
<td>0.0006</td>
<td>15.1384</td>
<td>0.7750</td>
<td>0.9695</td>
<td>2.3858</td>
</tr>
</tbody>
</table>

*Winsorizing was done to the 5th and 95th percentile values.

Readability of the Chairman’s Statement.

Using the Fog index score, this section evaluates the readability of the chairman's message for selected companies. An analysis of hypotheses using one sample t-tests is also presented.

Fog Index Score

According to the Fog index score (see Table 2), data was classified into five (5) levels of readability (8 to 10), acceptable (10 to 12), ideal (12 to 14), difficult to read (14 to 18) and unreadable (18). Later, the readables were divided into readables (8-18) and...
unreadables (18+). Most of the statements (n = 21; 61.8%) were difficult to read. Meanwhile, 38.2% (n = 13) of the chairman’s statements were considered unreadable. Based on Demaline (2020); (Du Toit, 2017; Li, 2008) findings, the results are consistent. It appears that integrated reports and MD&A disclosures of companies are difficult to read, according to these studies.

Table 4: Fog index score results

<table>
<thead>
<tr>
<th>Fog Index</th>
<th>Readability Levels</th>
<th>Readability Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 – 10</td>
<td>Easy to read</td>
<td>Readable</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>10 – 12</td>
<td>Acceptable</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>12 – 14</td>
<td>Ideal</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>14 – 18</td>
<td>Difficult to read</td>
<td>21</td>
<td>61.8%</td>
<td></td>
</tr>
<tr>
<td>≥ 18</td>
<td>Unreadable</td>
<td>Unreadable</td>
<td>13</td>
<td>38.2%</td>
</tr>
</tbody>
</table>

Note: N = 34

Fog index scored messages from the chairman of the board of selected companies were examined statistically with the goal of determining whether they are readable or unreadable. A one-sample t-test was used to achieve this goal. As part of statistical hypothesis testing, one-sample t-tests are used to determine an undetermined population mean. In this parametric test, the Fog index readability scores are based on a normal distribution. Readability is determined by determining whether the sample have a Fog index less than 18. Samples with a mean of less than 18 are considered readable, while those with a mean of 18 or greater are considered unreadable. One sample T test null hypothesis (H1a0) and alternative hypothesis (H1a1) are as follows:

H1a0: $\mu \geq 18$ ("the underlying Fog index mean for readability is significantly greater or equal to 18", thus, chairman’s statements are not readable).

H1a1: $\mu < 18$ ("the underlying Fog index mean for readability is significantly less than 18", thus, chairman’s statements are readable),

18 represents the proposed value of the sample mean (Li, 2008). Using the bias-corrected and accelerated statistic (see Table 3) and using 10000 bootstrap samples, a one sample t-test indicates that the Fog index readability score overall is 17.5025 with a 95% confidence interval [17.048 18.012] and 1.460 standard deviation with a 95% confidence interval [1.205 1.649]. Compared to the hypothesized mean of 18, the sample mean for Fog index readability was -0.475 (95% CI -0.985 0.034). With a one-sample t-test (p = 0.033), statistical significance was established. The null hypothesis should therefore be rejected since 5% is significant. In this case, readability is significantly lower than 18 because of the underlying Fog index mean. So, the messages from the chairmen of the boards of the selected companies are generally readable. According to Table 2, the board messages of the selected companies are considered readable, but challenging to read, using the Fog index readability score.

Table 5: One-sample t-test summary

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-sample test statistics</td>
<td></td>
</tr>
<tr>
<td>Hypothesized mean/test value</td>
<td>18.00</td>
</tr>
<tr>
<td>Sample mean [Bca 95% CI]</td>
<td>17.525 [17.048 18.012]</td>
</tr>
<tr>
<td>Sample std. deviation [Bca 95% CI]</td>
<td>1.460 [1.205 1.649]</td>
</tr>
<tr>
<td>t-statistic (df)</td>
<td>-1.898 (33)</td>
</tr>
<tr>
<td>Mean difference [95% CI]</td>
<td>-0.475 [-0.985 0.034]</td>
</tr>
<tr>
<td>p-value (one-sided test)</td>
<td>0.033*</td>
</tr>
</tbody>
</table>

One-sample effect size point estimates

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohen’s d [95% CI]</td>
<td>-0.325 [-0.668 0.022]</td>
</tr>
<tr>
<td>Hedges’ correction [95% CI]</td>
<td>-0.318 [-0.653 0.021]</td>
</tr>
</tbody>
</table>

Note: *Statistically significant at alpha = 0.05. Bca means Bias-corrected and accelerated. Bootstrap results are based on 10000 bootstrap samples. Cohen’s d uses the sample standard deviation. Hedges’ correction uses the sample standard deviation, plus a correction factor.

Company Financial Performance and Chairman’s Statement Readability

This section examines the second purpose of the study: assessing the relationship between company financial performance (measured by ROE) and chairman’s statement readability (measured by Fog index score). Linear regression methods were applied based on Fog index scores since it is a widely used formula to determine readability. A bootstrapped robust multiple linear regression model was then used to test for the hypothesized framework using winsorized independent variables. The hypothesis to be tested is;
H2a: Financial performance does not have a statistically significant linear relationship with chairman's statement readability.
H2b: Financial performance has a statistically significant linear relationship with chairman's statement readability.

A bootstrapped multiple linear regression model was utilised to establish if financial performance is significantly correlated with readability. A predictor variable for readability was financial performance and a control variable was company size and leverage.

After 20000 bootstrap replications, the robust regression beta estimates indicate that performance (ROE) can significantly predict readability, while controlling for company size and leverage (β = 2.761 with 95% CI [-0.256; 5.577]; p = 0.0347). Based on the results of this model only 12.4% of the variation in readability (R² Adjusted = 0.1239) was explained by the model (see Table 4). In light of the statistical significance of the regression coefficient for ROE, the null hypothesis is rejected at 5% significance level. This is because, whilst controlling company size and leverage, financial performance has a statistically significant linear relationship with chairman's statement readability. The resultant multivariate predictive model can be expressed as;

\[
\text{Fog Index Score} = 17.550 + 2.761 \times \text{ROE} - 1.099e-12 \times \text{Company size} + \epsilon
\]

Table 6: Adjusted bootstrapped robust multiple linear regression model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>Bias</th>
<th>SE</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>17.550</td>
<td>-0.013</td>
<td>0.703</td>
<td>[16.246; 19.045]</td>
<td>&lt;0.0001*</td>
</tr>
<tr>
<td>ROE</td>
<td>2.761</td>
<td>-0.035</td>
<td>1.466</td>
<td>[-0.256; 5.577]</td>
<td>0.0347*</td>
</tr>
<tr>
<td>Company size</td>
<td>-1.099e-12</td>
<td>-5.205e-15</td>
<td>5.920e-13</td>
<td>[-2.273e-12; 6.944e-14]</td>
<td>0.0309*</td>
</tr>
<tr>
<td>Leverage</td>
<td>-1.416e-01</td>
<td>-6.780e-03</td>
<td>1.986e-01</td>
<td>[-5.536e-01; 2.239e-01]</td>
<td>0.2252</td>
</tr>
</tbody>
</table>

Robust residual standard error: 1.396
Adjusted R-squared: 0.1239

*Significant predictive effect by the predictor/s at alpha = 0.05. Standard errors and derived statistics are based on 20000 bootstrap replications
Predictors: (Constant), ROE, Company size and Leverage.
Dependent variable: Fog Index.

After establishing the linear relationship between performance and readability, it was then necessary to conduct a post-hoc analysis to study the unadjusted linear association between performance and readability. In order to achieve this, a bootstrapped robust univariate linear regression model was used. Assessing the parameter estimates in Table 5 shows that in this univariate model the parameter estimates are all statistically significant (β₀ = 16.828 with 95% CI [15.939; 17.651]; p = <0.0001 and β₁ = 3.155 with 95% CI 0.178; 5.932; p = 0.0196). Based on the results of this model, only 6.32% of the variation in readability (R² Adjusted = 0.0632) was explained by the model. Since the coefficient for ROE is statistically significant, thus, the unadjusted model suggests that financial performance has a statistically significant linear relationship with chairman's statement readability without controlling for any other covariates. The univariate usable model is;

\[
\text{Fog Index Score} = 16.828 + 3.155 \times \text{ROE} + \epsilon
\]

Table 7: Unadjusted bootstrapped robust simple linear regression model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>Bias</th>
<th>SE</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>16.828</td>
<td>-0.007</td>
<td>0.434</td>
<td>[15.939; 17.651]</td>
<td>&lt;0.0001*</td>
</tr>
<tr>
<td>ROE</td>
<td>3.155</td>
<td>-0.028</td>
<td>1.456</td>
<td>[0.178; 5.932]</td>
<td>0.0196*</td>
</tr>
<tr>
<td>Company size</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Leverage</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Robust residual standard error: 1.458
Adjusted R-squared: 0.0632

*Significant predictive effect by the predictor/s at alpha = 0.05. Standard errors and derived statistics are based on 20000 bootstrap replications
Predictors: (Constant), ROE.
Dependent variable: Fog Index.
Discussion

This study shows that as company performance increases, readability becomes more difficult. In contrary to this study’s results are those of (Li, 2008). It was found by Li (2008) that companies that did not perform financially had difficult narrative disclosures. Annual reports that are easy-to-read also consistently produced positive earnings. In addition, companies with easy-to-read disclosure narrative had persistent positive earnings. Meaning that directors of performing companies are not hiding anything from their shareholders. In annual reports, directors of non-performing companies may intentionally conceal undesirable information from investors.

The findings of de Souza et al. (2019) support this conclusion for complex disclosures are deliberately included to conceal poor performance. Similarly Pasko et al. (2020) found that CEOs of poorly performing firms tend to present their reports in a future-oriented manner compared to well-performing firms. Impressions management was not corroborated by the author. Meanwhile, Jugnandan and Willows (2021) examined poor performance indicators related to complex financial reports. Their study found that poor performers tend to report longer disclosures in their financial reports, but they did not find sufficient evidence to conclude that there was a correlation.

Furthermore, the results suggest that statements made by the chairman are less readable when the company is large. This means that as company size increases the difficulty of readability decreases. However, Jugnandan and Willows (2021) found that company size was not associated with the reading ease of disclosure narratives. In addition Richards and van Staden (2015) found no significant correlation between the size of a company and its readability. However, it has been found that company size is positively correlated with the reading ease of integrated reports (Raimo, Vitolla, Minutiello, Marrone, & Tettamanzi, 2022).

It was not statistically significant that leverage and readability were linearly related. In line with this, Jugnandan and Willows (2021) found that leverage does not always correlate with readability. According to Richards and van Staden (2015), on the other hand, leverage and the readability of disclosure narratives are correlated, which means that companies with high leverage tend to have disclosure narratives that are difficult to understand. Similarly, Raimo et al. (2022) found that disclosures by companies with high leverage are difficult to understand.

The independent variable only accounts for 12.4% of the variation in readability in a multivariate model with adjusted $R^2$ values. Univariate modelling, however, shows that the independent variable only accounts for 6.32% of readability variation. This indicates that by adding company size to ROE enhances the performance of the linear regression model. Thus, the multivariate model is a better predictive model.

In addition to the adjusted $R^2$, the residual standard errors also support the assumption that the multivariate model is a more accurate predictor. With a ratio of 1.396, the multivariate model had a smaller residual standard error than the univariate model with 1.458. Since the multivariate regression model presents a smaller residual error, it is more accurate.

It was found that readability and performance are positively correlated, which means that as financial performance increases, reading difficulty also increases. Due to the over-explanation of positive financial performance, complex language can be used here. Stakeholders might make inaccurate decisions due to the lack of an audit. Standards for auditing disclosure narratives, such as chairman's statements, would be developed through adoption of procedures such as those in the Plain English Handbook.

A key recommendation of King III was for companies to adopt an integrated approach that recognizes the interdependence between strategy, governance, and sustainability. This knowledge and mental model form the basis of the integrated report. Since 2010, the JSE has increased its listing standards to require companies to either comply with King III's rules or explain why they are not. A framework for integrated reporting was produced in December 2013 and is currently in use. Integrated reports need to follow the framework in terms of reporting and content.

Conclusions

The chairman can manipulate his disclosures, creating lack of transparency and misleading stakeholders. The aim of the study is to examine financial performance in relation to chairman's messages. In addition to exploring whether and how the chairman's statement correlates to financial performance, a South African perspective will contribute to existing literature.

Readability can therefore be considered a dependent variable while financial performance is an independent variable. 6 financial institutions were removed from the sample of 40 top selected companies since their reporting differed from other sectors. There are unique features to financial institutions' financial statements, such as their representation of the balance sheet and income statement. Thus, the final sample for the study consisted of 34 top listed companies.

The scope of this study is limited to JSE Top 40 companies for the financial year 2021, and it is conducted in the context of South Africa. Due to its complexity, readability can also be difficult to quantify.

Fog Index was used to measure the readability of statements by the chairman, and Flesch was used as an alternative measure. Financial performance is measured by an organization's return on equity (ROE). In order to measure the size and leverage of a company, market
capitalization and debt to equity ratios were used. Financial performance was correlated with the readability of the chairman’s statement using multiple linear regression analysis.

A positive correlation has been found between readability and performance in this study, indicating that difficulty increases with financial performance. Additionally, readability negatively correlates with company size, according to the results. This means that as company size increases the difficulty of readability decreases. In contrast, leverage had no statistically significant linear relationship with chairman’s statement readability.

Unlike in the United States of America (USA), laws governing narrative disclosures do not exist in South Africa. In the USA, the Plain English Handbook has been adopted into law. This book guides the content and writing style to ensure disclosure narratives are readable by the ordinary reader. It is recommended that guidance of this nature be developed and adopted into law in South Africa. Note that the narrative disclosures including the chairman’s statements are not audited. There is a risk of inconsistency between readability and the actual performance of the company resulting in users making inaccurate decisions. Therefore, developing auditing standards in this area of reporting is recommended.

For future research, companies listed in the USA and South Africa can be compared for their readability of chairman statements. By incorporating writing principles into law, this comparison will analyze whether readability improves. Additionally, researchers could work on developing auditing standards to audit the chairmen.

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All authors have read and agreed to the published version of the manuscript.

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Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to restrictions.

Conflicts of Interest: The authors declare no conflict of interest.

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