Global Management Review
Vol 14, Issue 2, July - December 2020

LONGITUDINAL READABILITY ANALYSIS OF LETTER-TO-SHAREHOLDERS PUBLISHED BY INDIAN LISTED BANKING COMPANIES

PARDHASARADHI MADASU
Associate Professor (Finance Area), Department of Finance,
Siva Sivani Institute of Management, Hyderabad, India

Abstract

Accounting narratives such as Letter-to-Shareholders (LtS) or MD&A have gained prominence among the accounting research community. Researchers have started analyzing these narratives through a computational linguistic lens. Among many of the narratives segments of Annual Reports, LtS, even though unaudited, is considered one of the critical narrative segments for investors and analysts alike. Clatworthy and Jones (2003) have mentioned that accounting narratives, such as LtS, are widely used and are considered vital while making investment decisions. Narratives in general and accounting narratives in specific are considered useful, provided they are 'Readable.' In this backdrop, the readability analysis of accounting narratives has gained currency. The present study is a longitudinal readability analysis of the LtS published by listed banking companies in India. In total, 301 LtS, which were published between FY 2007 – 08 to 2018 – 19, were analyzed using relevant readability metrics. The study results reveal that the LtS, as published by the sample companies during the sample period, could be categorized as 'Difficult' to read. Further, the readability has declined over the sample period, and the LtS has become more complex to read. Comparative readability analysis between LtS of public sector banks and private sector banks reveals that the readability of LtS, which were published by public sector banks is much lower than the private sector banks. The banks which were the part of any of the sectoral indices have published LtS, which were less readable than the LtS of banks, which are not part of any sector index. Based on this study's finding, it could be stated that the listed banking companies could be more proactive in published LtS that are more readable. The increase in readability would be more beneficial to the retail investors and better investment decisions by them.

Keywords: *Readability Analysis, Longitudinal Study, Letter-to-Shareholders, Banking Companies, Flesch Reading Ease, Gunning Fog Index, and Bog Index.*

INTRODUCTION

Investment decisions depend on the analysis of related financial and non-financial data. In the case of investments in listed corporate entities, the investors accumulate the relevant information from corporate disclosures like annual reports and market-related sources such as analysts' reports. Corporate Disclosures (CDs) are considered a vital information source for making investment decisions. CDs could be in the form of financial statements or maybe like press meets (conference calls) where the top executives answer the media's queries. The CDs could be mandated or voluntary, but both the segments of CDs are a vital source of information. Financial reporting and corporate disclosures such as conference calls are a potentially vital communication source between management and outside investors. The current financial performance and the potential of the firm could be inferred from the CDs (Madhani, 2008). Because of CDs' prominent role as a medium of communication, the quality of CD's matter a lot. In this regard, Pivac et al. (2017) state that accurate, comprehensive, and timely CDs are critical for the proper functioning of capital markets.

The various forms of CDs and the Annual Reports (ARs) form the most reputable and trusted source of information about the listed entity. According to CPA Australia (2019), the ARs are considered the primary and trustworthy source of information about the listed entities for more than a century. The ARs consist of both mandated and voluntary disclosures, and these disclosures could be quantitative or narrative. Undoubtedly the financial statements provide valuable information that is measurable and comparable, but the accounting data itself may not be providing enough information required to appreciate the story and context behind the financial numbers. Generally, the numbers in financial statements become more meaningful when they are read in a context surrounding those financial figures. The income statement of a particular year may disclose an abysmal performance; however, if this performance is understood in the context provided either in LtS or MD&A or both, than the reader may find reasons for that particular year's poor performance.

In the given backdrop, the narratives (descriptive data) provided in various ARs segments help as a tool to understand the background in which the listed entities have performed during the last financial year. As per the study of Garefalakis et al. (2016), the narrative portion of ARs improves the quality of the stakeholders' information. Financial data and narratives act as supplements to each other. Maybe without the contextual data (narratives), it would not be easy to judge any entity's performance only based on numerical. KPMG (2015) report on better business reporting states that narrative reporting has a vital role in discharging in providing a broader perspective on business performance along with accounting data.

The current-day disclosures of listed entities are expected to have two prominent attributes, such as transparency and better narrative

reporting, that could add value to the quantitative accounting data (Ambler & Neely, 2007). Globally, regulators view accounting narratives as vital to serve the investors market's shifting information needs (Beattie, McInnes, & Fearnley, 2004). The narrative segments of the ARs include Letters-to-Shareholders (LtS), Directors Report (DR), Corporate Governance Report (CGR), Management Discussion & Analysis (MD&A), Auditors Report, and Corporate Social Responsibility (CSR) or Business Responsibility Reports (BRs). Out of these textual data, few are mandated by securities law, and others are optional disclosures. From the viewpoint of academic research and acceptance among the investor community, voluntary narratives such as LtS and mandatory narrative segments such as MD&A are regarded as vital. Long term investors would choose to spend time on the 'letters' addressed to shareholders by the Chairman or CEO.

According to Mcconomy and Bujaki (2010), LtS is the extensively read section of the ARs. The LtS are regarded to disclose listed entities' values, priorities, and even future expectations. The LtS has become the researchers' preferred medium through which the top management's intentions and aspirations could be assessed. A study by Hooghiemstra (2010) states that the LtS are unaudited and not subject to any regulatory guidelines, but are still referred by investors while making investment decisions. A similar study by Murphy (2013) mentions that LtS are generally written either at the end of the financial year or at the beginning of the next financial year. The general purpose of the LtS is to provide incremental information to the user of the ARs. However, sometimes the LtS are used for impression management purposes rather than as incremental or supplement information.

Due to its importance as a source of incremental information and a document that provides insights into the future strategic vision, LtS published by listed entities has become a subject matter of academic research. Various dimensions of LtS have been under the researcher's lens. One of the widely used lens through which the LtS gets analyzed is the 'Readability' of the LtS. In their study, Souza et al. (2019) mentioned that managers deliberately make the accounting narratives complex and less readable. This assumption refers to the obfuscation hypothesis, and one way of testing this hypothesis is the assessment of the 'Readability' of the financial narratives such as LtS.

LETTER TO SHAREHOLDERS AND READABILITY

Well-informed investment decisions are purely made on the analysis of information that could be accounting data or the narratives surrounding accounting data. CDs are considered as useful provided they are 'timely' and 'readable.' Daraz et al. (2018), in their study, argue that the readability of narrative is the critical pre-requisite for improving the quality of disclosures. This principle applies to the accounting narratives and applies equally to any textual data intended for communicating with non-experts. Not so readable narrative would lead to misinformation and could be referred to as not-so-useful. A

study by Moreno and Casasola (2016) focusing on readability evaluation of narratives in ARs mentioned that most of the descriptions in ARs, such as LtS, were found to be challenging to read. However, over some time, the narratives have become more reader-friendly.

LtS has become a primary source of valuable insights about the listed entities. Due to the separation of ownership and management in a professionally run listed companies, the shareholders (owners) use LtS as a source of publicly available internal information. Every financial year-end, most of the long-term investors wait to read the LtS published by famous CEOs. LtS, by popular personalities such as Warren Buffett or Jeff Bezos, are classic examples of most-read LtS worldwide. According to CBINSIGHTS Research Briefs (2020), each year Jeff Bezos publishes an open LtS addressing Amazon's shareholders. Over the last two decades, these LtS have become the primary source of incremental information about Amazon's financial and operational performance. As per Boesler (2013), Buffett's LtS is a must-read for investors' year-in and year-out. The reasons for a few of the LtS written by famous investment gurus (also being CEOs) are that they are easy to read and comprehend. In this regard, Martin (2019) states that Buffett LtS are easily accessible and informative and does not include much of the jargon. Buffett keeps the LtS readable, and he writes the LtS as if he is in conversation with his sisters.

The majority of the studies have found that the usefulness of LtS could improve, provided they are more reader-friendly and are more transparent. The findings of the survey made by Hanano (2017) reveal that only 3% of the sample LtS used for the study are worth reading, and many companies choose not to publish the LtS. Similar studies identified a few traits that the LtS should possess such that they could serve the purpose of providing incremental information to the readers. One of the attributes that these letters are expected to have is the ease of reading. It is considered that LtS, which are difficult to read, would not serve the purpose they are initially intended for. Recent studies have used computational linguistic software to assess the readability of the LtS published by most successful CEO. A study in this direction by Dorrell and Darsey (1991) has revealed that LtS authored by CEOs who are classified as very successful CEOs could be categorized as 'readable'. Those LtS adhere to standards such as use of numbers and the use of compound adjectives.

Based on the background study, it could be stated that readability is one of the pre-requisite for making the LtS worthy. In this direction, the present research aims at assessing the readability of the LtS published by top executives of Indian listed banking companies. The present study aims at answering the following research questions (RQs):

RQ_1: What is the level of readability of the LtS published by the listed banking entities in India during the sample period FY 2007 - 2008 to FY 2018 – 2019?

RQ_2: How did the readability of LtS published by listed banking entities

change over the period from FY 2007 - 2008 to FY 2018 – 2019?

RQ_3: To what extent are the variables such as average sentence length, passive voice, and overall LtS size (Total Words) of the LtS change over FY 2007 -2008 to FY 2018 – 2019?

RQ_4: Is there any statistically significant variation in the readability scores over the sample period FY 2007 - 2008 to FY 2018 – 2019?

RQ_5: Is there a statistically significant difference between the readability scores of LtS published by listed public sector banks and listed private sector banks?

RQ_6: Is there a statistically significant difference between the readability of scores of LtS published by banking entities that are the constituents of sectoral indices and banking companies that are not constituent of the sectoral index?

The research questions (RQs) framed for the study are answered by framing and testing the hypothesis (H0s). The hypothesis for the study are as under:

H_{01}: There is no significant difference in the readability of LtS published by listed banking companies during the study period, i.e., FY 2007 – 08 – FY 2018 – 19.

H_{02}: There is no significant difference in the readability of LtS published by listed banking companies representing public and private sector banks.

H_{03}: There is no significant difference in the readability of LtS published by banking companies, which are part of sectoral indices and banking companies that are not part of sectoral indices.

MEASURING READABILITY

Corporate disclosures were used as a subject matter for many of the studies. Few of the studies have analyzed the volume of disclosures. Recently, another important dimension of CDs, i.e., the lexical properties, has become accounting research. Disclosure readability analysis is the most popular stream of research studies in the accounting domain. The importance of CDs' lexical properties such as 'Readability' has gained popularity after the Securities Exchange Commission of US has advocated for a higher level of clarity and comprehension in CDs. The significant move towards more readable CDs such as prospectuses, has been rooted in the 1969 'Wheat Report' (Li, 2008).

Many narrative segments of the ARs were subjected to the readability analysis. In the previous studies, the relationship between the accounting narrative's readability and the various factors such as the firm's profitability or size were examined. In their study, Loughran and McDonald (2014) state that it is difficult to define the term 'Readability' precisely. The concept has evolved mostly in grade leveling school textbooks. From the viewpoint of Sattari (2012), readability's main goals are comprehension and conveying of information. The most popular definition of readability was given by Dale and Chall (1948). Readability emphasizes elements of the text related to comprehension (or lack of it) on the reader's part. These elements could be understanding of the words, phrases,

and ideas in the passage. According to Dale and Chall, these three elements of the definition of readability are not separate but interact with each other.

In this backdrop, the major challenge in disclosure readability studies is how to measure the readability of the given narrative. From the accounting and finance research point of view, the measures used for quantifying the financial disclosure readability could be classified into traditional readability measures and measures based on Plain English Guidelines of the US Securities and Exchange Commission (SEC). Among the conventional readability measures, the Fog Index (Fog) and the Flesch Reading Ease Score (Flesch) are the most used readability metrics. SEC Plain English recommendations are an attempt to make the listed entities disclosures more readable and understandable. In recent times it is observed that readability measures based on SEC Plain English guidelines have become equally popular with traditional standards of readability. Current readability studies are employing a multifaceted effort of readability attributes based on the SEC recommendations. Using short sentences or writings based more on active tense or non-usage of multiple negatives are few attributes that SEC recommends for better readability.

Motivated by the past studies, the Fog Index, the Flesch Reading Ease Score, the Bog Index, and few SEC plain English attributes are used to measure readability for the current study. The Fog Index was developed by Robert Gunning in 1952 and is used to capture the written text's complexity based on the syllables per word and words per sentence. The value of Fog indicates the number of years of formal education required by the reader to read the text once and understand. The relationship between Fog Index and readability is as follows: Fog of 18 means that the text is unreadable, Fog of 14 - 18 indicates the text is difficult to read, Fog of 10 – 14 is considered an ideal and acceptable level of readability, and Fog of below 10 suggests that the text is suitable for the reading of children.

Rudolph Flesh, the pioneer of the Plain English Movement, was the developer of the Flesch Reading Ease concept in 1948. Flesch Reading Ease score of 90.0 and 100.0 is assigned to the narrative, which can be read by an average 5^{th} grader. On the other extreme, the score of 0.0 and 30.0 is assigned to narratives that could be readable by college graduates. Both Fog Index and Flesch Reading Ease Score are criticized for a few of their limitations. The researchers in the accounting and finance domain started using Bog Index and SEC Plain English recommendations to overcome these limitations.

According to Bonsall et al. (2013), the Bog Index is based on direct English writing principles and is used to capture most of the attributes of disclosure clarity as recommended by the SEC. The Bog Index could be captured by using a commercial linguistic software program, StyleWriter, which can capture SEC Plain English attributes. Bog Index is expected to overcome the limitation of Fog Indexes or Flesch Reading Ease in measuring writing clarity. The Bog Index consists of three components, Sentence Bog, Word Bog,

and Pep. A higher Bog Index value is an indication of a problematic narrative.

SAMPLE AND METHODOLOGY

For this study, the longitudinal analysis was warranted. LtS published by Indian listed banks for FY 2007 – 08 to FY 2018 – 19 (12 years) has been collected. In total, 32 listed banking companies were chosen for the study purpose. Out of this sample, 17 banking companies are from the private sector, and balance 15 banking companies represent public sector banks. Total LtS analyzed are 301 out of which LtS representing private sector banks is 149, and balance 152 LtS represent public sector banks.

Further, the sample could be classified as LtS published by banks, which are part of the sectoral banking index and banks, which are not part of any of the sectoral index. 82 LtS represent the banks which are part of banking index, and 219 are LtS published by banks, which are not part of any Index. Once the sample has been chosen, the PDF format of the respective banks' annual reports has been downloaded, and the LtS section of the annual report has been extracted into word format. The converted LtS were then processed to measure readability scores using online commercial linguistic software such as Readable.com and StyleWriter. Fog Index Value, Flesch Reading Ease Score, and Bog Index values are extracted using this online software. Once the readability score was available, the respective statistical tools were applied to answer the research questions and test the study's hypotheses.

EMPIRICAL RESULTS AND ANALYSIS

The study focuses on the longitudinal readability analysis of listed banking companies in India. To measure the readability of the LtS, the three most popular readability metrics, such as the Fog Index, Flesch Reading Ease, and Bog Index, were used. Along with these three readability metrics, few attributes of SEC Plain English guidelines are also measured. To answer the research question (RQ_1), firstly, the longitudinal change in the readability levels of all the sample LtS are documented based on the average of FRE Score, Fog Score, and Bog Score. Later, the longitudinal change in the complexity of the readability of LtS of listed public and private sector banks and constituents and non-constituents of the sectoral index has been documented.

RQ_1: What is the level of readability of the LtS published by the listed banking entities in India?

The results of the readability analysis of LtS depict a general lack of readability across all the years. Table 1 depicts the descriptive statistics of three readability metrics' over the sample period (FY 2008 – 2019). Analysis of 301 LtS revealed the values of FRE (M = 43.30, SD = 8.08), Fog Index (M = 14.41, SD = 2.05) and Bog Index of (M = 79.39, SD = 18.03). Flesh Reading Ease Score of 30 – 50 is assigned to text, which is difficult to read and requires a minimum of a college education. A Fog Index value of below 12 is considered as ideal for good readability. Fog Index values above 12 are assigned to texts which are difficult to read. A Bog Index below

70 is considered as a good sign of readability. On all the three measures, the sample LtS are categorized as 'Difficult' to read by an average reader.

RQ_2: How did the readability of LtS published by listed banking entities change over the period from FY 2007 - 2008 to FY 2018 – 2019?

An investigation into the changes of difficulty in the readability over the sample period shows that the LtS have become more complex regarding ease of reading. This trend could be observed over all the three readability metrics viz. FRE, Fog Index, and Bog Index. Fog Index score (*M = 13.61, SD = 2.48, N = 11*) during financial year ending 2007 – 08 has steadily increased over the period with (*M = 14.82, SD = 2.03, N = 29*) by the financial year ending 2018 – 19. Similar growth in absolute readability value of Bog Index (Decline in reading ease) could be observed with (*M = 77.36, SD = 13.10, N = 11)* in financial year ending 2007 – 08 to (*M = 79.36, SD = 14.65, N = 29*) by financial year ending 2018 – 19.

LtS being a voluntary narrative in the annual report, is not published by all the listed entities. A close observation of the number of LtS published over the sample period reveals a growing trend in inclusion of LtS as a part of ARs. The number of LtS published (*N = 11*) during the financial year ending 2008 and has grown (*N =29*) by the financial year ending 2019. By the end of FY 2019, almost all the sample companies started to publish LtS in their annual reports. Even though it is discretionary, the LtS has gained popularity among shareholders for its intrinsic value. A study by Binh (2012) states that voluntary disclosures such as LtS have gained popularity because the users' information needs have undergone a change.

Table 1 : Descriptive Statistics of Readability Metrics (FY 2007 – 08 to 2018 - 19)

Year Ending	Obs.	Flesch Reading Ease Score			Fog Score			Bog Score		
		Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
2008	11	46.03	11.16	34.70	13.61	2.48	7.90	77.36	13.10	37
2009	15	45.38	7.10	26.30	13.95	1.90	6.90	69.87	9.38	31
2010	23	45.37	10.02	38.50	14.18	2.41	9.40	79.87	21.80	107
2011	26	43.72	7.19	25.70	14.45	1.72	6.70	77.15	23.21	137
2012	26	45.83	8.53	36.90	14.23	2.13	10.80	72.23	12.61	53
2013	26	43.23	6.94	36.90	14.46	1.56	6.10	79.35	15.01	68
2014	27	41.22	9.62	43.50	14.95	2.56	10.60	80.30	15.23	75
2015	25	42.43	6.73	24.40	14.44	1.59	5.20	76.64	13.74	49
2016	32	42.50	7.84	27.40	14.27	2.46	9.10	82.21	21.17	122

2017	31	41.98	6.63	26.20	14.57	2.02	7.40	79.36	14.54	64
2018	30	42.94	6.90	23.80	14.10	1.81	6.50	88.97	24.95	110
2019	29	41.63	8.35	32.80	14.82	2.03	7.7	81.76	14.65	51
2007 -2019	301	43.30	8.08	52.70	14.41	2.05	13.60	79.39	18.03	137

RQ_3.: To what extent the variables such as average sentence length, passive voice, and overall LtS size (Total Words) of the LtS change over FY 2007 -2008 to FY 2018 – 2019?

According to Nirmaldasan (n.d.), narrative (text) is composed of letters (L), syllables (S), and words (W). These three variables are independent of each other; the text difficulty is determined by variation in these three variables. On average syllable length = 3 letters, the average word length = 1.66 syllables and 5 letters is considered optimum. When these metrics are applied on a full-length sentence, the average sentence length is 17 words; 29 syllables; and 87 letters are treated as normal. These calculations clarify factors like a) average sentence length, b) several words per sentence, and c) passive tone in the text. All the conventional readability metrics use these variables to compute a readability score.

Researchers in the accounting domain advocate that the general readability metrics are not entirely suited to assess financial texts' readability. These observations have led to the design and popularity of the Bog Index. In the same direction Securities Exchange Commission came up with the concept of 'Plain English.' The variables that SEC's plain English uses to determine the readability are a) Total Words, b) Average Sentence, and c) Passive Voice (Bonsall et al., 2014).

Table 2 is populated by the descriptive statistics of variables that would influence the readability scores. For the sample period, the average total words are 1120.66 (SD = 858.83), the average sentence length is 20.74 (SD = 4.80), and the mean of passive voice was 17.55 (SD = 9.44). As per Newell (n.d.), the average sentence length of JK Bowling's Harry Potter has an average sentence length of 12 words. For academic research writing, the average sentence length of 20 words is prescribed.

Loughran and McDonald (2009) study that a longer average sentence or a higher proportion of multi-syllable words indicates that the narrative (text) is a difficult to read. The same principle is applied to the SEC's Plain English guidelines (Bog Index). The average sentence length of the sample LtS has increased from 20.16 (*SD = 3.24*) to an average of 21.48 (*SD = 3.39*) between the financial year ending 2008 to 2019. The average sentence length increase is a clear indication of growth in the complexity (difficulty) in the readability of LtS. It is also observed from the given data that the average number of total words of 690.00 (*SD = 263.80*) in the financial year ended in 2008 has increased to 1110.13 (*SD = 878.27*). An increase in the overall length of the LtS, along with the rise in the average sentence length, is a clear indication of the increased difficulty in reading the LtS. In other words, the LtS are becoming more complicated over the period from the reader's point of view.

Table (2): Descriptive Statistics of Metrics that Impact Readability Scores

(FY 2007 – 08 to 2018 - 19)

Year Ending	Obs.	Total Words			Avg. Sentence			Passive Index		
		Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
2008	11	690.00	263.80	847.00	20.16	3.24	10.5	18.56	13.58	41.00
2009	15	910.00	522.54	1690.00	20.58	3.11	9.70	14.27	10.30	42.00
2010	23	1020.00	640.46	2958.00	21.29	6.36	30.10	17.08	10.10	41.00
2011	26	1062.50	786.55	2837.00	20.06	6.51	27.6	15.73	7.37	27.00
2012	26	1047.04	774.25	3576.00	21.85	4.05	20.60	18.88	9.43	41.00
2013	26	1137.92	929.26	4258.00	21.39	2.47	11.20	17.85	7.74	29.00
2014	27	1264.85	1049.18	4729.00	21.53	3.56	18.10	19.51	8.92	34.00
2015	25	1324.84	1151.01	4903.00	20.61	4.10	24.20	19.56	12.16	44.00
2016	32	1189.43	915.55	4473.00	19.84	5.79	28.80	17.38	7.83	35.00
2017	31	1133.42	796.67	3944.00	21.07	3.56	16.10	17.39	10.41	39.00
2018	30	1183.93	902.04	3848.00	19.01	7.12	28.10	15.93	9.45	38.00
2019	29	1110.13	878.27	3894.00	21.48	3.39	19.50	17.93	8.72	38.00
2007 - 2019	301	1120.66	858.83	5318.00	20.74	4.80	33.00	17.55	9.44	47.00

RQ_4: Is there any statistically significant variation in the readability scores over the sample period FY 2007 - 2008 to FY 2018 – 2019?

H_{01}: There is no significant difference in the readability of LtS as published by listed banking companies during the study period, i.e., FY 2007 – 08 – FY 2018 – 19.

Table 3 depicts the results of one-way ANOVA conducted for establishing the statistical significance of variation in readability metrics over the sample period. Years (grouping or categorical or factor) are considered independent, and readability metrics (continuous) are treated as dependent variables for one-way ANOVA. One way ANOVA test is conducted for all the three readability metrics. The general null hypothesis across the three readability metrics is that the means across all the years is same (H_0:μFY08=μFY09=... μFY19).

Table 3(a) represents ANOVA of FRE, 3(b) represents ANOVA of Fog Index, and 3(c) represents ANOVA of the Bog Index. The sample sizes (no. of LtS) for all the years in the sample period were not the same; hence it was required to check the assumption of 'homogeneity.' It was needed to check whether the variance is approximately equal across groups/years. Levene's test has been conducted to check whether the dependent variable's population variances are equal for all groups. The critical value is more than .05, the null

hypothesis of Levene's test has been retained, and it has been concluded that the population variances for the groups (years) are equal. Based on the p-values (which are greater than .05) of ANOVA as reported in Panel A, B, and C of Table 3, it could be stated that there is no statistically significant difference in year-wise means of the readability metrics (FRE, Fog Index, and Bog Index) over the sample period.

Table (3): ANOVA Test for Significance of Difference of Readability Metrics across Years

	Panel A – Flesch Reading Ease					
	Sum of Squares	**df**	**Mean Square**	**F Value**	**Sig.**	**Null Hypothesis**
Between Groups	648.944	11	58.995	.899	.542	Retained
Within Groups	15937.990	290	65.588			
Total	16586.934	301				
	Panel B – Fog Index					
	Sum of Squares	**df**	**Mean Square**	**F Value**	**Sig.**	**Null Hypothesis**
Between Groups	26.05	11	2.368	.550	.867	Retained
Within Groups	1045.657	290	4.303			
Total	1071.707	301				
	Panel C – Bog Index					
	Sum of Squares	**df**	**Mean Square**	**F Value**	**Sig.**	**Null Hypothesis**
Between Groups	6254.949	11	568.632	1.799	.054	Retained
Within Groups	91361.004	290	316.128			
Total	97615.953	301				

***Levene's F Test of Homogeneity is met at p of .05 (p > .05, Null Hypothesis Retained)**

Analysis until this stage has shown that the complexity of reading ease of bank LtS has increased over time. Still, there is no statistically significant difference in the average readability scores over the sample period. The research question that has been addressed next is whether the readability of LtS of public and private banks or index constituents and non-index constituent banks differ significantly. It is generally presumed that there would be a statistically significant difference between the LtS

signed by Chairpersons of public and private sector banks and banks, which are included in the sectoral index, and banks that are not the part of the index. Table 4 and Table 5 depicts the related comparative descriptive analysis. The related RQ_5, RQ_6 and $H_{02,}$ H_{03} are stated below:

RQ_5: Is there a significant difference in the readability of LtS published by listed public sector banks and listed private sector banks?

RQ_6: Is there a significant difference in the readability of LtS published banking entities, which are the constituents of sectoral indices and banking companies which are not constituent of sectoral indices?

H_{02}: There is no significant difference in the readability of LtS published by listed banking companies representing public and private sector banks.

H_{03}: There is no significant difference in the readability of LtS published by banking companies, which are part of sectoral indices and banking companies that are not part of the sectoral index.

Table (4): Comparative Descriptive Statistics of Readability Metrics (Based on Ownership and Inclusion in Index)

Year Ending	Obs.	Flesch Reading Ease Score			Fog Score			Bog Score		
		Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
Panel A – Public Sector Banks vs. Private Sector Banks										
Public Sector Banks	152	44.50	7.72	12.40	13.92	1.97	12.40	82.70	15.05	114
Private Sector Banks	149	42.12	8.28	52.70	14.90	2.02	12.30	76.02	20.14	137
Panel B – Index Constituent Banks vs. Non-Index Constituents Banks										
Index Constituent Banks	82	43.83	7.46	38.1	14.60	1.98	8.90	71.65	16.61	81
Non-Index Constituent Banks	219	43.08	8.33	52.70	14.34	2.09	13.60	82.30	17.72	130

Table 4 reports the comparative descriptive statistics of readability metrics. Table 4(a) reports the comparative analysis based on ownership of banks (public sector banks vs. private sector banks), and Table 4(b) reports the comparability of readability metrics between listed bank firms which are included in the sectoral index and which are not part of any sectoral index.

Table 4(a) indicates that two out of three readability metrics viz. FRE and Bog Index are higher for public sector banks. FRE of PSBs (M = 44.50, SD = 7.72, N = 152) is greater than FRE of private sector banks (M = 42.13, SD = 8.28, N = 149) and Bog Index of PSBs (M = 82.70, SD = 15.05, N = 152) is greater than Bog Index of private sector banks (M = 76.02, SD = 20.14, N = 149). The results can be considered to indicate that the LtS from Chairpersons of public sector banks are relatively difficult to read. However, the dispersion (SD of readability metrics) is higher for the private sector banks. A higher dispersion indicates that the readability levels of LtS of private sector banks differ from each other.

Table 4(b) reports the comparative analysis of readability scores between the LtS published by index constituents and non-index constituents listed banking entities. Two out of three readability metrics viz. FRE and Fog Index indicate that non-index constituents' banking entities' readability is better than the index constituents. FRE of index constituents banks LtS (M = 43.83, SD = 7.46, N = 82) is more than the FRE of LtS of non-index constituent banks (M = 43.08, SD 8.33, N = 219). Similarly, Fog Index of index constituents banks LtS (M = 14.60, SD 1.98, N = 82) is more than the Fog Index of LtS of non-index constituent banks (M = 14.34, SD = 2.09, N = 219). The dispersion of the readability scores (SD) is high in the case of non-index constituents. A higher dispersion indicates that the readability levels of LtS of non-index banks differ from each other.

Table (5): Comparative Descriptive Statistics of Metrics that Impact Readability (Based on Ownership and Inclusion in Index)

Year Ending	Obs.	Total Words			Avg. Sentence			Passive Index		
		Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
Panel A – Public Sector Banks vs. Private Sector Banks										
Public Sector Banks	152	1226.77	975.07	5318	20.92	4.52	33.00	17.50	9.27	45.00
Private Sector Banks	149	1012.40	708.33	3539	20.56	5.07	30.10	17.60	9.65	47.00
Panel B – Index Constituent Banks vs. Non-Index Constituents Banks										
zIndex Constituent Banks	82	1398.74	1046.79	4253	21.47	3.15	15.30	17.23	8.79	47.00
Non-Index Constituent Banks	219	1016.53	753.61	5318	20.47	5.27	33.00	17.67	9.69	45.00

Factors like the number of total words (document length), average sentence length (longer or shorter sentences), and the presence of the high or low passive voice in the text would make the text more (or less) readable.

The average total number of words indicates the length of the LtS. An increase in the length of the document could decrease the readability. Table 5(a) depicts that the overall length of LtS of public sector banks (M = 1226.77, SD = 975.07, N = 152) is more than the overall length of LtS of private sector banks (M = 1012.40, SD = 708.33, N = 149). Similarly the average sentence length of public sector banks (M =20.92, SD = 4.52, N = 152) is more than the average sentence length of (M =20.56, SD = 5.07, N = 149). Both the total number of words and higher sentence length could have made the LtS of public sector banks less readable than private sector banks LtS.

Table 5(b) reports the comparative analysis of total words, average sentence length, and passive voice of index constituents and non-constituent banking companies. The average total length of the LtS (as measured by total number of words) of index constituents banks (M = 1398.74, SD = 1046.79, N = 82) is greater than that of non-index constituents (M = 1016.53, SD = 753.61, N = 219). Average sentence length of index constituents LtS (M = 21.47, SD = 3.15, N = 82) is greater than non-index constituents (M = 20.47, SD = 5.27, N = 149). Both these factors that influence the readability score could have made the LtS of index constituent's banks less readable than the LtS of non-index constituents.

Further, to test the statistical significance of the readability of LtS based on ownership (public and private sector banks) and inclusion in the index (index constituents and non-index constituents) two-sample independent t-test was conducted. Table 6 reports the results:

Table (6): t-Test for Two Independent Samples Based on Ownership and Index

Panel A – Independent Sample t-Test Based on Ownership								
Readability Metric	**Mean of Public Sector Banks**	**Mean of Private Sector Banks**	**Mean Diff.**	**95% CI Lower**	**95% CI Upper**	**t**	**df**	**p-Value**
FRE Score	44.50	42.12	2.38	.40	4.35	2.369	299	.019
Levene's Test for Equality of Variance: p-value .662, Equal variance assumed.								
Fog Index	13.92	14.90	-0.98	-1.47	-.486	3.913	299	000
Levene's Test for Equality of Variance: p-value .413, Equal variance assumed.								
Bog Index	82.70	76.02	6.68	2.63	10.71	3.249	299	.001
Levene's Test for Equality of Variance: p-value .011, Equal variance not assumed.								

Panel B – Independent Sample t-Test Based on Inclusion in Index								
FRE Score	43.83	43.08	0.75	-1.441	2.95	.678	299	.498
Levene's Test for Equality of Variance: p-value .323, Equal variance assumed.								
Fog Index	14.60	14.34	0.26	-.298	.818	.916	299	.360
Levene's Test for Equality of Variance: p-value .990, Equal variance assumed.								
Bog Index	71.65	82.30	-10.65	-15.091	-6.209	.299	299	.000
Levene's Test for Equality of Variance: p-value .221, Equal variance assumed.								

Table 6(a) reports the results of the t-test conducted between public and private sector banks. The P-value of FRE and Bog Index show that the difference of readability metric between public and private sector banks is not statistically significant. However, based on the p-value of the Fog Index, it could be concluded that there is a statistically significant difference among the readability metrics of public and private sector banks. Table 6(b) reports that the difference of readability levels as measured by FRE and Fog Index of index constituents and non-index constituents firms are not statistically significant (p-values of FRE and Fog Index are higher than .05). However, as per Bog Index (p-value less than .05) it could be stated that there is a significant difference between the readability levels of the index and non-index banks.

Past research in the domain of corporate disclosure readability analysis has gone into factors that would have influenced the reading of the financial narratives. Firm size, ownership, profitability, personal profiles of the Chairpersons are few of the factors that could influence the reading ease of financial narratives. A study Aerts (2015) acknowledges that cross-sectional and temporal variation in narrative accounting disclosures could be due to internal sources such as changes in performance, the establishment of routines, and structures of corporate governance. On the other hand, external factors such as regulatory monitoring, analyst following, or litigation risks could also influence the narratives in financial reports. As this study's scope was not aimed to address these issues, a systematic potential study that could address the underlying relationship between firm features and the readability of narratives in ARs could be a useful step forward.

CONCLUSION

The culture of investing in 'Equities' is still considered as 'Low' in India. One reason could be that an average Indian is not fully conversant with the risks and returns of the equities and the financial markets' functioning. It would take time and efforts to expand financial literacy among the population at the grass-root level or among India's rural and semi-urban areas. The general literacy levels of Indians are increasing considerably, but they may not be sufficient enough to understand more delicate details of financial markets and financial reporting. Today the financial markets are flooded with listed entities and they are regularly communicating

with the stakeholders. One of the core and popular medium through which the listed firms communicate with the stakeholders (mainly shareholders) is the annual report. The readability is not an issue only for shareholders; even the financial institutions or credit rating agencies prefer a well-written financial narratives. Research findings by Bonsall and Miller (2017) indicate that less readable financial disclosures are related to not-so-favorable bond ratings that lead to a higher cost of debt. Textual financial disclosure attributes influence the intermediaries in bond markets. The 'Letter to Shareholders' (LtS) is considered one of the discretionary but popular annual report segments. The past research has shown that seasoned investors would prefer to read and analyze the contents of LtS for making informed investment decisions.

In this backdrop, the readability of the LtS becomes the focus of researchers. The current study is one among the few studies that are aimed to analyze the narrative segments of ARs. In the present study, a longitudinal readability analysis of the letters signed by the Chairpersons of banking companies has been undertaken. In general, it is reported that the readability levels of these LtS are on a lower end. Further, the findings reveal that the complexity in readability has increased over the sample period. If the readability of these LtS is improved, it could benefit an average Indian investor to understand the functioning of the company. Better readability and a better understanding of the company's financial future are expected to increase more equity investments. Similar to SEC Plain English Initiative, the financial market regulator of India SEBI could also provide guidelines for better readability and comprehension of the accounting or financial narratives. The narratives in Indian ARs are expected to be more reader-friendly.

BIBLIOGRAPHY

Aerts, W. (2015). Narrative Accounting Disclosures. Wiley Online Library. doi:https://doi.org/10.1002/9781118785317.weom010055

Ambler, T., & Neely, A. (2007). Narrative Reporting in Company Annual Accounts. ***SSRN Electronic Journal.***

Beattie, V., McInnes, B., & Fearnley, S. (2004). A Methodology for Analysing and Evalauting Narratives in Annual Reports: A Comprehensive Descriptive Profile and Metrics for Disclosure Quality Attributes. Accounting Forum 28, 205 - 236.

Binh, T. Q. (2012). Voluntary Disclosure Information in the Annual Reports of Non-Financial Listed Companies: The Case of Vietnam. ***Journal of Applied Economics and Business Research (JAEBR)***, 2(2), 69 - 90.

BOESLER, M. (2013, March 1). The 5 Greatest Letters Warren buffett Has Ever Written. Retrieved June 18, 2020, from www.businessinsider.in

Bonsall, S. B., & Miller, B. P. (2017). The Impact of Narrative Disclosure Readability on Bond Ratings and the Cost of Debt. ***Review of Accounting Studies,*** 22, 608 - 643.

Bonsall, S. B., Bozanic, Z., & Merkley, K. (2013). The informativeness of forward-looking news in earnings announcements. The Ohio State University.

Bonsall, S. B., Leone, A. J., & Mille, B. P. (2014). A Plain English Measure of Financial Reporting Readability. SMU Seminar Series.

CBINSIGHTS Research Briefs. (2020, April 27). 23 Lessons from Jeff Bezos' Annual Letter to Shareholders. Retrieved June 18, 2020, from www.ciinsights.com

Clatworthy, M., & Jones, M. J. (2003). Financial Reporting of Good News and Bad News: Evidence from Accounting Narratives. ***Accounting and Business Research***, 33(3), 171 - 185.

CPA Australia. (2019). A Guide to Understanding Annual Reports: Australian Listed Companies. HLB Mann Judd.

Dale, E., & Chall, J. (1948). A Formula for Predicting Readability . ***Educational Research Bulletin***, 27(1), 11 - 28.

Daraz, L., Morrow, A. S., Ponce, O. J., Farah, W., Katabi, A., Majzoub, A., . . . Murad, M. H. (2018). Readability of Online Health Information: ***A Meta-Narrative Systematic Review*** . Am J Med Qual, 33(5), 487 - 492.

Dorrell, J. T., & Darsey, N. S. (1991). An Analysis of the Readability and Style of Letters to Stockholders. ***Journal of Technical Writing and Communication***, 21(1), 73 - 83.

Garefalakis, A., Dimitras, A. I., Floros, C., & Lemonakis, C. (2016). How Narrative Reporting Changed the Business World: Providing a New Measurement Tool. ***Corporate Ownership and Control***, 13(4), 317 - 334.

Hanano, E. J. (2017, November 7). Pearls of Wisdom - The Best Shareholder Letters Nobody is Reading. Retrieved June 16, 2020, from www.toptal.com

Hooghiemstra, R. (2010). Letters to the Shareholdersz: A Content Analysis Comparison of Letters Written by CEOs in the United States and Japan. ***The International Journal of Accounting***, 45(3), 275 - 300.

KPMG. (2015). A Practical Guide to the Business Review. KPMG.

Li, F. (2008). Annual Report Readability, Current Earnings, and Earnings Persistence. ***Journal of Accounting and Economics,*** 45(2-3), 221 - 247.

Loughran, T., & McDonald, B. (2009). Plain English, Readability and 10-K Filings. American Finance Association.

Loughran, T., & McDonald, B. (2014). Measuring Readability in Financial Disclosures. ***The Journal of Finance.***

Madhani, P. M. (2008). Corporate Disclosure: Concepts and Practices. Hyderabad: The ICFAI University Press.

Martin, E. (2019, February 25). Warren Buffett writes his annual letter as if he's talking to his

sisters - Her's why. Retrieved June 17, 2020, from www.cnbc.com

Mcconomy, B. J., & Bujaki, M. (2010). Voluntary Disclosure in Corporate Annual Reports - More than Meets the Eye. In CMA Management. CMA Canada.

Moreno, A., & Casasola, A. (2016). A Readability Evolution of Narratives in Annual Reports: A Longitudinal Study of Two Spanish Companies. ***Journal of Business and Technical Communication***, 30(2), 202 - 235.

Murphy, A. C. (2013). On "True" Portraits of Letter to Shareholders - and the Importance of Phraseological Analysis. ***International Journal of Corpus Linguistics***, 57 - 81. doi:10.1075/ijcl.18.1.06mur

Newell, C. (n.d.). Editing Tip: Sentence Length. (AJE Scholar) Retrieved from www.aje.com

Nirmaldasan. (n.d.). Readability Monitor. (strainindex.wordpress) Retrieved from www.strainindex.wordpress.com

Pivac, S., Vuko, T., & Cular, M. (2017). Analysis of Annual Report Disclosure Quality for Listed Companies in Transition Countries. Economic Research-Ekonomska Istraživanja, 30(1), 721 - 731.

Sattari, S. (2012). Essays on the Issues of Readability in the Business Disciplines. Luleå University of Techonology.

Souza, J. A., Rissatti, e. C., Rover, S., & Borba, J. A. (2019). The Linguistic Complexities of Narrative Accounting Disclosure on Financial Statements: An Analysis Based on Readability Characteristics. ***Research in International Business and Finance***, 48, 59 - 74.