Measuring Readability of Segment Reports of Indian Companies

Abstract

Investors and regulators have expressed concern about the increasingly complex financial reports that are difficult for novice investors to understand. In the same context, the present study examines the easiness of reading the segment reports of Indian listed companies. It employed Flesch reading ease and Flesch Kincaid grade level for measuring the readability statistics of such reports. It is found that the reading score is not in desirable range and have extreme difficulty in reading and understandability i.e. these reports can only be used and interpreted by professionals. As a result, it is urged that Indian companies need to improve the sentences, language, and vocabulary of the segment reports. More passive sentences are also proven to make reports less meaningful, making it more challenging to read and comprehend what the report is trying to say. Thus, to enhance the readability score of segment reports, qualitative characteristics need to be increased with less use of passive sentences.

Keywords: Segment Reports, Readability, Flesch Reading Ease, Financial Companies, Non-Financial Companies Flesch Kincaid Grade level.

Introduction

Financial reports are meant to inform those persons who do not have access to its internal information. In order to ensure that the general investing public can grasp the facts in such reports and utilize them to make informed decisions about the firm, financial reports must be clear as well as understandable **(Xua, Tam, & Fernando, 2018).** In fact, 'understandability' is regarded as one of the most important qualitative characteristics of financial reports under FASB reporting framework. Now a days, investors are turning away from annual reports due to use of jargon and wordiness language and depend on third party information for making their decision. Therefore, readability is gaining important concern for the investor and regulators. Understandability depends on the readability level of any report and the readability level is always expected to be in range that can be understood by most of its users. Apart from meeting legal requirements financial information of business enterprise is always desirable to be readable

in the context of usefulness of that report **(Stone & Lodhia, 2019).** Therefore, the architecture of such reports needs to take care of their readability aspects of financial reports during their preparation.

Readability to a great extent is expected to have an impact on usefulness of the said reports in reference to varying knowledge of investors. Keeping this aspect in view, the academician and researchers have considered the measurement of readability level of corporate financial reports for their research purpose. In good amount, the readability level of different sections of corporate annual reports has been determined and evaluated by the researchers of this discipline. In this regard, the major focus of such researches has been around CSR, explanation of financial statements, corporate governance, MD&A, auditor's report, business responsibility reports and board report and complete annual report in general. Among all these reports, segment reports also occupy a significant position. The readability of segment disclosures deserves to be evaluated in depth separately so, that the frame of readability level of different sections of Annual reports can be properly designed as far as improvement in the language and tone is concerned particularly. That is why the present study fills the said purpose and may be useful with regard to understandability of annual reports of Indian companies with regard to segment disclosures.

Segment reports encompass both quantitative as well as qualitative information of the companies and hence those disclose financial information to corporate manager, creditor investor, government agencies to stimulate them to make informed decisions. The information provided by company on segment basis help investors to evaluate company in more comprehensive manner **(Kumar & Sridharan, 2014)**. Further segment disclosures help in identifying non-contributing segments, improve corporate financial reporting, aid in better risk management (**Shetiya & Saraf, 2017)** and influence earnings forecasts **(Gutsche & Rif, 2019).** Due to importance of segment reports to various concerned parties' readability of these segment reports becomes an important area for investigation. In the last couple of years, IFRS and Ind-AS 108 have forced companies to provide segment wise details.

Concept of Readability

A text's readability refers to how simple it is to read and comprehend it, depending on its special characteristics. This can be determined by looking at metrics like the no. of words in a sentence or the variation in words used to determine a sentence's "level" or a readability score. Sentence complexity, vocabulary complexity, and the percentage of passive voice are indicators of a text's readability. “Readability tries to match the ability of reader and text and then tries to get the ease to read of a text for the reader. Readability is that quality in writing which results in quick and easy communication. There exist various methods for measuring the readability of reports but the current study uses Flesch reading ease and Kincaid grade level.

Literature review

There exist numerous studies on readability in context of different parts of financial reports and disclosures but readability of segments reports is least studied. Li (2006) had looked at the reading ease and style of writing of annual reports of the companies using the large firms sample from 1993 to 2003 for predicting future firm earnings & returns, and the study found that while profit giving firms with more complex reports have a low level of consistency in earnings, these measures are not correlated with stock returns. In their study of the readability and level of disclosure of sustainable reporting in Sweden during the financial crisis of 2008, Ernfjord & Gustafsson (2014) utilized the "Flesch reading ease formula" to gauge how simple it was to read the report. They came to the conclusion that readability, as judged by the Flesch reading ease formula, remained the same and the amount of revelation rose throughout the 2008 financial crisis.

Moreno & Casasola (2015) utilized the Flesch reading easiness formula to examine the readability of two Spanish companies. The Flesch easiness formula primarily took into account the English language. Their research revealed that reports were challenging to read, but that the readability has improved with time. Richards and Staden (2015) compared readability in pre and post IFRS adoption. The results indicated significant relation between IFRS adoption and readability and added that adoption of IFRS added more complexity to financial reports.

Xua, Tam and Fernando (2018) examined the relation between readability and executive age of financial reports and resulted that reading ease can improve age of executive. Thus also recommended that firm needed to improve readability of reports. Stone & Lodhia (2019)

examined the readability of Integrated Reports in Indonesia. The study highlights low readability of reports and suggested use of visual communication and structural presentation.

Adhariani & Toit (2020) examined into how well-written sustainability reports are in Indonesia. To assess the readability of sustainability reports, it makes use of a variety of linguistic approaches, including Flesch Reading Ease (FRE), Flesch-Kincaid, and Gunning Fog measurements. Readability Studio 2015 was used to do the analysis. The reports emphasized the reports' poor readability. This indicates that the targeted users would find it very challenging to interpret and decipher the information offered in the disclosures.

Belen Blanco, Corama, Dhole, & Kent (2021) linked readablity with the auditors efforts. It clearly indicate that low readablity is associated with high auditors efforts in turn longer audit delays for US firms. These studies highlighted the importance of readability level of financial reports.

Objective and Methodology

The present study aims to check the readability score as well as examine the relationship between different dimensions of readability with regards to segment reports of selected companies listed in Bombay Stock Exchange. The study has examined segment reports of ten companies included in BSE 30 SENSEX as on 30th June, 2021. These companies were further segregated as financial and non- financial companies and under non-financial head top five companies were selected which belongs to IT sector on the basis of their market capitalization. Further, the segment reports of these ten companies for the year 2020-2021 are considered.

Tools for Measuring Readability

Flesch Readability Scores

Flesch readability scores developed by Rudolf Flesch in (1948) are the most popular and widely used tool for measuring readability. A text is given a readability score by the Flesch Reading Ease between 1 and 100, with 100 being the greatest score. This method of assessing readability takes into account word count and sentences. The mathematical formula is as follows:

Flesch readability score = 206.835 – (1.015 * words per sentence) – (84.6 * syllables per word)

Flesch Kincaid Grade level

Flesch Kincaid Grade level is the modified version of Flesch readability score developed in 1970 in which reading grade level of a text is evaluated approximately. The Flesch-Kincaid Grade Level corresponds to the educational grade level in the US and present score as US grade level. The mathematical formula is as follows:

Flesch Kincaid grade level = (11.8 * syllables per word) + (0.39 * words per sentence) – 15.59

Both tests reflect readability score. The Kincaid Grade Level follows the US educational system and the Reading Ease score ranges from 1 to 100. Although the same units are used in both calculations, the weightings for these units vary the two tests, leading to differing scores. The results of the these tests correlate inversely; a text with a relatively high score on the Reading Ease test should have a lower score on the Grade-Level test.

Table 1: Readability Scorecard under Flesch Reading Ease and Kincaid grade level

Readability Score	**Kincaid grade level**	**Ease of readability**
100-90	5th grade	Very simple to read and understand for a typical 11-year-old learner.
90-80	6th grade	Easy to read
80-70	7th grade	Fairly easy to read
70-60	8th & 9th grade	Understood Easily by 13- to 15-year-old students
60-50	10th to 12th grade	Fairly difficult to read
50-30	College	Difficult to read, (best understood by college graduates)
30-10	College graduates	Very difficult to read, (best understood by university graduates)
10-0	Professional	Extremely difficult to read.

Source: https://en.wikipedia.org/wiki/Flesch%E2%80%93Kincaid_readability_tests

The annual reports of selected companies have been procured from their respective official website and there after extracted segment report from it. All the pdf versions of segment reports

were converted into doc file using various pdf to doc converter using online tool. The readability statistics has been calculated using Grammar option of MS Word which gives detailed statistics of readability like length of sentences, word length, length of sentences, and percentage of words per sentences, length of sentences per paragraphs, Flesch readability score. All these relevant statistics were tabulated into SPSS file for computation of further descriptive and relationship between obtained statistics.

Analysis and Discussion

As mentioned above, the readability score of each set of companies is calculated separately as per the procedure of Flesch readability score. The result of analysis is presented in Table 2:

Table 2: Readability Score of Segment Reports: Application of Flesch Readability Ease Formula

	Minimum	**Maximum**	**Average**
Flesch readability score of Financial Companies	1.60	18.30	22.86
Flesch readability score of Non- Financial Companies	13.70	36	9.24

Source: Compiled from Annual Reports of Companies

Table 2 highlights the readability score of both financial and non-financial companies. It clears that the maximum reading ease score is 18.30 and lowest is 1.60 in case of financial companies while maximum reading ease score is 36 and minimum is 13.70 in case of non-financial companies. The average readability score of financial companies is 9.24 and 22.86 in case of non-financial companies. The average score in both the case is lowest and lies in the range of 0-30 indicating difficulty to read. Thus, readability level of segment reports is quite low and can only be understood by experts and professional in that fields.

Table 3: Descriptive Statistics of Segment Reports of Financial Companies: Application of Flesch Reading Formula and Flesch Kincaid Index

	Words	Sentences	Passive sentences	Flesch Reading Score	Flesch Kincaid Index
Mean	1559	41.2	20.80	22.86	14.44
Std. Deviation	607.25	13.89	10.35	9.22	2.313
Minimum	904	25	10	13.70	11.80
Maximum	2311	56	36	36	17

Source: Compiled from Annual Reports of Companies

Table 3 highlights the descriptive statistics of readability indicators in case of financial companies. The minimum word length of segment reports is 904 and maximum is 2311 with average mean of 1559 which indicate that these reports are not very lengthy. The minimum numbers of sentences used in segment reports are 25 and maximum are 56 with mean and standard deviation of 41.2 and 13.89. The result indicates more usage of passive sentences as it lies in the range of 10-36 with mean and standard deviation of 20.80 and 13.89. More use of passive sentences increases the difficulty level associated with the reading of reports. Flesch reading ease score and Kincaid index both lies in the range of (0-30) with score of 22.86 and 14.44 indicating extreme difficulty level of these reports with regard to their readability.

Table 4: Descriptive Statistics of Segment Reports of Non-Financial Companies: Application of Flesch Reading Formula and Flesch Kincaid Index

	Words	sentences	Passive sentences	Flesch Reading score	Flesch Kincaid Index
Mean	1221	32.80	41.4	9.24	17.60
Std. Deviation	847.22	30.43	17.02	7.22	2.083
Minimum	651	15	26	1.60	14.20

Maximum	2667	87	66	18.30	19.60

Source: Compiled from Annual Reports of Companies

The descriptive statistics of readability indicators for non-financial companies are highlighted in Table 4. The word length for segment reports ranges from 651 to 2667, with an average mean of 1221. This shows that non-financial reports are longer than financial reports. With a mean and standard deviation of 32.80 and 30.43, segment reports include anywhere between 15 and 87 sentences. Passive sentences have minimum and maximum score of 26 and 66 and have a mean and standard deviation of 41.4 and 17.02, this shows that more passive sentences have been used. The level of effort involved with reading reports rises as more passive sentences are used. Here again, Flesch reading ease score and the Kincaid index fall within the (0–30) range with scores of 9.24 and 17.60 indicating that reading of reports is extremely difficult.

Table 5: Relationship among different indicators of readability of Segment Reports of Financial Companies: Application of Pearson Correlation Method

	Length of words	**Length of sentences**	**Number of passive voice sentences**	**Flesch Kincaid Index**	**Flesch Reading Ease**
Words	1	.963	-.141	-0.30	.210
Sentence		1	-.276	.153	.040
Passive sentences			1	.073	-.225
Flesch Kincaid Index				1	-.974
Flesch Reading Ease					1

Source: Compiled from Annual Reports of Companies

The table indicates association between different indicators of readability. It is found that length of words and sentences is positively correlated with reading ease score while there exist negative

relation between reading ease and passive sentences. Thus, this is clear indicative that use of passive sentences need to be kept minimum to enhance the readability level of segment reports. As far as Kincaid index is concerned it is positively correlated with length of sentence and negatively with words length.

Table 6: Relationship among different indicators of readability of Segment Reports of Non-Financial Companies: Application of Pearson Correlation Method

	Length of words	**Length of sentences**	**Number of passive voice sentences**	**Flesch Kincaid Index**	**Flesch Reading Ease**
Words	1	.953	-.486	.309	.002
Sentence		1	-.553	.515	-.188
Passive sentences			1	-.662	.422
Flesch Kincaid Index				1	-.919
Flesch Reading Ease					1

Source: Compiled from Annual Reports of Companies

This table shows that Flesch reading ease is positively correlated with word length, passive sentences and negatively with sentence length and Kincaid grade index in case of non-financial companies. But as far as positive relation is concerned it exists at a low level or there exist low degree of correlation. If the individual dimension is concerned words and length of sentences are found highly positively related with each other which mean more words leads to formation of more sentences. As far as Kincaid grade is concerned it is positively correlated with length of words and sentences while negatively with passive sentences. This is clear indication that use of passive sentences need to kept low for enhancing the readability of reports.

Conclusion

The study examined the reading ease of segment reports of Indian listed companies. The result indicates that overall readability score is not at desirable level in case of the selected financial and non- financial companies. The overall score lies in the lowest layer (0-30) which indicates extreme difficult level of reading which is beyond the understanding of the investing person particularly for retail investors. Thus, it may become difficult for them in analyzing and taking appropriate decisions. Apart from overall score, use of passive sentences is also found to be negatively correlated with reading ease. More passive sentences are also proven to make reports less meaningful, making it more challenging to read and comprehend what the report is trying to say. Moreover, brief sentences and words are required in segment reports in order to make their reading easier.

Thus it can be concluded that to enhance the readability score of segment reports, qualitative characteristics need to be increased with less use of passive sentences. If there exists an optimum combination of all these dimensions or indicators, then reading ease can be improved to enhance the usefulness of segment information with regard decision making process of investors.

Moreover, the study suffers from limitation which can become base for future research. The data set used for checking the readability ease of company is limited to ten companies and only Flesch reading ease and Flesch Kincaid grade level have been used .To overcome the limitation of the study, a big set of companies from different sectors can be studied with large time frame. Further, the readability score comparison of Indian and Foreign companies can also be ascertained using different formulas. The association of other different features of companies like performance, governance practices, size etc. with the readability score of segment information may be investigated in Indian context.

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