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**UNRAVELING THE READABILITY QUOTIENT IN ACCOUNTING
REPORTS; CASES FROM EGYPTIAN FAMILY FIRMS**

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Abstract

This study explores the readability of financial reports within the setting of Egyptian family firms. The research intends to analyze whether Egyptian family-owned firms show a high level of readability in their financial reporting. The data reveal a noteworthy emphasis on readability in financial reports by these firms (measured by both Fog and Flesch Reading Ease index), motivated by a traditional perception that users, investors, and related stakeholders hold a high level of confidence in the success of family-owned firms. This confidence is related to the owners' sense of responsibility for managing the company and their strong tendency to portray the financial performance optimally in terms of both form and content. The study reveals that the emphasis on readability in financial reporting within Egyptian family firms is affected by a desire to create trust among stakeholders, suggesting a strategic approach to communication that coincides with the perceived strengths of family-based ownership. These findings aid in understanding the cultural and strategic elements affecting financial reporting methods in the Egyptian business sector.

Keywords: Readability, Family business, Fog index, Flesch Reading Ease index, Annual reports, Egyptian Stock Exchange.

1. Introduction

The concept of readability has garnered significant interest from scholars across various disciplines, owing to its crucial significance for a wide range of users. In the famous mentioned paper by Dale and Chall (1949), the readability emphasized on the significance of not just the content and the reader's background knowledge, but also the organization or presentation of the information to readers. In the field of Accounting, Loughran and McDonald (2016), readability is “the ability of the reader to decipher the intended message” and “the ability of investors and analysts to integrate valuation relevant information from the business document into stock prices.”

For Accounting, readability holds significance for due to various factors;

- From stakeholders and shareholders perspective: by evaluating the financial information quality and reducing information asymmetry (Lee, 2012 and Boubaker et al, 2019, Bhattacharya et al, 2013).
- From decision making perspective: by introducing the relevant information (Harjoto et al. 2020).
- From disclosure perspective: by avoiding the managers obfuscation financial information (Courtis, 2004 and Elkins and Entwistle, 2018).
- From information asymmetry perspective: by furnishing stakeholders with unambiguous, precise, and easily understandable financial information (Leung et al. 2015).
- From researchers' perspective: by understanding the firm and the managerial strategy through firm disclosure (Loughran and McDonald 2016).

Literature demonstrates theoretically and empirically that greater and better disclosure of information reduces asymmetry (Tran, 2023, Jordan, 2019, and Brown et al., 2022). However, the majority of previous research has mostly concentrated on quantitative data when evaluating the quality of disclosures, so neglecting a crucial aspect that defines corporate reporting - qualitative information presented in textual form. The limited amount of study in this area may be partially explained by the absence of evidence regarding whether corporate narratives provide value-relevant information beyond what is already included in quantitative disclosures.

Previous studies of Guay et al, 2016; Xu et al, 2020; Merkl-Davies & Brennan, 2007; Mullainathan & Shleifer, 2005) have demonstrated that investors exhibit cognitive biases when processing information, specifically in regards to the presentation of information. It is expected that disclosures characterized by greater language complexity will present further challenges for investors in terms of their ability and willingness to interpret the submitted documents which considered as substantial obstacle to interested users and investors as it required a cognitive effort by readers to absorb and analyze a considerable volume of written content, especially when it pertains to the comprehension of information offered in corporate reports.

Also, Richard et al (2015) aimed to reveal significant correlations between different types of disclosure and tactics for managing impressions. The study analyzes a dataset of 824 disclosures from corporations listed in Australia and New Zealand. The analysis reveals limited evidence of intentional manipulation of readability, which obscures the disclosures of underperforming firms in a manner that closely resembles the disclosures of better-performing enterprises. Additionally, the study reveals that disclosures expressed in a positive manner are more easily comprehensible compared to those conveyed in a negative manner.

The current significance of the readability of accounting information stems from its critical role in serving the needs of both internal and external users of accounting and financial information, as well as various official and informal entities such as tax authorities, banks, stock exchanges, regulatory bodies, and unions. According to Bloomfield's (2002) study, the prevailing discourse on management opportunism posits that managers have a tendency to deliberately withhold information when faced with subpar performance. If managers deliberately utilize disclosure readability as a tactic to conceal negative facts, it is reasonable to anticipate a correlation between business performance and readability. Diamond & Verrecchia (1991) show that more public disclosure is an effective method for firms to overcome adverse selection issues. By making private information public, firms improve the liquidity of their shares.

(Luo et al., 2018) examined the readability of the annual reports of Chinese companies between 2001 and 2015, with a specific emphasis on agency costs. Their findings indicate that companies with greater readability have reduced agency costs, which is especially evident in firms with higher external audit quality, internal control quality, or analyst coverage. Furthermore, they found that enhancing readability enhances the transparency of corporate information and reduces information asymmetry, leading to a more accurate evaluation of corporate performance and value as well as better monitoring of opportunistic behavior. In addition, they state that both the external audit and internal control quality are vital to improving the accuracy of accounting earnings. As a result, analysts become the main recipients of corporate annual reports, which in turn increases the effectiveness of annual report readability in reducing corporate agency costs.

Financial reports have garnered significant scholarly scrutiny in the realm of financial reporting and disclosure due to the widespread acceptance of the managerial obfuscation theory. In a further study conducted by Li (2008), it was discovered that managers purposefully engage in the practice of obscuring information or footnotes when the performance of the organization is subpar. Consequently, this results in annual reports that are challenging to comprehend. On the contrary, the administration of the company exhibiting exceptional performance demonstrates a greater inclination towards transparency in terms of information dissemination.

The remainder of the paper proceeds as follows; research problem and research objectives, Theoretical Framework, Literature Review and Hypothesis Development, Research Methodology, Statistical Analysis and Empirical Results, Results Discussion, Limitations and Future Research, and Summary and Conclusions.

1.1 Research Problem

In light of significant advancements across multiple domains, it has become crucial to optimize the utilization of resources that enhance the overall value of a company. Financial statements are often regarded as the primary means by which organizations communicate their financial information. It is crucial that these statements are easily

understandable to cater to the needs of those seeking to make informed decisions. The current growth in Egypt aims to establish systems for adhering to various statutory and optional disclosures. However, a challenge has emerged in presenting these disclosures in a manner that is easily readable to external parties that are interested specially when related to family- owned business.

1.2 Research objectives

Understanding the factors contributing to the readability of financial reports is critical for promoting transparency and facilitating informed decision-making in the Egyptian context. The current study¹ objectives are:

- To explore the current readability levels of financial reporting in selected Egyptian family firms.
- To identify the factors influencing the readability of financial reports in the selected Egyptian family firms.
- To assess the implications of improved readability on stakeholder decision-making and financial transparency in Egypt.

2. Theoretical framework

2.1 The Readability measures

Readability measures assess the level of comprehension that readers can achieve when reading written content. They take into account variables such as the length of sentences, the difficulty of words, and the overall organization of the information. These assessments employ diverse formulas and algorithms, such as the Flesch Reading Ease, Gunning Fog Index, and Coleman-Liau Index, to evaluate the level of readability in a given text. The purpose of these measures is to improve communication efficacy and make sure that content is accessible to a wide range of people by analyzing readability. These insights offer numerical information about the level of readability, helping authors and communicators customize their content for certain reader demographics and enhance overall understanding. Integrating

^{1 1} The study required a duration of time spanning from June 2023 to January 2024 in order to sufficiently gather, arrange, and examine data. This was necessary due to the challenge of accessing financial reports in English, as several listed Egyptian family firms on the Egyptian Stock Exchange publish their financial reports in Arabic.

readability metrics is essential for producing coherent and user-friendly information in educational, business, and literary settings, which enhances comprehension and reader involvement.

2.1.1 SMOG Index

The Simple Measure of Gobbledygook² (SMOG) index by (Mc Laughlin, 1969) provides an estimate of the number of years of formal education needed for a person to easily understand a given written content. In order to make written documents readable by a wide audience, the SMOG index is widely used in a number of fields, such as communication, healthcare, and education.

The SMOG index is a method that looks at the frequency of polysyllabic words in a sample to assess the reading grade level of a given book. Words with three or more syllables are considered polysyllabic. The following formula is used to calculate the SMOG index:

$$\text{SMOG Index} = 1.0430 \times \sqrt{(\text{Number of polysyllabic words} \times (30 / \text{Number of sentences}))} + 3.1291$$

The square root of the number of polysyllabic words multiplied by 1.043, multiplied by 30, and added to 3.1291 is the formula used to calculate the SMOG Index.

To make use of the SMOG index, a count of thirty sentences taken from the text must be made in order to identify every phrase that has more than one syllable. After determining the total number of polysyllabic words, the formula is used to determine the reading grade level required for the text to be well understood. When the SMOG index is 12, for instance, it means that people with an education level of 12 years or above may easily understand the content.

2.1.2 Dale-Chall score

The Dale-Chall score by (Dale & Chall, 1949) is a quantitative method for determining a text's degree of difficulty, evaluate the readability of English texts, with an emphasis on fourth-graders and older readers. To determine the text's reading level, the algorithm considers a list of commonly used terms that fourth-grade students are likely to be familiar with, as well as the average sentence length.

² The phrase "Gobbledygook" is employed to characterize language that is excessively convoluted.

The percentage of terms in the text that do not appear in the Dale-Chall list of regularly used vocabulary and the average sentence length are the two main components of the Dale-Chall formula. The Dale-Chall score is calculated using the following mathematical equation:

$$64 - (0.95 \times 100 \times \frac{n_{wd}}{n_w}) - (0.69 \times ASL)$$

Where n_{wd} refers to the number of difficult words, n_w stands for the total number of words in the text, and ASL is the average sentence length.

The final Dale-Chall score is produced by dividing the raw score into a grade level that corresponds to the number of school years required to easily understand the material. It is widely accepted that the score serves as a gauge for the grade level at which the text is understandable. For example, a score of 5.5 indicates that the content has an understanding level appropriate for a fifth-grader, or a student in their fifth month of formal study.

2.1.3 Flesch Reading Ease Index

Flesch Reading Ease Index (Flesch, 1948) is used to determine how simple it is to understand a certain text piece. The readability score of the text is determined by a formula that takes into account various parameters, such as the average number of syllables per word and the average number of words per sentence. The Flesch Reading Ease Index formula is as follows:

$$\text{Reading Ease Score} = 206.835 - (1.015 \times \text{Average number of words per sentence}) - (84.6 \times \text{Average number of syllables per word})$$

Usually, the score falls between 0 and 100. Lower ratings indicate greater understanding difficulties, whereas higher scores indicate simpler readability. Flesch Reading Ease scores are frequently interpreted using the general parameters listed below:

90–100: Extremely simple.

80–89: Conversational English that is easy to read for a broad audience.

70–79: Generally simple to read.

60–69: Standard readability.

50–59: Suitable for recent high school grads; rather challenging to read.

30–49: Tough to read; best suited for recent college graduates.

0-29: Very hard to read; only those with a university degree should attempt this.

The Flesch Reading Ease Index has been subject to criticism by researchers due to its limited consideration of comprehension factors. These factors include subject area expertise, complexity, and relevancy of the text, which are not adequately accounted for in the index.

2.1.4 Fog Index

The Fog Index (Gunning, 1952) is an additional tool utilized to assess the readability of a given written passage. The difficulty of a text is assessed by taking into account both the mean sentence length and the quantity of sophisticated vocabulary employed throughout the piece. The formula utilized for computing the Fog Index is as follows:

$$\text{Fog Index} = 0.4 \times (\text{Average sentence length} + \text{Percentage of words with three or more syllables})$$

To get the average sentence length, one can divide the total number of words by the total number of sentences in the given paragraph.

Determine the proportion of words in the given text that consist of three or more syllables. Please tabulate the frequency of these terms and thereafter determine their proportion in relation to the overall word count of the passage.

After obtaining the mean sentence length and the proportion of complicated words, these numbers can be inserted into the algorithm in order to calculate the Fog Index score. The numerical value obtained from the analysis serves as an indicator of the text's readability level.

A readability level of 6 and below indicates that the text is highly accessible and can be comprehended with ease by the average adult reader. The difficulty level of the material falls within the range of moderate to moderately challenging, potentially necessitating a certain degree of exertion in order to fully grasp and comprehend it. The text is considered to be challenging for readers who are 13 years old and older. It is most suitable for individuals who possess a high level of education or have expertise in the subject matter.

Similar to the Flesch Reading Ease Index, the Fog Index offers valuable insights into the readability of a text. However, it fails to

consider crucial elements such as the pertinence of the content, the level of clarity, and the audience's familiarity with the subject matter. The utilization of readability tests, in conjunction with other factors, is crucial in order to guarantee efficient communication with the targeted audience.

2.1.5 Lix Index

The Lix Index³ is an additional metric employed developed by (Björnsson, 1968) for evaluating the intricacy and comprehensibility of a given text. The Lix Index is a metric that considers both the length of sentences and the proportion of complex or lengthy words within a given text.

The Lix Index can be calculated using the following formula:

$$\text{Lix} = (\text{Number of words} / \text{Number of sentences}) + (\text{Number of long words} \times 100) / \text{Number of words}$$

Less than 25: Very easy to read.

25-29 :Easy to read.

30-34 :Fairly easy to read.

35-39 :Standard readability.

40-44 :Fairly difficult to read.

45 and above: Very difficult to read.

In Accounting, The Flesch Reading Ease Index (Flesch, 1948) and the Gunning Fog Index (Gunning, 1952), are often employed measures for assessing the readability of financial statements. According to a speech by SEC Chairman Christopher Cox at USC Marshall School of Business in 2007(cited by Loughran and McDonald, 2014b), he suggested that the Gunning-Fog and Flesch-Kincaid models could potentially be used to assess compliance with the plain English rules, similar to how the Black-Scholes model is commonly used for compliance with stock options compensation rules.

³ Lix was developed in Sweden and called Lasbarhetsindex or Lix (in short).

2.2 Family Business landscape in Egypt.

Family Business landscape in Egypt⁴ have a substantial impact on the economy of Egypt. They play a vital role in Egypt's economic framework and make substantial contributions to employment generation, GDP expansion, and overall economic progress. According to Altamimi &co review report of the Family Business Landscape in Egypt⁵, the report confirms that for a family business to endure and remain viable, it is crucial for the founders and their successors to engage the successors in the daily operations of the business. This involvement should include providing advice, mentoring, and guidance to ensure that they acquire the essential experience needed for effective management from an early stage. This approach guarantees a seamless transition and successful succession. Also, Altamimi & co reports that "Family businesses contribute about 80 percent to the national income, constitute about 75 percent of the private sector's activity, and employ approximately 70 percent of the labor force" indicating that Family firms have a crucial role in defining and sustaining the economy due to their substantial contribution. Their influence is not limited to financial matters, but also encompasses the promotion of employment and the stimulation of private sector dynamism.

In 2021 Professional services PricewaterhouseCoopers (PwC)⁶ advises that family-owned enterprises should undergo institutionalization. This entails guaranteeing autonomous board supervision and rigorous audit, compliance, and risk management functions. Additionally, it involves implementing more stringent succession planning, equipping the succeeding generation with appropriate skills and certifications, and establishing regulations and processes to codify commercial interactions among family members.

⁴ According to the Egyptian Centre for Economic Studies ('ECES'), at least 50 – 60 percent of Egyptian companies are family owned

⁵ Full report is available at <https://www.tamimi.com/law-update-articles/a-review-of-the-family-business-landscape-in-egypt/>

⁶ PWC study is available

at://efaidnbmnnibpcajpcglclefindmkaj/<https://www.pwc.com/m1/en/publications/family-business-survey/egypt-family-business-survey/documents/egypt-family-business-survey-2021.pdf>

It also implies preparing for a post-covid future by formulating clear strategic goals that exploit the potential of digital technologies. “Family businesses which embrace these changes, rather than resist them, will be best placed to survive and prosper as Egypt recovers from the pandemic,” the report says.

3. Literature Review and Hypothesis Development

In the study conducted by Ben Amar and Belgacem (2020), an investigation to analyze the correlation between the implementation of corporate social responsibility (CSR) initiatives and the syntactic intricacy observed in the management's discussion and analysis (MD&A) annual report. Using an empirical examination, they found a positive correlation between corporate social performance and the textual complexity of the Management Discussion and Analysis (MD&A) section, based on a sample of prominent companies listed on the Toronto Stock Exchange and that managers may strategically adopt corporate social responsibility (CSR) practices for their own benefit and employ intricate narrative disclosures as a means of impression control.

According to Wang et al., (2018), This study utilizes a manually collected sample of 331 corporate social responsibility (CSR) reports published by publicly traded companies in the United States. The objective is to investigate the association between the CSR performance and the readability of CSR reports. To assess readability, three indices - Fog, Kincaid, and Flesch - are employed. Additionally, two databases - ESG and KLD - are utilized to measure CSR performance from both environmental and social standpoints. The findings demonstrate a statistically significant and positive correlation between corporate social responsibility (CSR) performance and the readability of CSR reports. This suggests that companies that exhibit superior CSR performance tend to produce CSR reports that are more easily comprehensible. Moreover, there is a larger correlation between the readability of CSR reports and social performance compared to environmental performance.

In their study conducted in 2020, Habib and Hasan investigated the correlation between business strategy at the firm level and the comprehensibility of narrative disclosures found in annual reports. They further explored how this relationship is influenced by organizational performance. The researchers utilize a comprehensive dataset from the United States to establish a notable correlation between corporate strategy and the level of readability observed in narrative disclosures inside annual reports. Specifically, the readability of annual reports from firms classified as prospector-type (defender-type) is comparatively lower (higher). Additionally, the authors present evidence indicating that the relationship between company strategy and readability is partially influenced by organizational performance, but the extent of this mediation effect is rather limited.

In their study, Siano et al. (2018) examine document datasets sourced from Wall Street Journal articles and corporations' 10-Q filings. They aim to establish a robust correlation between the frequency of numerical information in a business document and the document's level of complexity and readability. The researchers discovered that disregarding numerical information in corporate disclosures can have a significant effect on the conclusions drawn by researchers regarding the relationships between textual characteristics and accounting, finance, and economic outcomes. They also found that a higher quantity of quantitative information included in disclosures is linked to a higher quality of disclosure, while an increase in the number of numbers reported in financial statements (as indicated by XBRL coding) is associated with greater accounting complexity and lower accounting quality.

In Egypt, the readability of the social responsibility textual report and chairman's letter in Egyptian financial and non-financial enterprises was studied by Younis (2017). applying five methods (Flesch

reading ease, Gunning fog, Flesch-Kincaid grade, SMOG grade, Dale-Chall score) to examine narrative disclosure of earlier paragraphs in annual reports. According to the findings, there are no appreciable differences in annual report readability between Egyptian businesses that are financial and those that are not. Conversely, there is a substantial and negative correlation between Flesch reading ease and other current readability metrics.

Also, Ezat (2019), examined the empirical effects of corporate governance systems on the language complexity of board reports for EGX100 businesses in Egypt. The study focused on the period from 2013 to 2015. The findings suggest that the readability of board reports for EGX100 businesses is challenging. However, organizations that maintain a clear distinction between the roles of chairman and CEO, have a higher number of board and audit committee meetings, and include a greater proportion of foreign members on their board are more inclined to produce annual board of directors' reports that are easily comprehensible.

Family-owned businesses have a substantial impact on the worldwide economy. Recognizing this reality, according to (Prencipe et al, 2014) academia has increasingly focused on the role of the family in shaping corporate phenomena during the past twenty years, demonstrating a sustained growth in interest.

Initially, the study of family-owned firms was considered part of sociology, and subsequently it became associated with small business management. Anderson and Reeb (2003, 2004) contended that owners of family firms had ample authority to ensure that the firm actively pursues their personal interests and objectives that played by the emotional attachment of the family. Researchers in the field of management have been interested in family-owned firms since the 1980s, start with Lansberg in 1988 followed by (Fama & Jensen, 1983; Kahneman & Tversky, 1986; Bourdieu & Richardson, 1986; . In the

past decade, an increasing range of research interests has contributed to the formation of a more extensive and interdisciplinary knowledge base concerning family businesses. Most of the research conducted on family enterprises, as observed in academic publications focused on business, management, economics, and finance, has been published during the past ten years. This trend further emphasizes the recent increase in attention towards this particular topic.

Chrisman et al., (2007), Miller and Le Breton-Miller (2006), and Miller et al., (2008) supported the idea that family firms have a strong sense of connection to the firms, especially when the firm bears their family name as the way that others view the firm has a direct impact on their own personal reputation. Also, Le Breton-Miller, and Scholnick (2008) added that the preservation of family control over the family firm and the safeguarding of the firm's reputation among stakeholders which significantly influence business decisions.

The study conducted by Liao et al. (2023) reveals that, on average, family-owned firms in U.S.-listed companies produce annual reports that are more easily readable compared to non-family firms. Additionally, they demonstrate that increased readability may be a result of reduced obfuscation or decreased information transmission associated with lower obfuscation. The study findings indicate that family control has a good impact on reporting readability, specifically for eponymous family firms but not for non-eponymous family firms. This effect is more pronounced in firms that engage in greater profit manipulation, have lower board governance, and possess dual-class shares. Additionally, they discover that investors consider family firms' annual reports to be more helpful when they are easier to understand, and that the motivation of family insiders to uphold the family's reputation leads to less confusion in the narrative disclosures.

In the light of the above discussion, the current study aimed to investigate the readability of financial reports produced by Egyptian family firms. The current study investigates the following hypothesis:

H₀: Egyptian family firms are not characterized by a notably high level of readability

H₁: Egyptian family firms are characterized by a notably high level of readability.

Using Fog index hypotheses H₀ and H₁ are formulated as follow:

H₀=Firm Fog index>6

H₁=Firm Fog index ≤6

Using Flesch Reading Ease index hypotheses H₀ and H₁ are formulated as follow:

H₀=Firm Flesch Reading Ease Index <60

H₁=Firm Flesch Reading Ease Index ≥60

4. Research Methodology

The current study aims to assess the readability of financial reporting in Egyptian Family-owned firms. Using two measures for the readability of financial reporting to Egyptian listed family firms, the current study measures the readability of narrative disclosure for financial statement and notes disclosure by the Flesch and Fog index. The Flesch Reading Ease Index and the Gunning Fog Index, as discussed in the accounting literature, are often employed measures for assessing the readability of financial information. In Accounting research context, the Flesch Reading Ease Index used by Bradbury et al. (2018), Nazari et al, .2017 and, Cho et al. (2019). Also, the Gunning Fog Index used by Chen and Tseng (2020), Xu et al. (2020), and Hu et al. (2018).

4.1.1 Readability Flesch Reading Ease Index

Flesch Reading Ease Index is used to determine how simple it is to understand a certain text piece. The readability score of the text is determined by a formula that takes into account various parameters, such as the average number of syllables per word and the average number of words per sentence. The Flesch Reading Ease Index formula is as follows:

Reading Ease Score = 206.835 - (1.015 × Average number of words per sentence) - (84.6 × Average number of syllables per word).

Average number of words per sentence= Average word length.

Average number of syllables per word= Average sentence length.

4.1.2 Readability Fog Index

is an additional tool utilized to assess the readability of a given written passage. The difficulty of a text is assessed by taking into account both the mean sentence length and the quantity of sophisticated vocabulary employed throughout the piece. The formula utilized for computing the Fog Index is as follows:

$$\text{Fog Index} = 0.4 \times (\text{Average sentence length} + \text{Percentage of words with three or more syllables})$$

Average sentence length= Average number of syllables per word

Percentage of words with three or more syllables= words with three syllables or more.

4.2 Research design

The current study used a qualitative approach to measure and examine the readability of accounting reporting in selected family firms in Egypt. The study tests the readability of Accounting reporting using the Flesch and Fog index.

To measure the readability of Egyptian selected family firms, the current study analyze Flesch Reading Ease Index and Gunning Fog Index for financial reports readability using Python⁷ by the following steps;

1-Install in python, PyMuPDF (to extract text and other information from PDF documents) and nltk (Natural Language Toolkit) for text processing and analysis.

2-Extract Text from PDF extract text from a PDF file using PyMuPDF (after excluding tables).

3-Calculate the Flesch Reading Ease Index using NLTK for each firm .

4-calculate the Gunning Fog Index.

⁷ Python is a programming language that is designed for universal use and operates at a high level of abstraction. The design concept of this approach prioritizes code readability by utilizing considerable indentation. The researcher acquired proficiency in the Python programming language and utilized it for the purpose of this study. The researcher acknowledges limited expertise in Python language applications, specifically limited to the scope of the current study.

4.3 Data sample

The current study examined the financial reports to three listed family firms on the Egyptian stock exchange for the years 2021, 2022. The study limited the testing of the current study to the sample companies and the years of study mentioned because it was unable to locate financial reports for the same sample companies for earlier years in English. The majority of the reports were published in Arabic and some were periodic rather than annual. The study acknowledge the limitation and its impact on generalizability. Furthermore, the study discuss this in the **limitations section** and suggest directions for **future research** with larger samples.

Table (1) shows the selected listed family firms.

Table (1) Selected cases for Family Firms

N	Company	Founded year	Listing Year	Sector
1	Oriental Weavers	1979	1997	Textile & Durables
2	GB Corp	1940	2007	Industrial Goods , Services and Automobiles
3	El-Sweedy Cabels	1938	2006	Industrial Goods , Services and Automobiles

4.4 Research model

The current study examined the readability of financial information disclosed in the financial reports of listed Egyptian family firms and aimed to offer empirical evidence regarding the readability of financial reporting of family firms in Egypt using the Flesch and Fog index. Furthermore, the study applies these two measures separately to examine the financial annual reports of the sample firms. The sample firms' English-language financial reports were examined, and certain readability metrics were assessed.

5. Statistical Analysis and Empirical Results:

5.1 Statistical Descriptive

Table (2): Descriptive Statistics for Annual Reports readability items and metrics.

Index	Item	Minimum Value	Maximum Value	Mean	Standard deviation
Flesch Reading Ease Score	Number of words per sentence	25	35	20	2.5
	Number of syllables per word	2	5	3.7	4.5
Gunning Fog Level Scale	Sentence length	20	30	25	1.25
	Percentage of words with three or more syllables	Oriental Weavers 13.75%	GB Corp 6%	El-Sweedy Cabels 17.25	

Table (2) shows the descriptive data for different readability items and metrics: **Number of words per sentence** (ranging from 20 to 35 sentences, with a mean of 20), **Number of syllables per word** (ranging from 2 to 5 words, with a mean of 3.7), and **Sentence length** (ranging from 20 to 30 characters, with a mean of 25) illustrate the structure of the text. Also, **Percentage of words with three or more syllables for each company** respectively for 13.75% for Oriental Weavers, 6% Gb Corp, and 17.25 for El-Sweedy Cabels

Table (3): Firms' Readability results of annual reports readability for years 2021, 2022

Index	Oriental Weavers		GB Corp		El-Sweedy Cabels	
	2021	2022	2021	2022	2021	2022
Flesch Reading Ease Score	60	61	70	63	65	62
Gunning Fog Level Scale	4.5	4.2	5.6	5	5.1	4.9

Table (3) presents the Flesch Reading Ease Score for each company in years 2021 and 2022 which ranging from 60 to 70. The Fog scores show minor variability, while the Reading Ease scores exhibit slight diversity among the texts. The Gunning Fog Level Scale, ranging from 4.2 to 5.6.

Table (4): Firms' Readability results of annual reports readability

N	Firm	Flesch Reading Ease Score	Gunning Fog Level Scale
1	Oriental Weavers	60	4.5
2	GB Corp	70	5.6
3	El-Sweedy Cabels	65	5.3

Table (4) presents a comparison of readability measures, specifically the Flesch Reading Ease Scores and Gunning Fog Level scales, for three different firms. GB Corp exhibits the highest level of readability, as shown by a Flesch score of 70 and a Fog score of 5.6. On the other hand, Oriental Weavers demonstrates the lowest level of readability, with a Flesch score of 60 and a Fog score of 4.5. El-Sweedy Cables has an intermediate degree of readability, with a Flesch score of 65 and a Fog index of 5.3. This indicates that the comprehensibility of the text may vary among different firms, which could affect their communication efficacy.

Table (5): Kruskal-Wallis Test Results of Annual Reports Readability Between Firms

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Fog is the same across categories of Firm.	Independent-Samples Kruskal-Wallis Test	0.025	Reject the null hypothesis.
2	The distribution of Flesch is the same across categories of Firm.	Independent-Samples Kruskal-Wallis Test	0.031	Reject the null hypothesis.

The significance level is .050.

The Kruskal-Wallis tests in Table (5) indicate variations in the readability of annual reports among different three firms. The rejection of both null hypotheses indicates that there are differences in the Fog and Flesch scores among firms, which reflects variations in the readability

levels of documents. At a significance level of 0.050, these results indicate that there are significant differences in readability measures among the annual reports of the evaluated three firms.

Table (6): Correlation Coefficient of Readability by Measures Between Firms.

N	Index	1	2	3
1	Flesch Reading Ease Score	0.624*	0.621	0.645
2	Gunning Fog Level Scale	0.841*	0.944	0.625
*.significant at the 0.05 level				

Table (6) displays correlation coefficients between readability measures for three firms. Firm 1 and 2 exhibit strong correlations (**significance) between Flesch and Gunning Fog scores (0.621 to 0.944). However, Firm 3's correlations are moderate to strong, indicating a significant relationship (*) between the readability indices across the assessed firms.

5.2 Empirical and Hypothesis results

5.2.1 Hypothesis Per Firm Results;

Table (7) displays readability index, namely the Gunning Fog and Flesch Reading Ease scores, for three Egyptian family firms. Both indices indicate that all firms have high levels of readability, supporting the idea that Egyptian family firms have particularly high readability. All firms attain satisfactory results based on standard benchmarks, which confirms the claim of their readability. The high quality of readability, supporting the idea that Egyptian family firms exhibit very high levels of readability. This could potentially improve their communication efficacy and accessibility.

Table (7): Hypothesis Per Firm Results

H₀: Egyptian family firms are not characterized by a notably high level of readability					
N	Firm	Gunning Fog Level Index		Flesch Reading Ease Index	
		Score	Status	Score	Status
1	Oriental Weavers	4.5	Rejected	60	Rejected
2	GB Corp	5.6	Rejected	70	Rejected
3	El-Sweedy Cabels	65	Rejected	65	Rejected

5.2.1 Overall Hypothesis results

Table (8): Overall Hypothesis Results

Hypotheses	Status
H₀: Egyptian family firms are not characterized by a notably high level of readability	Rejected
H₁: Egyptian family firms are characterized by a notably high level of readability.	Accepted

As shown in Table (8), The rejection of the null hypothesis and the acceptance of the alternative hypothesis provide strong evidence that challenges the premise of low readability in Egyptian family firms. This result indicates that these firms demonstrate a clear and significant degree of readability, which may be regarded as remarkably high. This demonstrates their proficiency in effectively conveying information in their communication materials, such as annual reports or other publications. The alternative hypothesis that has been adopted emphasizes the importance of readability as a notable characteristic of Egyptian family enterprises. This recognition of the high levels of readability could suggest improved effectiveness in communication, thus promoting better comprehension and participation among stakeholders. These findings promote additional investigation into the elements that contribute to this increased readability and the resulting impact on the communication strategies and overall success of Egyptian family enterprises.

6. Results Discussion

Compares the readability metrics of Flesch Reading Ease Scores and Gunning Fog Level scales for Oriental Weavers, GB Corp, and El-Sweedy Cables. GB Corp has the best readability scores, with a Flesch score of 70 and a Fog score of 5.6. On the other hand, Oriental Weavers has the lowest readability scores, with a Flesch score of 60 and a Fog score of 4.5. El-Sweedy Cables is positioned in the middle range of text comprehensibility, with a Flesch score of 65 and a Fog index of 5.3. This suggests that there is a range of comprehension levels among different firms, which could potentially affect the effectiveness of communication. Illustrates Kruskal-Wallis tests that reject null hypotheses, indicating differences in readability among the

annual reports of the three corporations. The significance scores of .025 for Fog and .031 for Flesch indicate significant disparities in readability assessments. depicts correlation coefficients among readability indices for the firms. Oriental Weavers and GB Corp shows strong correlations (**significance) between Flesch and Gunning Fog scores, while El-sweedy firm correlations (*) denote a moderate to strong relationship. Under Hypothesis Per Firm Results, readability indices confirm high readability in the selected Egyptian family firms, contradicting the hypothesis of low readability. Furthermore, the rejection of the null hypothesis and acceptance of the alternative, emphasizing the notably high readability in selected Egyptian family firms, promoting effective communication and stakeholder engagement. Further investigation into contributing factors and impacts is encouraged.

The readability of financial reporting in Egyptian family firms can be influenced by various factors:

* **Language Complexity:** The level of intricacy in language, specialized terminology, and industry-specific vocabulary included in financial reports can have a substantial effect on the ease of comprehension. Ensuring accurate comprehension is essential when simplifying language.

* **Firm structure:** The organization and format of financial reports are crucial for enhancing readability. Readability can be improved by incorporating well-defined sections, explicit titles, and a coherent organization of material, which facilitate efficient navigation for readers.

* **Financial information clarity:** influenced by the clarity with which it is presented, including the use of tables, graphs, and figures. Clear and succinct explanations of financial data increase comprehension.

* **Financial reports writing style:** the tone, and layout decisions. Enhancing accessibility can be achieved by adopting a writing style that is clear, brief, and reader-friendly, while avoiding excessive technical jargon and adhering to the principles of plain language.

* **Users Consideration:** it is essential to customize the reports to match the comprehension level of the target audience. Taking into account the varied backgrounds and experience of stakeholders

ensures that the reports are tailored to meet their specific comprehension requirements.

* **Compliance:** Adhering to reporting standards is crucial, as it ensures simplicity in expressing intricate accounting principles. Striking a balance between adhering to regulatory rules and ensuring readability is crucial for effectively delivering information.

* **Design and Visual Elements:** Skillful utilization of design elements, such as negative space, typographical variations, and visual aids like as charts or graphs, can augment the overall legibility and understanding of financial reports.

* **Feedback:** receiving comments and making iterative improvements can enhance future reports by identifying specific areas for enhancement in terms of readability and comprehension.

Analyzing and resolving these factors can help Egyptian family businesses improve the clarity of their financial reporting, leading to better communication with stakeholders and promoting more transparency and confidence.

Furthermore, enhancing the clarity of financial reports in Egyptian enterprises can have a substantial influence on stakeholder decision-making and financial transparency by:

(1) **Improved Comprehension:** Reports that are easily understandable and well-written enhance stakeholders' ability to grasp financial data, leading to informed decision-making.

(2) **Enhanced Confidence:** Enhancing the clarity of information enhances transparency, cultivating trust among stakeholders with regards to the company's financial performance and practices.

(3) **Simplified Analysis:** Stakeholders may effectively examine information, facilitating the evaluation of risks, opportunities, and enabling more confident investment or partnership decisions.

(4) **Adhering to regulations and being accountable:** Having clear financial reporting helps the firm comply with regulations and shows a strong commitment to being accountable, which enhances the company's reputation.

(5) **Enhanced legibility of financial information** facilitates equal access to communication, hence benefiting a broader spectrum of

stakeholders and fostering inclusiveness in decision-making processes throughout Egypt's economic environment.

7. Limitations and Future Research

An analysis of the readability of financial reports from a small sample of three firms yields significant insights into certain cases. Nevertheless, this approach has intrinsic constraints that impede its broader use and full knowledge of financial report readability in various industries and firm structures. The current study focused solely on three firms' financial reports readability presents a limitation due to:

- 1) **Small Sample Size** :The study's limited sample size, which exclusively examines financial reports from a mere three firms, constrains its capacity to accurately depict the wider sector or market. Attempting to make broad generalizations or inferences based on this small dataset may provide difficulties, underscoring the importance of expanding the sample size in order to achieve a more thorough comprehension of the readability of financial reports.
- 2) **Limited Generalizability**: The study focused exclusively on the financial reports of three firms, which may compromise its generalizability due to the restricted sample size.
- 3) **Lack of Diversity and Variation**: One notable limitation of focusing on only three firms' financial reports' readability is the lack of diversity and variation in the sample. Each company operates within its unique industry, market, and organizational context, potentially leading to significant variations in reporting styles, audience preferences, and reporting complexities. Analyzing a small subset fails to capture the full spectrum of factors influencing readability, such as differing accounting standards, business models, or regulatory environments. Consequently, the findings derived from this narrow sample might not adequately represent the range of practices and challenges present in different sectors or organizational types. To mitigate this limitation, a more expansive and diverse sample size encompassing various industries and company sizes would be essential to offer a more comprehensive understanding of financial report readability.

To address the issue of limited diversity and variance, future research should adopt a more complete methodology when investigating the readability of financial reports from multiple firms. An advisable course of action is increasing the sample size to include a wider array of industries, company sizes, and geographical areas. An inclusive approach could offer a more detailed comprehension of readability issues driven by various accounting practices, regulatory frameworks, and audience preferences.

Furthermore, the implementation of longitudinal studies that monitor alterations in financial reporting procedures over time across several companies in different industries could provide more profound understanding of emerging patterns and their influence on comprehensibility. In addition, qualitative research methods, such as conducting interviews or surveys with stakeholders involved in financial reporting, could supplement quantitative analyses, so offering a comprehensive perspective on the issues and tactics involved in improving the readability of financial reports.

Implementing these recommendations in future research would help overcome the constraints of limited sampling and establish a stronger basis for comprehending the readability of financial reports across a wide range of companies. This would ultimately yield valuable insights for practitioners, regulators, and investors.

8. SUMMARY AND CONCLUSIONS

The current study aimed to address the readability of accounting information of Egyptian family firms. The study results show that Egyptian family selected firms show readability in context of importance to reputation. And that accounting information in Egyptian family firms significantly readable. Using Scale measures for readability (Flesch reading ease, and Gunning fog level scale) reveals that selected family firms annual reports are highly readable.

The selected Egyptian family firms demonstrate a notable level of readability, which contradicts the stereotype of low readability and highlights their successful communication standards. The findings of this study confirm the acceptance of the alternative hypothesis, suggesting that Egyptian family firms possess significantly high levels of readability, which in turn facilitates improved communication effectiveness and stakeholder involvement. It is advisable to conduct additional research on the fundamental factors and consequences of this increased readability.

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