

Dr. Safaa Ahmed Saleh

Lecturer of Accounting, Faculty of
Business, Alexandria University

Dr. Osama Magdy

Abouelela

Assistant Professor at Accounting
Department, Faculty of Business,
Alexandria University

The Effect of the Audit Committee Members' Gender Diversity on the Relationship between the Auditor's Narcissism and the Audit Report Readability: Evidence from Firms Listed on the Egyptian Stock Exchange

Abstract

The auditor's report is a crucial communication tool that helps users to be more confident in the published financial statements. Given the modifications made to the audit report, it becomes a necessity to address its readability. Therefore, this research aims to study and investigate the impact of the auditors' narcissism on the readability of their historical annual financial statements audit report, in addition to the effect of female representation in audit committee members as, an interactive variable, on this relationship. The Ordinal Logistic Regression method was used, as this type of regression is used in the case of dividing the dependent variable into ordinal groups and the independent variable takes the value (zero or one), where the study utilized a sample of 105 non-financial companies listed on the Egyptian Stock Exchange. A total of 630 observations were collected for firm-year data spanning from 2017 to 2022.

E.mail: safaa_ahmed@alexu.edu.eg

E.mail: osama.magdy@alexu.edu.eg

Based on the basic analysis, the research concludes that an auditor's narcissism has a significant and negative impact on the readability of the audit report, and that the extent of this impact varies based on the percentage of female representation among the members of the audit committee. Furthermore, the research's additional analysis found an agreement between the results of both the control and interactive approaches, indicating that the significant negative effect of an auditor's narcissism on the readability of the audit report varies based on the percentage of female representation among the audit committee members of firms under study. Furthermore, the outcomes of a sensitivity analysis closely correspond to those obtained from the basic analysis.

Overall, improving the readability of the auditor's report, by considering the auditor's personality, which may be reflected in the way he performs the audit process and writes the final audit report, as well as the diversity in audit committee members, can contribute to better decision-making by stakeholders and ultimately benefit the audit profession and those interested in developing the financial reporting environment in emerging countries.

Keywords: Auditor's Narcissism; Audit Report Readability; Percentage of Female Representation in Audit Committee Members.

أثر التنوع الجنسي لأعضاء لجنة المراجعة على العلاقة بين نرجسية مراقب الحسابات وقابلية تقريره عن مراجعة القوائم المالية السنوية للقراءة: دليل من الشركات المقيدة بالبورصة المصرية

ملخص البحث

يُعد تقرير مراقب الحسابات أداة اتصال مهمة تساعد المستخدمين على أن يكونوا أكثر ثقة في القوائم المالية المنشورة. وبالنظر إلى التعديلات التي تم إجراؤها على تقرير المراجعة، فإنه يصبح من الضروري دراسة مدى قابليته للقراءة من قبل مستخدميه. ولذا، استهدف البحث دراسة واختبار أثر نرجسية مراقب الحسابات على قابلية تقريره عن مراجعة القوائم المالية السنوية للقراءة، بالإضافة إلى أثر نسبة تمثيل الإناث في لجنة المراجعة كمتغير مُعدل على هذه العلاقة. وتم استخدام أسلوب الانحدار اللوجيستي الرتبي Ordinal Logistic Regression، حيث يتم استخدام هذا النوع من أنواع الانحدار في حالة تقسيم المتغير التابع إلى مجموعات رتبية والمتغير المستقل يأخذ القيمة (صفر أو واحد)، حيث تكونت عينة الدراسة من 105 شركة من الشركات غير المالية المقيدة بالبورصة المصرية، بإجمالي عدد مشاهدات 630 مشاهدة، وذلك خلال الفترة من عام 2017 إلى عام 2022.

وقد توصل البحث، في ظل التحليل الأساسي إلى أن نرجسية مراقب الحسابات لها تأثير سلبي ومعنوي على قابلية تقريره عن مراجعة القوائم المالية السنوية للقراءة، وأن هذا التأثير يختلف باختلاف نسبة تمثيل الإناث في أعضاء لجنة المراجعة. كما توصل البحث في ظل التحليل الإضافي إلى اتفاق نتائج كلا المدخلين الرقابي والمعدل على اختلاف التأثير السلبي المعنوي لنرجسية مراقب الحسابات على قابلية تقريره عن مراجعة القوائم المالية السنوية للقراءة باختلاف نسبة تمثيل الإناث في لجنة المراجعة لدى هذه الشركات. وأخيراً، توصل البحث في ظل تحليل الحساسية، إلى اتفاق نتائج تحليل الحساسية بدرجة كبيرة مع نتائج التحليل الأساسي بأن نرجسية مراقب الحسابات لها تأثير سلبي ومعنوي على قابلية تقريره عن مراجعة القوائم المالية السنوية للقراءة، وأن هذا التأثير يختلف باختلاف نسبة تمثيل الإناث في لجنة المراجعة.

وبشكل عام، فإن تحسين مدى قابلية تقرير مراقب الحسابات للقراءة، من خلال الأخذ في الاعتبار شخصية مراقب الحسابات، التي قد تنعكس على طريقة أدائه لعملية المراجعة وكتابته للتقرير النهائي، وكذلك التنوع في أعضاء لجنة المراجعة، يمكن أن يساهم في اتخاذ قرارات أفضل من قبل أصحاب المصلحة ويفيد بدوره مهنة المراجعة والمهتمين بتطوير بيئة إعداد التقارير المالية في الدول الناشئة.

الكلمات المفتاحية: نرجسية مراقب الحسابات، قابلية تقريره عن مراجعة القوائم المالية السنوية للقراءة، نسبة تمثيل الإناث في لجنة المراجعة.

1. Introduction

Readability is one of the most important features that should always be preserved in writing and communication, as it is a key tool for text analysis. There are many indicators that use mathematical equations to measure and evaluate the readability of documents. It is important to note that auditors' use of difficult and complex phrases and terminologies can significantly reduce the readability and understanding of their reports. This increases the expectations gap and the misinformation risk, which threatens the audit profession's capability to accomplish its goals and, in turn, negatively impacts stakeholders' decisions (Gambetta et al., 2023).

Numerous determinants of the readability of the auditor's report on auditing the annual financial statements have been identified by some previous studies (e.g., Velte, 2018a; Chang & Stone, 2019a, b; Salehi et al., 2020; Jayasree & Shette, 2021). These determinants can be divided into three categories: (1) determinants related to the characteristics of the **audit client**, including the operational characteristics of the company such as the size of the audit client, the leverage ratio, the fiscal year-end, the result of the activity, the risks to which it is exposed, the degree of concentration or dispersion of ownership, the type of industrial sector, and its rate of growth; (2) determinants related to the **auditor and audit firm**, including the size of the audit firm, the auditor's opinion, industrial specialization, and the delay period for issuing the auditor's report; and (3) determinants of the **audit profession** practices environment, including modifications made to some auditing standards such as (ISA) No 700 (revised), ISA No 705 (revised), and ISA No 706 (revised) (IAASB, 2015b, 2015d, 2015e).

The current research focuses on the determinants related to the auditor since he is the person who write and sign the audit report. Therefore, his

personality, especially the narcissistic, may affect his way of communicating the audit findings through his audit report. **Narcissism** is a psychological and mental state in which a person excessively focuses on self-interest and ignores the external environment and circumstances of others. Self-arrogance, defending one's actions, pointing the finger at others, and disregarding others in comparison to oneself are common signs of narcissism (Salehi et al., 2022). Narcissistic individuals tend to seek affiliation with others who share their narcissistic tendencies, as this can support their image and status in society (Grosz et al., 2020). Narcissistic leaders can have many negative consequences, including (1) managerial and employee failures, (2) exploitation of others, (3) unethical behavior, (4) failure to address external threats to the organization, and (5) destruction of trust and organizational relationships (Rosenthal & Pittinsky, 2006).

A narcissistic auditor is characterized by self-arrogance and pride, which can make them resistant to constructive suggestions, and quick to blame others for failure. These traits can lead to problems in personal and organizational relationships, as well as a tendency to ignore environmental changes and competitor threats. Narcissistic auditors may be unpopular among employees due to their lack of sympathy and understanding, constant need for admiration, and tendency to constantly seek distinction. As a result, they may take high risks to maintain their power, which can lead to significant job crises (Church et al., 2020). Moreover, Salehi et al. (2023) found that the readability of the auditor's report is negatively and significantly influenced by the auditor's narcissism. This highlights the importance of addressing narcissistic tendencies in auditors to improve the quality of their reports and maintain trust in the auditing profession.

Moreover, research on **gender diversity within audit committee** has taken various paths in an attempt to understand its impact on the effectiveness of tasks assigned to them, including the quality of financial reports and the readability of the audit report. Bepari et al. (2023) investigated the impact of female representation in the audit committee on the readability of the audit report on the annual financial statements. They found a direct association between the representation of females in the audit committee and the readability of the audit report. This is attributed to females possessing better personal skills in dealing with others and promoting inclusiveness in discussions, which restricts attempts to exchange private information among audit committee members or with outsiders. As a result, by communicating with the audit committee, which has a larger proportion of female members, auditors can better understand the reputational risks associated with their clients. They can also prepare audit reports in a way that will make them easier for users of the annual financial statements to read and understand.

Accordingly, previous research, such as Salehi et al. (2022) and Salehi et al. (2023), examined the direct impact of the auditor's narcissism on the readability of the annual financial statements' audit report. **However**, to the researchers' knowledge, there is a gap in research on the effect of female representation in the audit committee on the relationship between the auditor's narcissism and the readability of the report on auditing the annual financial statements in the Egyptian context.

Based on the foregoing, **the research problem** can be represented by answering theoretically and empirically the following research questions: Does the auditor's narcissism has a negative and significant effect on the readability of the annual financial statements' audit report? Furthermore,

Does the level of female representation in the audit committee moderate this negative effect?

Therefore, the primary **objective** of the current research is to examine whether the auditor's narcissism has an impact on the readability of the audit report on the annual financial statements. Additionally, this research aims to examine the interactive effect of female representation in the audit committee on this relationship.

Taking into account the research problem at hand and its objectives, the scientific and practical importance of this research, as well as its motivation, can be determined as follows. First, the **scientific importance** of this research lies in its exploration of an important research issue that has been addressed by foreign studies, but has not been extensively studied in the Egyptian context. Specifically, the current research examines the impact of female representation in the audit committee on the association between the audit report readability and auditor's narcissism. This research adds to the existing literature and contributes to accounting thought both in Egypt and more broadly.

Second, the **practical importance** of this study lies in its endeavour to examine the impact of the auditors' narcissism on the audit report readability. Also, it tested the effect of the proportion of female representation in the audit committee, as an interactive variable, on this relationship, which is an area of study that faces challenges or suffers from relative scarcity in Egypt. This study also derives its practical importance from its benefit to stakeholders, the capital market, and investors in Egypt and other emerging economies where the business climate is similar to the Egyptian business environment, which leads to enriching the positive practical return of accounting research in that field, and increases awareness and understanding

of the impact of the auditor's narcissism on the quality of financial reports in general, and the readability of the auditor's report on auditing the annual financial statements in particular.

Despite the various **motives** for this research, the primary concern is the limited availability of applied research conducted in Egypt in the field of auditor's personality and the readability of the audit report on the annual financial statements. Additionally, the researchers aim to keep up with the trend of relevant foreign research by conducting a basic, additional, and sensitivity analyses, to address the common occurrence of a relative deficiency found in many research studies conducted in Egypt.

To achieve the purpose of this research and address its problem, the remainder of the research is divided as follows: (2) auditor's narcissism and audit report readability theoretical foundation, (3) research hypotheses development, (4) research methodology, (5) results of testing the research hypotheses, (6) additional analysis, (7) sensitivity analysis, and finally, (8) research findings, recommendations, and suggested future research.

2. Auditor's Narcissism and Audit Report Readability Theoretical Foundation

The expected association between the readability of the audit report and auditor's narcissism is based on a number of theories (e.g., Daoust & Malsch, 2020; Grosz et al., 2020; Salehi et al., 2022; Suttipun, 2022; Salehi et al., 2023). Perhaps the most important of these are the **Theory of Personality Disorders, Communication Theory, and Social Identity Theory**. The audit report is considered a means of communicating opinion as the final product of the full traditional annual financial statements audit process. This report serves as a medium and human communication tool through which the auditor conveys their neutral opinion to various stakeholders regarding to

assess the degree of compatibility between the management assertion made in the financial statements and the relevant framework that governs their preparation.

The Theory of Personality Disorders defines narcissism as the psychological and mental state of an individual who ignores their surroundings and other people's circumstances out of excessive self-interest. Narcissism frequently involves self-absorption, defending one's actions, pointing the finger at others, and underestimating others in comparison to oneself. When rules don't suit them, narcissistic people may disregard them or even change them for their own gain. As a result, narcissism influences a person's conduct and personality development (Salehi et al., 2022). Following the personality disorders theory, **auditors' opinions** are affected by behavioral factors in their personality, and one of these factors is their narcissism and self-confidence. This, in turn, is reflected in both the quality level of the financial reports and the **readability of the audit report** (Salehi et al., 2023).

Regarding the **Communication Theory**, the audit report is considered an **informational and human communication tool** through which the auditor communicates their neutral opinion to various stakeholders concerning the compatibility of management assertions with the applicable framework of their preparation (Suttipun, 2022). That is, the readability of the audit report and its informational content are used as a measure of the quality of communication (Li, 2008; Loughran & McDonald, 2016). Readability can be defined as the extent to which information is effectively and easily communicated to stakeholders (Loughran & McDonald, 2014). According to this theory, the readability of the audit report is an indicator of

the effectiveness of their report as a media and human communication tool, which is directly affected by their **narcissism** (Salehi et al., 2022).

According to the **Social Identity Theory**, the group to which a person belongs, such as family or social class, gives them a sense of self-confidence, social identity, and belonging to the outside world. A person seeks to search for and belong to people who support their image and status in society. This behavior extends to narcissistic people's motivations to associate themselves with other narcissistic people who exercise power in an organization (Grosz et al., 2020). According to this theory, the **narcissistic auditor** seeks to associate with a similarly narcissistic audit client for psychological comfort (Daoust & Malsch, 2020), which leads to a decrease in their professional skepticism, risk assessment, and negatively affect the ease and readability of their report (Salehi et al., 2023).

With regard to the nature of the audit report, it can be defined as a means of expressing opinion as the final product of the full historical annual financial statement audit process. This report is, thus, considered as a medium and human communication tool through which the auditor communicates their neutral opinion to various stakeholders regarding the extent to which the degree of compatibility between the management assertions and the relevant framework that regulates their preparation (Arens et al., 2023).

The importance of the audit report differs according to the parties interested in the auditing of the full annual historical financial statements. Asare & Wright (2012) indicated that according to **auditors**, their report serves as proof of their completion of the engagement and the fulfillment of the needs of stakeholders in that regard. From the **management perspective**, the audit report is considered evidence of the management's fulfillment of its responsibilities regarding preparing the financial statements

in an agreement with the framework used for its preparation. **As for the capital market participants' perspective**, the audit report gives confidence to the information contained in the financial statements, which supports the process of making their various economic decisions such as the decision of commercial banks to grant credit, the managerial investment decision regarding the formation of the investment portfolio, and financial analysts. Finally, from the **perspective of those interested in corporate governance**, it is possible to judge through the audit report on the extent of financial reporting transparency of firms listed on the stock exchange, their commitment to regulations and laws, and their ability to continue in the future. that they have completed the engagement and have met the stakeholders' needs in that regard.

On the other hand, Ali (2021) indicated that there have been several successive developments in the content and form of the audit report, from being a description of the audit process to having a unified form and language. The first form of the report was issued in 1948, and it went through many amendments, most of which came in order to improve consistency and increase users' understanding. Many structural and substantive changes occurred in the audit report, which began at the end of the second decade of the twenty-first century and culminated in January 2015. This was done through the establishment of the (IAASB) on (IFAC), taking the professional initiative in restructuring the content and form of the audit report. The revolution in restructuring the form and content of the auditor's report internationally was not limited to amending some paragraphs in the case of the unmodified report, according to the ISA No. 700 (revised), but rather included all types of reports and cases. Moreover, a new ISA No. 701 was issued, leading to a new amended report by expanding its scope to

include the addition of new paragraphs, such as the key audit matters (KAM) paragraph.

Noting that, by analyzing the ISAs related to the audit report, it can be seen that it includes the revised ISA No. 700 that deals with issuing an opinion on the traditional historical annual financial statements. This standard requires the auditor to issue an unqualified audit report under the consistency of management in applying accounting methods and policies and the adequacy of their disclosure. Additionally, it requires the auditor to assess the accuracy of accounting estimates and/or the sufficiency of disclosure regarding them (IAASB, 2015b).

Moreover, if the auditor cannot provide an unqualified opinion in compliance with ISA No. 700, they may issue a report with a modified opinion according to the revised ISA No. 705 that determines cases require modifying the audit opinion. In such cases, the auditor would provide a section detailing the problems that resulted in the qualified opinion (IAASB, 2015d). In addition, the new ISA No. 701 issued to deal with reporting on the KAM. According to ISA No. 701, the auditor is mandated to include a new paragraph, included directly afterward the basis for opinion paragraph, which refers to information disclosed or presented in the financial statements and is considered important for users to understand if it relates to the required framework for financial reporting. Other matters that may be of material concern to the auditor, such as the application of a new information technology system during the period, and subsequent events should also be included if they materially affect the overall audit strategy. If the matter relates to the other responsibilities of the auditor, it is included in the Legal and Regulatory Requirements paragraph (IAASB, 2015c).

Also, following the ISA No. 570, the auditor has to provide an unqualified opinion based on the suitability of management's application of the going concern assumption and adequacy of disclosure (IAASB, 2015a). Moreover, the revised ISA No. 706 addresses matters that require special attention, and the revised ISA No. 720 determines the responsibilities of the auditor about the accompanying information to the financial statements contained in the annual report (IAASB, 2015e, 2015f).

Accordingly, the auditor's amended report following updated standards in 2015 includes the following items; the report title, the party to whom the report is addressed, the opinion paragraph, the basis for opinion paragraph, the material uncertainty regarding continuity as a going concern (according to the revised ISA No. 570), the KAM paragraph (according to the ISA No. 701), as new paragraphs added to the amended audit report, the other information paragraph (according to ISA 720 revised), as well as paragraphs for the responsibilities of management, those charged with governance, and the auditor, the other legal and regulatory requirements paragraph, and finally, signed by the name of the auditor, address, and date.

Hence, in light of this new restructured audit report, its readability become questionable to the financial statements and audit report's users. **Readability** is one of the most important features that must always be preserved in writing techniques and communication processes, as it is a crucial tool for analyzing text. There are many indicators that depend on mathematical equations to measure and evaluate the readability of documents. Previous studies have provided numerous definitions of readability. According to Fakhfakh (2013), readability implies that reading some texts is easier than reading others, due to the ease of understanding resulting from the writing style, the ease with which sentences and words may be read as a characteristic

of clarity, and the degree to which a certain group of people find what they read as persuasive and understandable based on their reading abilities, previous knowledge, and motivations.

The previous definitions make it clear that there is an overlap among concepts of **readability**, **transparency**, and the **understandability**. The readability is attributed to the written report or text, while understanding is attributed to the reader. However, both concepts together enable us to determine the effectiveness of the content to be communicated through the written message in the audit report. The proficiency of the language used in writing by the auditor is one of the vital factors that influence understanding. Financial reporting **transparency** can be described as the level to which financial reports disclose the fundamental economics of a firm in a manner that is easily understandable by the users of those reports. The transparency concept calls for information to be comprehensible and processable, instead of just being available and accessible. Understanding is a complex process that depends on both the sophistication of the topic and the style of presentation. Most users are unable to understand accounting information and audit report due to the complexity of the terminologies used (Barth & Schipper, 2008; Langella et al., 2023).

On the other hand, Ravi and Hong (2014) emphasize that **ambiguity** is the opposite of transparency, that is the ambiguity of financial reports leads to the weakness and inefficiency of the capital market as a result of the asymmetry of information between the firm and its stakeholders. It can be measured through the financial reports' readability, in particular, the information written in the form of narrative phrases such as the financial statements' accompanying notes and the audit report (Dempsey et al., 2012).

Al-Tamimi et al. (2014) contend that a reader's comprehension of a text's substance determines how readable it is. In contrast, the choice of words used in the text can also has a significant effect on the effectiveness of communication to the target group of readers. That is, AbdRahman et al. (2016) suggest that several factors affect the ease of understanding a text, with the most important being the size of the text in terms of the text's word count and the selection of appropriate language to serve the intended audience. **In the field of financial and accounting reporting**, readability is the process of effectively communicating appropriate information for the purpose of the evaluation process. This information can be received directly by individual investors or collected and redistributed by specialized financial analysts (Loughran & McDonald, 2014).

Accordingly, the researchers conclude that under the new updated audit report, the length of the text may cause confusion about the intended message to users, regardless of their level of education or specialization in the financial and accounting field. Also, the choice of words used plays a crucial role in effectively communicating the required content, as synonyms may be manipulated to convey misleading information. Therefore, there is a need to investigate the extent of the audit report readability.

In this context, Courtis (1995) provided a summary of the most important indicators that can be used to determine the level of ease or difficulty in reading texts. These indicators were developed by specialists in linguistic and educational fields and have been applied in the context of financial and accounting disclosure. The following section summarizes these indicators, namely, the Flesch reading ease score, and the Fog index.

The Flesch Reading Ease Score can be used to gauge how easy or challenging a certain text is to read by estimating the level of education

required of the reader. The score ranges from 0 (very difficult) to 100 (very easy), with higher scores indicating higher levels of readability (Courtis, 1995; Ricci, 2017; Xu et al., 2018). It is calculated using the formula below:

$$\text{Flesch score} = 206.835 - (1.015 * \text{SL}) - (84.6 * \text{WL})$$

Where, **SL** represents average sentence length, which is calculated by dividing the text's total word count by the whole number of sentences. **WL** represents average syllable count per word, which is obtained by dividing the text's total syllable count by its entire word count. After calculating the readability index according to the Flesch Score, the result of the equation is compared to the **Flesch Chart**, which classifies the level of text difficulty into **7 groups** as follows. If the Flesch score is between **0 and 30**, the readability rating is considered **very difficult**; if it is between **30 and 50**, the readability rating is considered **difficult**; if between **50 and 60**, the readability rating is considered **somewhat difficult**; between **60 and 70**, the readability rating is considered **normal**; between **70 and 80**, the readability rating is considered **somewhat easy**; between **80 and 90**, the readability rating is considered **easy**; and finally, if the Flesch score is between **90 and 100**, the readability rating is considered **very easy**.

However, some studies (Courtis, 1995; Ricci, 2017; Xu et al., 2018) have used the **Gunning-Fog** index to calculate readability or difficulty. This index takes into account grammatical complexity and document length. **The Fog index** is calculated as a simple function of readability, which is determined for each paragraph of approximately 100 words as follows:

$$\text{Fog Score} = (\text{Words per Sentence} + \text{Percent of Complex words}) * 0.4$$

The Fog index is based on the complexity of the text, which considers the average number of vocabularies per phrase and the proportion of complex terms in each paragraph. In this context, complex words are defined as those with three or more syllables. The index's output reveals how many years of formal education a typical reader with a normal intelligence level would require to read a text just once and comprehend its content. **The higher the Fog index**, the lower the readability of the text, which means that a person of average intelligence would need more years of formal education to comprehend the content. This is particularly relevant for annual reports, where a high Fog index may indicate that the report is difficult to read and understand.

Once the **Fog index** has been calculated, the resulting score is compared to the readability classifications on the Fog Chart to determine the level of text difficulty. The Fog Chart categorizes text into **5 groups** based on their readability level. These groups are as follows. If the Fog score is **greater than or equal to 18**, then the readability rating is **unreadable and too complex**; if it is between **14 and 18**, then the readability rating is **difficult**; the readability rating is perfect if the score between **12 and 14**; between **10 and 12**, the readability rating is considered **easy**; and finally, if the score is **less than 10**, the readability rating is considered **too easy**.

Badawy and Ibrahim (2016) have highlighted several **criticisms of readability measures** in the context of accounting disclosure. One major critique is that such measures have limited utility and significance in this field. The effectiveness of verbal disclosure in financial statements depends not only on the level of language complexity or simplification, but also on the readers' ability to comprehend the disclosure. Readability measures often focus solely on factors such as word and sentence length, while ignoring equally

important factors such as the readers' specifications and reading ability, as well as the report's design and formatting, including the use of graphs, tables, abbreviations, and headings. Applying readability measures to accounting disclosure may, therefore, lead to misleading results, suggesting that the disclosure is difficult to read for its users.

Similarly, Loughran and McDonald (2014) have criticized the overreliance on complex words when evaluating the readability of financial information. They argue that financial reports contain terms that are well-recognized in the business field and often consist of multi-syllable words, which are easily understood by investors and analysts. Therefore, such reports do not necessarily require the use of a dictionary. Moreover, using sentence length as an indicator of readability in the context of accounting narratives may be misleading. Financial disclosures often require long sentences that rely on a combination of short words to link complex terms and convey the necessary information.

Based on the above review and analysis of previous studies on the readability of audit report, the researchers suggest two approaches that can be relied upon. The **first approach** is based on the degree of complexity of the report, using indicators such as the Flesch Score and the Fog Score. These indicators take into account factors such as the average number of words per sentence, the number of complex words, the number of syllables per word, and the percentage of words consisting of six or seven characters. However, this approach has been criticized for being less accurate, as it neglects the experience of users in understanding and assimilating the information and terms contained in these reports. The **second approach** involves measuring the readability of the report in terms of its length, such as the number of words, pages, or size of the report. This approach is less complicated and can

be applied to any language in which financial reports are written, including English, Arabic, and others. It is also characterized by its ease of use, lower susceptibility to measurement errors, and repeatability, making it the most appropriate approach in the field of accounting and auditing.

3. Research Hypotheses Development

To develop the research hypotheses, the researchers address the following aspects in this part. First, analyzing the association between the auditor's narcissism and the audit report readability, and developing the first hypothesis for this research (H1). Second, analyzing the effect of the percentage of female representation in the audit committee on the relationship between the auditor's narcissism and the readability of the audit report on the annual financial statements, and developing the second hypothesis for this research (H2), as follows.

3.1 Auditor's Narcissism and the Readability of the Audit Report

Previous studies (e.g., Velte, 2018a; Chang & Stone, 2019a, b; Salehi et al., 2020; Jayasree & Shette, 2021) have identified three categories of determinants that affect the audit report readability. The first category includes determinants related to the characteristics of the auditee, such as the size of the client, the ratio of financial leverage, the fiscal year end, the exposure to risks, the degree of ownership concentration or dispersion, the type of industrial sector and growth rate. The second category includes determinants related to the auditor and audit firm, including the size of the audit firm, the auditor's opinion, industrial specialization, and the delay period for issuing the audit report. Finally, the third category includes determinants of the audit profession practices environment, such as

modifications made to some auditing standards discussed in the previous section.

The current research focuses on the auditors due to their main role in conducting the auditing process from accepting the audit client till forming the opinion and writing the audit report. In this context, some studies (e.g., Fakhfak, 2015; Gambetta et al., 2023) have investigated the **impact of the readability of the audit report on stakeholders**. These studies have concluded that the use of difficult and complex sentences and terms by auditors can hinder stakeholders' understanding and increase the expectations gap. This, in turn, increases the risk of misinterpretation, and threatens the achievement of the audit profession's goals, which would be negatively reflected on stakeholders' decisions.

The researchers conclude from the foregoing that the audit report is a crucial communication tool that helps users to be more confident in the published financial statements. Given the modifications made to the audit report, it becomes a necessity to address its readability. By improving the audit report readability, stakeholders can better understand the audit findings, which can enhance the usefulness of the report. Overall, improving the readability of the auditor's report can contribute to better decision-making by stakeholders and ultimately benefit both the audit profession and its stakeholders.

With regard to the **concept of narcissism**, it refers to a mental and psychological state in which a person's excessive self-interest causes them to ignore the external environment and the circumstances of others. **Narcissistic** individuals may disregard regulations when they are dissatisfied with them and may even manipulate them for their own benefit. This personality trait can significantly shape an individual's behavior (Salehi et al.,

2022). Narcissistic individuals tend to seek out affiliation with others who share this trait, as they provide support for their self-image and status in society (Grosz et al., 2020). Narcissistic leaders can have numerous negative consequences, including managerial and employee failure, exploitation of others, engaging in unethical behavior, ignoring external threats to the organization, and destroying trust and relationships within the organization (Rosenthal & Pittinsky, 2006).

By applying the narcissism concept to auditors, **narcissistic auditors** perceive themselves as playing a vital role in realizing the firm value and may not be afraid of financial report failure. However, these characteristics can cause problems in personal and organizational relationships. A narcissistic auditor may ignore environmental changes, such as changes in the market and competitor threats. Due to a lack of sympathy and understanding, narcissistic auditors constantly seeking admiration, exhibiting a high willingness to take risks to maintain their own achievements which can make them unpopular among employees (Church et al., 2020). Auditor's narcissism can be inferred by **indicators** such as the auditor's signature size as indicated by the length or number of its letters, exaggerated titles, or by writing the name in three or four, or by focusing on the qualification or the family name (Church et al., 2020; Salehi et al., 2023).

In this regard, Salehi et al. (2023) investigated the impact of auditors' narcissism on the audit report readability in firms listed on the Tehran Stock Exchange between 2012 and 2018. The study concluded that auditor narcissism has a negative and significant effect on the readability of the audit report. It suggests that the more narcissistic the auditor, the more difficult and complex his report on auditing the annual financial statements to read.

To the best of the researchers' knowledge, there is a relative lack of studies that have directly examined the influence of auditor's narcissism on the audit report readability. Therefore, the researchers conclude that auditors' narcissism might have a negative and significant impact on the readability of their report on auditing the annual financial statements. Also, the existence of more recent study, such as the Salehi et al. (2023) study, indicates the importance of the current research. Their reliance on actual data from financial statements excluding the banking sector justifies the use of this applied approach in the current research, as will indicated later, to test the relationship under study. This suggests that testing this relationship in a financial reporting environment of emerging markets, such as Egypt, where research in this area is relatively scarce, may be more important.

Accordingly, the researchers believe that the auditor narcissism can influence the audit report readability on the annual historical financial statements. Therefore, it can be hypothesized that the more narcissistic the auditor is, the lower the ability of his audit report to be readable. This hypothesis is consistent with previous studies in this area which justifies the researchers' approach to formulate the first directed research hypothesis in an alternative form as follows:

H₁: Auditor's narcissism negatively and significantly affects the readability of the audit report on the annual historical financial statements of firms listed on the Egyptian Stock Exchange.

3.2 The Percentage of Female Representation in the Audit Committee, Auditors' Narcissism and the Readability of the Audit Report

Gender diversity within firms has been a topic of interest to researchers in various fields, as well as to many legislations in developed countries. In the

last decade of the twentieth century, there was a significant increase in the number of women entering the accounting field, after the ignorance of their expertise and skills in previous ages. As Francis et al. (2015) noted, there has also been an increase in the number of women in senior executive management teams, boards of directors, and audit committees. This rise in female representation has drawn the attention of researchers, not only within the accounting field, but also in other areas of research. They believe that examining the impact of gender differences on managerial decisions and practices can enrich accounting thought.

In recent years, there have been numerous studies in the field of auditing and accounting that focus on the impact of gender diversity among members of the audit committee on various factors that affect a firm's financial performance and the quality of its financial reports. However, many questions remain unanswered, and there is a need for further research and investigation in light of the ongoing developments at the professional and legislative levels. One area of interest is exploring the nature of the association between auditor's narcissism and the audit report readability in the Egyptian business environment, and how the proportion of female representation in the audit committee can moderate this relationship.

Despite the potential impact of gender diversity within audit committees on the quality of financial reports and the readability of auditor reports, accounting and auditing research has not given sufficient attention to this variable. Gender diversity in audit committees is not only as important as other characteristics, but it has also been less studied than gender diversity in the board of directors in corporate governance research (Gul et al., 2011). This highlights the need for further research to explore the potential impact of gender diversity within audit committees on financial reporting practices

and the readability of auditor reports. Such research can provide valuable insights into the potential benefits of the audit committee's gender diversity and its effect on the quality of financial reporting and auditing practices.

Gender diversity in senior positions within firms has gained increased attention in recent years, particularly in the last decade of the twentieth century, following legislative reforms, financial crises, and scandals. Since then, researchers have examined the impact of appointing women to positions such as directors on the board, executive directors, and members of audit committees. However, there are still variations in the proportion of female representation on boards of directors and audit committees across countries, due to differences in legislation and beliefs (Thiruvadi & Huang, 2011). This highlights the need for further research to explore the potential benefits of gender diversity in senior positions within firms and its impact on financial reporting practices and auditing practices across different countries. Such research can shed light into the potential benefits of gender diversity in promoting effective corporate governance practices.

In this context, several countries worldwide have initiated efforts to increase female participation on boards of directors and audit committees. Norway was the first country to adopt a mandatory approach, requiring the appointment of at least 40% of female members on corporate boards by January 2008. Spain, Belgium, the Netherlands, and Sweden followed this initiative. In 2011, France enacted similar legislation, mandating the appointment of 40% female board members for firms trading shares on the stock exchange, with full compliance required by 2017 (Lakhal et al., 2015). This global trend towards empowering women in boards of directors and audit committees makes it essential for researchers to study the implications of such legislation on business practices. Accounting and auditing research has

linked gender diversity in various governance mechanisms by examining the impact of female inclusion in audit committees, senior executive management, boards of directors, and external auditing on the quality of financial reporting, external auditing, and financial performance of firms. Such research can shed light on the potential impact the gender diversity has on the quality of financial reports, decision-making, and protection of corporate stakeholders.

Regarding the source of sexual differences between male and female members of audit committees, it has been a subject of interest in the literature with various approaches attempting to explain these differences. Some researchers attribute these differences to biological factors such as hormones and gender-related genes, while others argue that they are a result of socialization and psychological conditions, i.e., behavioral differences. This raises the question as to whether the field of accounting studies is more focused on biological or behavioral theories in explaining these differences. In summary, biological studies suggest that the physiological differences between the males and females can result in differences in the roles, functions, and capabilities of each gender, which can be reflected in the behavior of individuals in their ability to make decisions, and express opinions in meetings. That is, while males are distinguished from females in many areas that have implications for business, males tend to be more impulsive in their behavior, including decision-making, compared to females (Vernon et al., 2011).

Moreover, the study of Pucheta et al. (2016) suggests that the presence of females on the audit committees and board of directors can have positive effects on the information environment within a firm. For example, female managers tend to have better interpersonal skills to deal with others, and their

communication style is characterized by participation. This may improve the decision-making process by encouraging the board of directors to take into account different points of view and include a variety of opinions in their discussions. This can reduce bias when formulating the firm's overall strategy and can also build good relationships between the firm and its external stakeholders. Also, gender diversity can imply inclusiveness in discussing issues, which is reflected in the density of information exchanged between members of the board as well as with auditors, and external parties. This generates an information-rich environment, which may limit attempts to exchange information of a confidential nature, and thus reduce the problem of information asymmetry.

Research on the relationship between gender diversity among members of the audit committee has taken various paths in attempting to understand its impact on the effectiveness of their tasks, which is reflected in the quality level of financial reports and the readability of the auditor's report on auditing the annual financial statements. One research path has focused on the link between gender diversity within audit committees and boards of directors and the information asymmetry between management and stakeholders. This includes examining the degree to which men and women differ in lowering the severity of information asymmetry and how it affects the level of disclosure. Another research path has focused on the link between gender diversity and fraudulent practices. Finally, another research path has examined the impact of the audit committee's gender diversity on the audit report readability (Bepari et al., 2023). This path is the focus of the current research.

In this context, previous studies (e.g., Velte, 2018a, b, 2020; Bepari, 2023) have analyzed the effect of female representation in the audit

committee on the readability of the auditor's report on auditing the annual financial statements. These studies indicate that there is an agreement among researchers regarding the significant direct impact of female representation on the readability of the report. This is due to the fact that females tend to possess better interpersonal skills to deal with others and are more inclusive in discussing the issues at hand. This inclusiveness is reflected in the intensity of information exchanged among members of the audit committee as well as with external parties, which generates an information-rich environment. This, in turn, enhances the ability of auditors in making better professional judgments and developing procedures and methods for detecting fraud. This deep understanding of reputational risks and experience in preparing audit reports can contribute positively to preparing a readable and easy-to-understand report on auditing the annual financial statements.

Also, Sardari et al. (2021) studied the impact of audit committees on the association between chief executive officer narcissism and real earnings management. However, this study has been criticized for the lack of attention to the impact of female representation on the audit committee and its impact on the relationship between the auditor's narcissism and the readability of the audit report on the annual financial statements.

Concerning the Egyptian context, according to Article 37 of the listing rules issued recently in January 2023, the audit committee is to be consisted of an odd number of members, not less than three from the non-executive board members, provided that at least one of them has financial and accounting expertise. The committee may include in its membership members from outside the firm, and the majority of the committee members must be independent, especially the committee chairman (FRA, 2023).

However, it does not specify the percentage of females who should be included in the audit committee.

In light of the above, **the researchers believe that the interaction between the female percentage in the audit committee and the auditor's narcissism can create an interactive variable** that could potentially impact the strength and/or direction of the relationship. related to the effect of the first hypothesis (H_1) compared to ignoring that interactive effect. Therefore, the second hypothesis of the research (H_2) can be derived as follows:

H₂: The significant and negative effect of the auditor's narcissism on the readability of the audit report on the annual historical financial statements of firms listed on the Egyptian Stock Exchange differs according to the percentage of female representation in the audit committee.

4. Research Methodology

The primary aim of this part is to address the applied study conducted to test the research hypotheses. To achieve this goal, the researchers present the following elements: data and sample, the research model, measurement of variables, study tools and procedures, and statistical analysis tools.

4.1 Data and Sample

The study population for this research involves all non-financial firms listed on the Egyptian Stock Exchange from 2017 to 2022.¹ Data collection for the study began in 2017, as this is the year in which most firms began preparing and disclosing their corporate governance reports. Financial

¹ To avoid any likely effect of the adoption of International Financial Reporting Standards (IFRS) on the relationship under investigation, the researchers have taken into account that the study period is after the adoption of IFRS in Egypt in 2015.

institutions, such as insurance companies and banks, were omitted from the study due to the regulatory rules and unique measurement and disclosure requirements that govern their activities. This exclusion has been supported by previous studies (e.g., Velte, 2020; Salehi et al., 2022; Bepari, 2023; Salehi et al., 2023) which have noted the differences in the nature of their activities compared to non-financial firms.

A judgmental sample was selected based on the following criteria: (1) the firm must be listed on the Egyptian Stock Exchange, (2) the firm's annual financial statements must be available for the study period, and (3) the firm must publish its financial statements in Egyptian pounds. Firms whose financial statements were not available during the study period were excluded from the sample. Consequently, the study sample comprised 105 firms, resulting in a total of 630 firm-year observations. The researchers have followed the same approach as previous studies (e.g., Salehi et al., 2022; Bepari, 2023; Salehi et al., 2023) by organizing the data by firm-year observations. **Table 1** lists the sectors that the sample firms are a part of, along with the corresponding number and percentage of firms in each sector relative to the total sample.

Table 1: Classification of the study sample firms by sector

<u>Sector</u>	<u>No. Firms</u>	<u>Percentage</u>
Basic Resources	8	7.6
Industrial goods, Services and Automobiles	6	5.7
Building Materials	11	10.5
Health Care & Pharmaceuticals	11	10.5
Travel & Leisure	8	7.6
Contracting & Construction Engineering	12	11.4
Food, Beverages, and Tobacco	23	21.9
Real Estate	26	24.8
Total	105	100%

4.2 Research Model

Figure (1) provides a summary of the research model under the basic analysis, that shows the expected negative effect of the auditor's narcissism on the audit report readability, and the interactive effect of the audit committee's gender diversity on this relationship.

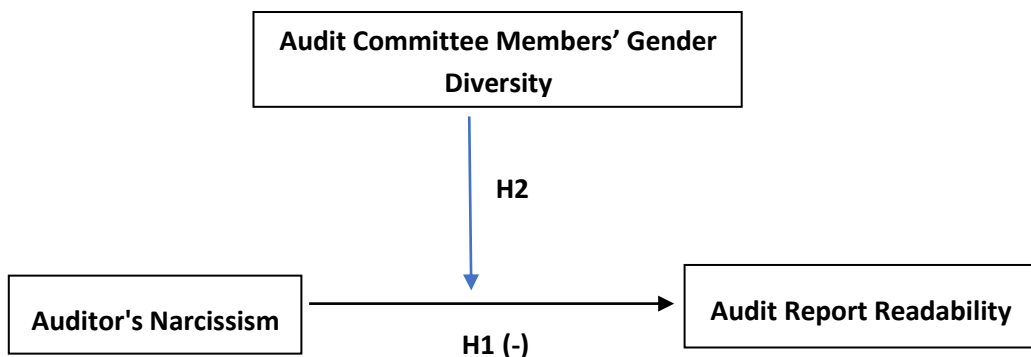


Figure 1: Research Model Under the Basic Analysis

Source: Prepared by researchers

4.3 Study Tools and Procedures

For this research, the researchers relied on secondary data, including financial statements and their notes. Also, the disclosure form regarding the Board of Directors and the structure of the shareholders, including the members of the Audit Committee obtained from the Egyptian Stock Exchange website (www.egx.com.eg/ar/NewsSearch.aspx?com) to. Additionally, information gathered from the website Mubasher Information Egypt (www.mubasher.info/countries/eg).

Regarding the procedures of this study, the researchers collected the necessary data to measure the study variables. The auditor's narcissism was measured by reference to the length or number of letters in the auditor's signature, or by the use of exaggerated titles, multiple repetitions of the name, or a focus on the qualification or family name. A value of one was

assigned if any of these criteria were met, and zero otherwise, following the methodology of Church et al. (2020) and Salehi et al. (2023). Data for this variable was obtained from the auditors' report. The audit report readability was measured using the Fog index, which calculates the level of ease or difficulty in reading the report. The Fog index was calculated for each paragraph of approximately 100 words as follows:

$$\text{Fog Score} = (\text{Words per Sentence} + \text{Percent of Complex words}) * 0.4$$

The percentage of female representation in the audit committee is measured by dividing the number of women in the audit committee by the whole number of members in the audit committee, according to the methodology outlined by Velte (2018a). As a dummy variable, the auditor's opinion is given a value of (1) if the auditor's report with a modified opinion and (0) otherwise, following the methodology outlined by Velte (2020). After calculating the values for all variables, the researchers organized them into electronic tables using the Microsoft Excel program, in preparation for statistical analysis (Salehi et al. 2023). **In Table 2**, a summary of the variable measurements utilized in this research is presented.

Table 2: Measurements of research variables

Variable	Symbol	Type (Pred. Sign)	Measurement
Audit Report Readability	AuditRD	Dependent	<p>For the purposes of basic analysis, the Fog index is utilized to determine the level of readability within the report. This indicator takes into account the complexity of linguistic formulation and the document length. It is determined for each paragraph of approximately 100 words using the following formula: *</p> <p>Fog Score = (Words per Sentence + Percent of Complex Words) * 0.4</p> <p>For the purposes of sensitivity analysis, the natural logarithm of the size of the audit report is used, following the research of Xu et al. (2018) and Salehi et al. (2022).</p>
Auditor’s Narcissism	AuditNA	Independent (-)	<p>It is measured by means of the size of the auditor’s signature by the length or number of its letters, or exaggerated titles, or by writing the name in three or four, or by focusing on the qualification or the family name (Church et al. 2020; Salehi et al. 2023).</p>
Gender Diversity	ACW	Interactive (±)	<p>It is measured by calculating the females’ percentage in the audit committee through dividing the number of female members by the total number of audit committee members (Velte, 2018a).</p>

Audit Client Size	SIZE	Control (-)	It is calculated by taking the natural logarithm of the total assets (Roiston & Harymawan, 2020; Salehi et al., 2023).
Audit Client Age	AGE	Control (-)	It is calculated by taking the natural logarithm of the number of years the firm was listed on the Egyptian Stock Exchange (Salehi et al., 2023).
Audit Opinion	AuditOpin	Control (±)	It is assessed as an indicator variable that takes the value of (1) if the audit report with a modified opinion, and takes the value (0) otherwise (Velte, 2020).

* Based on the average word count per phrase and the proportion of complex terms per paragraph, the Fog index evaluates the degree of text complexity. Complex words are characterized as having three syllables or more. After calculating the Fog Score, the result is compared to a readability classification chart to determine the text’s difficulty level. A score of (4) is assigned to texts categorized as very easy, (3) for easy texts, (2) for perfect texts, (1) for difficult texts, and (0) for very difficult, unreadable, and complex texts. The data is then analyzed according to these five groups using the Ordinal Logistic Regression method.

Source: Prepared by researchers

4.4 Statistical Analysis Tools

The researchers used the SPSS statistical program. The ordinal logistic regression method was used for the basic analysis since this type of regression used when the dependent variable was divided into ordinal groups and the independent variable took the value of either zero or one. The readability of the auditor's report on the annual financial statements, which is the dependent variable in this research, is assessed using the Fog index to determine the level of ease or difficulty in reading the report. The index is used to categorize the level of readability into five groups (very easy, easy, perfect, difficult, and very difficult). The independent variable is the auditor's narcissism, which is assigned a value of one if the auditor is deemed narcissistic and zero otherwise.

In the sensitivity analysis, the researchers used the statistical program EViews 10 to test the hypotheses of the research. They employed balanced panel data packages and tested them using simple and multiple linear regression methods. Additionally, they utilized Panel Random Least Squares in the sensitivity analysis of the study data. EViews 10 was chosen for this analysis because it allows for testing of balanced cross-sectional data packages, which is not available in the SPSS statistical program.

In addition, the researchers used descriptive statistical methods to analyze the study variables. To assess the stability of the time series of the research variables, the researchers conducted a unit root test. This test examines whether a time series is stable or not over time. Non-stable time series can cause issues with regression analysis, so it is important to test before conducting further analysis. The researchers also conducted a co-integration test to analyze whether there was a long-term relationship between the research variables. These tests were conducted before performing the

regression analysis to ensure that the assumptions of the regression model were met and that the results will be reliable.

5. Research Hypotheses Testing Results

5.1 Descriptive Statistics and Correlation Test between the Main Variables

Table 3 displays the minimum, maximum, standard deviation, and mean values for the dependent, independent, and control variables during the study period from 2017 to 2022. The table shows that the average values for all variables fall within the range of the maximum and minimum values, indicating homogeneity in the data. This is further supported by the standard deviation values, which are less than the corresponding arithmetic means for each variable.

Table 3: The main research variables' descriptive statistics

<u>Variable</u>	<u>N</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Mean</u>	<u>Std. Deviation</u>
AuditRD	630	0	4	2.00	1.415
AuditNA	630	0	1	.87	.335
ACW	630	.158	.554	.292	.1279
SIZE	630	5.7411	9.998	8.517	.693
AGE	630	.301	1.602	1.224	.228
AuditOpin	630	0	1	.54	.499

Pearson's correlation coefficient was utilized by the researchers to determine the direction and strength of the correlation between the control and independent variables. In case the correlation between these variables was below 0.7, it indicated a weak correlation between them, which meant

that there was no issue of linear self-correlation. Therefore, the multiple regression method could be used without any problems. **Table 4** displays the correlation matrix between the research variables. It indicates that there is a weak correlation between the variables, as all correlation coefficients are less than 0.7. This value serves as the upper threshold at which multicollinearity problems may start to emerge, as measured by Salehi et al. (2023).

Table 4: Correlation Coefficient Matrix

	<u>AuditRD</u>	<u>AuditNA</u>	<u>ACW</u>	<u>Size</u>	<u>AGE</u>	<u>AuditOpin</u>
AuditRD	1					
AuditNA	-0.543*	1				
ACW	0.509*	-0.325*	1			
Size	-0.183*	0.358*	-0.166*	1		
AGE	-0.203*	0.381*	-0.224*	0.217*	1	
AuditOpin	-0.205*	0.129*	-0.334*	0.391*	0.133*	1

* Correlation is significant at 0.05 level.

5.2 The result of the first hypothesis test (H1)

The aim of this hypothesis was to test whether the auditors' narcissism had a significant negative effect on the readability of their report on auditing the annual financial statements. **To test this hypothesis statistically, it was reformulated as a null hypothesis, as follows:**

H₀: Auditor's narcissism does not negatively and significantly affect the readability of the audit report on the annual historical financial statements of firms listed on the Egyptian Stock Exchange.

This was done by relying on the ordinal logistic regression model, according to the following equation (1):

$$\text{AuditRD}_{(it)} = \beta_0 + \beta_1 \text{AuditNA}_{(it)} + \epsilon_{(it)} \quad (1)$$

Where: $\text{AuditRD}_{(it)}$ represents readability of the audit report on the annual financial statements of the firm (i) for the year (t); $\text{AuditNA}_{(it)}$, Narcissism of the auditor of the firm (i) for the year (t); β_0 , the constant part of the regression equation; β_1 , the regression parameter that determines the direction of the relationship and measures what the auditor's narcissism explains about changes in the readability of the audit report on the annual financial statements; $\epsilon_{(it)}$ is the random error. The null hypothesis is rejected if the P-value of the auditor's narcissism is less than 0.05. **Table 5** displays the regression analysis results for model No. (1) under the basic analysis.

Table 5: The result of testing the first hypothesis H₁ under the basic analysis*

<u>Model (1)</u>	$\text{AuditRD}_{(it)} = \beta_0 + \beta_1 \text{AuditNA}_{(it)} + \epsilon_{(it)}$	
	β	<u>P-value</u>
AuditNA	-20.908	0.000
R-square Cox and Snell		0.397
R-square Nagelkerke		0.414
R-square McFadden		0.157
Chi-Square		319.171
Sig.		0.000

* The sample is 630 firm-year observations, and the acceptable level of significance is 5%.

The R-Square Nagelkerke, shown in **Table 5**, indicates that 41.4% of the variability in the readability of the audit report on the annual financial statements can be explained by changes in the independent variable (auditor narcissism). The statistical test supports **the significance of the model as a whole**, with a P-value of 0.000, which is lower than the acceptable

significance level of 0.05. Thus, **the statistical test confirms the validity of the model as a whole.**

The statistical analysis's findings show that the auditor's narcissism **significantly reduces** the readability of the report they provide on auditing the annual financial statements. The coefficient for auditor narcissism is -20.908, with a significant level of (P-value = 0.000), indicating that this variable has a significant negative effect. **Therefore, H1 is accepted.** This result is in line with those of a study conducted by Salehi et al. (2023). **The researchers** suggest that the negative impact of auditor narcissism on audit report readability is a logical result of the auditor's self-arrogance and pride, which can lead to resistance to constructive suggestions, and a tendency to blame others for failures. A narcissistic auditor may also ignore environmental changes. Such behavioral characteristics can cause problems in personal and organizational relationships, and lead to significant crises which can be reflected in the issued audit report as being unreadable and overly complex.

5.3 The result of the second hypothesis test (H2)

This hypothesis aimed to test whether the significant and negative effect of the auditor's narcissism on the audit report readability differs according to the females' percentage in the audit committee of these firms. **To test this hypothesis statistically, it was reformulated as a null hypothesis as follows:**

H₀: The significant and negative effect of the auditor's narcissism on the readability of the audit report on the annual historical financial statements of firms listed on the Egyptian Stock Exchange does not differ according to the percentage of female representation in the audit committee.

This was done by relying on the ordinal logistic regression model, according to the following equation (2):

$$AuditRD_{(it)} = \beta_0 + \beta_1 AuditNA_{(it)} + \beta_2 ACW_{(it)} + \beta_3 AuditNA_{(it)} * ACW_{(it)} + \varepsilon_{(it)} \quad (2)$$

where:

- AuditRD*_(it): As previously defined in Model No. (1);
- AuditNA*_(it): As previously defined in Model No. (1);
- ACW*_(it): It represents the percentage of female representation in the audit committee of firm (i) at the end of year (t);
- AuditNA*_(it) * *ACW*_(it): Refers to the interactive effect of the females' percentage in audit committee total members and the auditor's narcissism.

The null hypothesis is rejected if the P-value of the interactive effect (*AuditNA*_(it)**ACW*_(it)) is less than 0.05. **Table 6** displays the results of the regression analysis for model No. (2) under the basic analysis.

Table 6: The result of testing the second hypothesis H₂ under the basic analysis

Model (2)	Taking into account ACW		Ignoring ACW	
	β	P-value	β	P-value
AuditNA	-24.765	0.000	-20.908	0.000
ACW	11.986	0.000	-----	-----
AuditNA* ACW	5.991	0.000	-----	-----
R-square Cox and Snell		0.630		0.397
R-square Nagelkerke		0.656		0.414
R-square McFadden		0.309		0.157
Chi-Square		625.961		319.171
Sig.		0.000		0.000

* The sample is 630 firm-year observations, and the acceptable significance level is 5%.

Table 6 displays the significance of the model as a whole (P-value = 0.000), with an increase in its explanatory power from 41.4% to 65.6%. The regression coefficients also indicate a stronger negative effect of the auditor narcissism on the audit report readability, with the auditor's narcissism coefficient **increasing** from -20.908 to -24.765 after accounting for the females' percentage in the audit committee of the firm as an interactive variable for the relationship. The interactive variable (AuditNA* ACW) was found to be significant (P-value = 0.0000). As a result, **H₂ is accepted**. It is also evident that there is a significant and positive correlation between the proportion of female representation in the audit committee and the readability of the audit report on the auditing of the annual financial statements. This finding is consistent with the results of numerous studies, such as Velte (2018a, b, 2020) and Bepari (2023).

The researchers believe that the significant effect of the percentage of female representation in the firm's audit committee as an interactive variable for the relationship between the auditors' narcissism and the readability of their report on auditing the annual financial statements may be due to females' superior personal skills in dealing with others and their ability to comprehensively discuss the issues raised. This is reflected in the density of information exchanged between members of the audit committee as well as with external parties, creating an information-rich environment that limits attempt to exchange information of a confidential nature. This, in turn, reduces the problem of information asymmetry and enhances the auditor's experience in improving the quality of their judgments. It also enhances their professionalism and their ability to develop fraud detection procedures and methods, understand the reputational risks of their clients, and draw on their experience in preparing audit reports. All these factors contribute positively

to the preparation of a readable and understandable report on the audit of the annual financial statements.

6. Additional Analysis

It is clear to researchers, from the analysis of previous studies (e.g., Velte, 2018a; Chang & Stone, 2019a, 2019b; Salehi et al., 2020; Jayasree & Shette, 2021), that other analysis can be considered as one of the methodologies used to add more clarity and understanding to the relationships under study in basic analysis, and to address any defects in the basic research model, if any. This is achieved by relying on variables whose impact has not been previously verified or by changing the method of dealing with the impact of previously tested variables on the relationships under study. The purpose of this methodology is to conduct a comparison between the results of the additional and basic analyses in order to determine the extent of their differences and the impact of this difference on the results reached (Salehi et al., 2023).

By analyzing the most relevant previous studies (e.g., Velte, 2018a, 2018b, 2020; Roiston & Harymawan, 2020; Bepari, 2023; Salehi et al., 2023), a question arises about the extent to which it is preferable to follow either the control or interactive variables approaches. To answer this question, the relationship under study of the second hypothesis was retested in the basic analysis after introducing control variables of the audit client firm size, audit client firm age, and audit opinion. The purpose was to compare the results of the additional and basic analyses and determine the extent of the difference between them, in order to provide more clarity on the main relationships in the basic analysis and verify the ability to influence the strength or direction of the relationship under study after the introduction of the control variables. The researchers relied on the control approach to

address the variables and retested the second hypothesis of the research to answer this question. To test this hypothesis, the following equation is used, and **Table 7** demonstrates the outcomes of this model's statistical analysis.

$$\begin{aligned}
 \text{AuditRD}_{(it)} = & \beta_0 + \beta_1 \text{AuditNA}_{(it)} + \beta_2 \text{ACW}_{(it)} + \beta_3 \text{AuditNA}_{(it)} * \text{ACW}_{(it)} + \\
 & \beta_4 \text{SIZE}_{(it)} + \beta_5 \text{AGE}_{(it)} + \beta_6 \text{AuditOpin}_{(it)} + \varepsilon_{(it)}
 \end{aligned}$$

Table 7: The results of the ordinal logistic regression analysis to test the relationship of the additional analysis.

	Under additional analysis (With control variables)		Under basic analysis (Ignoring control variables)	
	β	<u>P-value</u>	β	<u>P-value</u>
AuditNA	-24.911	0.000	-24.765	0.000
ACW	11.866	0.000	11.986	0.000
AuditNA* ACW	5.827	0.000	5.991	0.000
SIZE	0.096	0.444	-----	-----
AGE	0.247	0.540	-----	-----
AuditOpin	-0.383	0.030	-----	-----
R-square Cox and Snell	0.633		0.630	
R-square Nagelkerke	0.659		0.656	
R-square McFadden	0.311		0.309	
Chi-Square	630.670		625.961	
Sig.	0.000		0.000	

* The sample is 630 firm-year observations, and the acceptable significance level is 5%.

The significance of the model as a whole is **significant** (P-value = 0.000), indicating the increase in its explanatory power from 65.6% to 65.9% in light of taking into account each of the audit client firm size, audit client firm age, and audit opinion as control variables. The analysis of the regression coefficients shows a **significant negative effect** of the auditor's narcissism on the audit report readability, depending on the percentage of female representation in the audit committee. In addition, there is a **significant positive** relationship between the proportion of female representation in the audit committee and the readability of the auditor's report on the auditing of the annual financial statements. However, there is a strong inverse correlation between the auditor's opinion and the readability of the audit report. While there is no significant relationship between audit client firm size, audit client firm age, and the audit report readability. **Thus**, the researchers were able to answer the question about whether the effect of the auditor narcissism on the audit report readability differs according to the females' percentage in the audit committee after the introduction of control variables.

Tracking the answers to the questions under the control variables approach and comparing them with the results of the hypothesis test (H₂) under the interactive variable approach shows that **the results of both approaches agree** on the difference in the significant negative impact of the auditors' narcissism on the readability of the audit report on the annual financial statements according to the difference in the percentage of female representation in the audit committee of these firms.

7. Sensitivity Analysis

Sensitivity analysis is one of the methodologies used to verify the robustness of the results obtained from the basic analysis of the two research hypotheses. Therefore, the researchers in this study use alternate measures for

the dependent variable (audit report readability) to assess the sensitivity of the findings from the basic analysis. This involves shifting from using the SPSS program to the Eviews 10 statistical program to test the research hypotheses, where the balanced panel data packages were tested using the simple and multiple linear regression method. Panel random least squares and panel fixed least squares were also used instead of using the ordinal logistic regression method. **Through sensitivity analysis, the researchers pursue to reply the following question:** Are the results obtained with regard to testing the research hypotheses different from the basic analysis when using different methods for measuring the dependent variable and different regression methods for testing both hypotheses? In order to address this question, the research hypotheses were retested by rerunning the models using alternative methods for measuring the dependent variable. **To achieve this**, the researchers relied on the natural logarithm of the auditor's report size, based on Salehi et al. (2022). The simple and multiple regression methods were used instead of the ordinal logistic regression method.

Concerning the outcomes of (H_1) conducted under sensitivity analysis. **To test this hypothesis statistically, it was reformulated as a null hypothesis, as follows:**

H₀: There is no significant relationship between auditors' narcissism and the readability of their report on auditing the annual financial statements of firms listed on the Egyptian Stock Exchange.

The null hypothesis is rejected if the P-value of the auditor's narcissism is less than 0.05. This is tested by relying on the **simple linear regression model**, following the equation below:

$$AuditRD_{(it)} = \beta_0 + \beta_1 AuditNA_{(it)} + \varepsilon_{(it)} \quad (1)$$

Before conducting the Panel Regression analysis, **the Hausman Test²** is used to identify the appropriate regression method free from measurement errors and to determine whether to use the Panel Fixed Least Squares regression method or the Panel Random Least Squares regression method. The null hypothesis states that Panel Fixed Least Squares regression method is not the best, while the alternative hypothesis suggests it is (Gujarati & Porter, 2009). **Table 8** summarizes the Hausman test results. The test statistic is not significant, which means accepting the null hypothesis that the Panel Random Least Squares regression method is the appropriate regression method for the statistical model of the study.

Table 8: The results of the Hausman Test to determine the appropriate regression method for testing Hypothesis H₁

χ^2	Chi-Sq. d.f.	Prob	appropriate regression method
0.03561	1	0.8503	Panel random Least Squares

Source: Prepared by the researchers using the outputs of the statistical program (Eviews 10).

After identifying the appropriate regression method to test the research model, a Panel Regression analysis can be performed. The results can be displayed in **Table 9**.

² The Hausman test is also conducted when testing the second hypothesis to determine the appropriate regression method, in order to avoid repeating the theoretical part related to it in the body of the research.

Table 9: The results of testing the first hypothesis H₁ under sensitivity analysis

Model (1)	$AuditRD_{(it)} = \beta_0 + \beta_1 AuditNA_{(it)} + \varepsilon_{(it)}$	
	β	P-value
<i>AuditNA</i>	-0.543	0.000
R-squared		0.295
Adjusted R-squared		0.294
F-statistic		262.884
Sig.		0.000

* The sample is 630 firm-year observations, and the acceptable significance level is 5%.

Table 9 displays the results of the regression analysis for model No. (1) under the sensitivity analysis. The Adjusted R-Square is 0.294, indicating that 29.4% of the variability in the audit report readability can be interpreted by changes in the independent variable (auditor narcissism). The statistical test supports **the significance of the model as a whole**, with a P-value of 0.000, which is lower than the acceptable significance level of 0.05.

The results of the statistical analysis indicate that the auditors' narcissism has a **significant negative** effect on the readability of their report on auditing the annual financial statements. The coefficient for auditor narcissism is -0.543, with a significant level of (P-value = 0.000), indicating that this variable has a significant negative effect. **Therefore, the alternative hypothesis H₁ is accepted.** This finding is in agreement with the findings of a study conducted by Salehi et al. (2023).

Regarding the second hypothesis test (H₂) under sensitivity analysis. **To test this hypothesis statistically, it was reformulated as a null hypothesis, as follows:**

H₀: The significant and negative effect of the auditors' narcissism on the readability of their report on auditing the annual financial statements of firms listed on the Egyptian Stock Exchange does not differs according to the percentage of female representation in the audit committee.

This was done by relying on the multiple linear regression model following equation (2) below:

$$AuditRD_{(it)} = \beta_0 + \beta_1 AuditNA_{(it)} + \beta_2 ACW_{(it)} + \beta_3 AuditNA_{(it)} * ACW_{(it)} + \epsilon_{(it)} \quad (2)$$

The null hypothesis is rejected if the P-value of the interactive effect (*AuditNA_(it) * ACW_(it)*) is less than 0.05. **Table 10** displays the results of the multiple regression analysis of study model No. (2) under the **sensitivity** analysis.

Table 10: The results of testing the second hypothesis H₂ under sensitivity analysis

<u>Model (2)</u>	Taking into account ACW		Ignoring ACW	
	<u>B</u>	<u>P-value</u>	<u>β</u>	<u>P-value</u>
AuditNA	-0.697	0.000	-0.543	0.000
ACW	0.350	0.000	-----	-----
AuditNA* ACW	0.398	0.000	-----	-----
R-squared	0.505		0.295	
Adjusted R-squared	0.503		0.294	
F-statistic	212.778		262.884	
Sig.	0.000		0.000	

* The sample is 630 firm-year observations, and the acceptable level of significance is 5%.

Table 10 demonstrates the significance of the model as a whole (P-value = 0.000), indicating an increase in its explanatory power from 29.4% to 50.3%. The regression coefficients also indicate a stronger negative effect of the auditor’s narcissism on the audit report readability, with the auditor's narcissism coefficient **increasing** from -0.543 to -0.697 after accounting for the proportion of female representation in the audit committee of the company as an interactive variable for the relationship. The interactive variable (AuditNA* ACW) was found to be significant (P-value = 0.0000). As a result, **hypothesis (H₂) is accepted**. It is also evident that there is a positive and significant relationship between the proportion of female representation in the audit committee and the readability of the auditor's report on the auditing of the annual financial statements. This finding is consistent with the results of numerous studies, such as Velte (2018a, b, 2020) and Bepari (2023).

Comparing the results of testing the research hypotheses under the basic analysis and sensitivity analysis is shown in **Table 11**. Upon analyzing the results shown in this table, the findings from the sensitivity analysis significantly reinforce the conclusions drawn from the basic analysis.

Table 11: A comparison between the results of the basic analysis and the sensitivity analysis

The two research hypotheses	Under the basic analysis	Under the sensitivity analysis
<p>H₁:Auditor’s narcissism negatively and significantly affects the readability of the audit report on the annual historical financial statements of firms listed on the Egyptian Stock Exchange.</p>	<p>Accepted</p>	

<p>H₂: The significant and negative effect of the auditor’s narcissism on the readability of the audit report on the annual historical financial statements of firms listed on the Egyptian Stock Exchange differs according to the percentage of female representation in the audit committee.</p>	<p>Accepted</p>
---	------------------------

8. Research Findings, Recommendations, and Suggested Future Research

This study has yielded a number of practical results, which can be summarized as follows. The research’s findings show that the auditors’ narcissism **significantly and negatively** affects how easily readers can understand their report on auditing the annual financial accounts. Furthermore, the negative impact of the auditors’ narcissism on the readability of their report on auditing the annual financial statements **varies** depending on the percentage of female representation in the audit committee of the firms being audited.

Furthermore, the additional analysis showed that the results of both the control and interactive approaches agree on the significant negative impact of the auditor’s narcissism on the audit report readability, depending on the females’ proportion in the audit committee of firms being audited. Additionally, there is a **significant positive** correlation between the females’ proportion in the audit committee and the audit report readability. On the other hand, there is a **significant inverse** correlation between the auditor’s opinion and the audit report readability. However, there is **no significant** association between audit client firm size, age, and the audit report readability.

Finally, this research found in the sensitivity analysis that its results largely align with those of the basic analysis. Namely, the research found that an auditor's narcissism **significantly and negatively** affects the readability of the audit report on the annual financial statements, and that this effect varies based on the percentage of female representation among the members of the audit committee. Interestingly, results of the sensitivity analysis offer strong support for the findings of the basic analysis.

However, this research is **limited** to studying and testing the impact of the auditors' narcissism on the readability of their report on auditing the yearly financial statements, as well as testing the effect of the percentage of female representation in audit committee members, as an interactive variable, on this relationship, for the period 2017–2022, and for a sample of non-financial firms listed on the Egyptian Stock Exchange. **Therefore**, the research does not extend beyond this time frame, and does not extend to firms that are not listed on the Egyptian Stock Exchange, those that prepare their financial statements in a foreign currency, or financial institutions due to their special nature. **Moreover**, the research does not address the limited review report on the interim financial statements or the audit reports issued by the Accountability State Authority. The research focuses solely on the reports of auditors registered with the Financial Regulatory Authority.

After reviewing the research summary and results, and in light of the research problem and objective, the researchers **recommend** the following. **First**, the Egyptian auditing standards, after being amended, should include guidelines to improve the language level of auditors' reports. This can be achieved by providing training courses and issuing necessary instructions to ensure that audit reports serve as effective communication tools that support investor confidence.

Second, the Financial Regulatory Authority should develop a mechanism to examine and evaluate the readability of financial reports in general, and external audit reports in particular, with regards to their linguistic wording. The Authority should also disclose the results of this evaluation, which can increase credibility among investors. In addition, it should activate peer review programs among auditing firms. This will enable the exchange of experiences in the field of issuing audit reports. The success of the audit profession in communicating the outcomes of the audit process to market's participants depends on the effectiveness of the communication tool, which is the audit report.

Third, the auditing firms in Egypt should focus on industrial specialization in order to gain practical experience and accurate knowledge of the nature and problems of specific industries. This will help to reduce effort and increase the audit firm's market share, which will in turn improve the readability of the issued audit reports.

Last but not least, scientific conferences hosted by accounting departments in Egyptian universities should focus on the issue of readability of audit reports, whether before or after their amendment, to keep pace with the ISA. Also, it is recommended conducting more academic research and studies in the field of accounting information systems in the Arab world. This will help to develop models and software that are compatible with the Arabic language and can infer the impact of readability on financial reports in general, and audit reports in particular, using relevant measures and indicators.

Accordingly, based on the research objective, problem, and findings, the researchers suggest some potential areas for **future research**. Accounting research in Egypt should be directed towards the following areas; the impact

of the auditor's industrial specialization, audit firm size, and rotating the auditor's firm or rotating the audit partner on the readability level of audit report. Also, investigating determinants of readability of the interim report, and the impact of audit quality on the association between the readability of financial reporting and audit fees. Moreover, examining the effect of digital assets disclosure on the readability level of the audit report using an experimental methodology may be fruitful.

References

- AbdRahman, R., Zaini, A. R., Husaini, M. H., & Elias, K. A. (2016). Arabic text readability measurement system. *e-BANGI*, 11, 188-203.
- Ali, A.W.N. (2021). *The impact of the Corona pandemic on the audit report*. Working paper, presented at the Fifth Scientific Conference of the Faculty of Commerce, Tanta University, April 2021, titled “The Impact of the Corona Crisis on the National Economy: Proposals and Solutions” (In Arabic).
- Al-Tamimi, A. K., Jaradat, M., Aljarrah, N., & Ghanim, S. (2014). AARI: Automatic Arabic readability index. *The International Arab Journal of Information Technology*, 11(4), 370-378.
- Arens, A. A., R. J. Elder, and M. S. Beasley. (2023). *Auditing and assurance services: An integrated approach*. 18th Edition. Upper Saddle River, NJ: Prentice- Hall.
- Asare, S. K., & Wright, A. (2012). The effect of type of internal control report on users’ confidence in the accompanying financial statement audit report. *Contemporary Accounting Research*, 29(1), 152-175.
- Badawy, H. A. E. S., & Ibrahim, A. N. (2016). Is the readability of corporate textual disclosures measurable?. *Available at SSRN 3205810*.
- Barth, M. E., & Schipper, K. (2008). Financial reporting transparency. *Journal of Accounting, Auditing & Finance*, 23(2), 173-190.
- Bepari, M. K. (2023). Audit committee characteristics and Key Audit Matters (KAMs) disclosures. *Journal of Corporate Accounting & Finance*, 34(1), 152-172.
- Chang, Y. T., & Stone, D. N. (2019a). Proposal readability, audit firm size and engagement success: Do more readable proposals win governmental audit engagements?. *Managerial Auditing Journal*, 34(8), 871-894

- Chang, Y. T., & Stone, D. N. (2019b). Why does decomposed audit proposal readability differ by audit firm size? A Coh-Matrix approach. *Managerial Auditing Journal*, 34(8), 895-923.
- Church, B. K., Dai, N. T., Kuang, X., & Liu, X. (2020). The role of auditor narcissism in auditor-client negotiations: Evidence from China. *Contemporary Accounting Research*, 37(3), 1756-1787.
- Courtis, J. K. (1995). Readability of annual reports: Western versus Asian evidence. *Accounting, Auditing & Accountability Journal*, 8(2), 4-17.
- Daoust, L., & Malsch, B. (2020). When the client is a former auditor: Auditees' expert knowledge and social capital as threats to staff auditors' operational independence. *Contemporary Accounting Research*, 37(3), 1333-1369.
- Dempsey, S. J., Harrison, D. M., Luchtenberg, K. F., & Seiler, M. J. (2012). Financial opacity and firm performance: The readability of REIT annual reports. *The Journal of Real Estate Finance and Economics*, 45, 450-470.
- Fakhfakh, M. (2013). The readability of standardised reports by the International Federation of Accountants. *Journal of Commerce and Accounting Research*, 2(1), 10-28.
- Fakhfakh, M. (2015). The readability of international illustration of auditor's report: An advanced reflection on the compromise between normative principles and linguistic requirements. *Journal of Economics, Finance and Administrative Science*, 20(38), 21-29.
- FRA, Financial Regulatory Authority. (2023). *Egyptian Stock Exchange listing and delisting rules*. Available at: <http://www.fra.gov.eg>
- Francis, B., Hasan, I., Park, J. C., & Wu, Q. (2015). Gender differences in financial reporting decision making: Evidence from accounting conservatism. *Contemporary Accounting Research*, 32(3), 1285-1318.

- Gambetta, N., Sierra-García, L., García-Benau, M. A., & Novejarque-Civera, J. (2023). The informative value of key audit matters in the audit report: Understanding the impact of the audit firm and KAM type. *Australian Accounting Review*, 33(2), 114–134.
- Grosz, M. P., Leckelt, M., & Back, M. D. (2020). Personality predictors of social status attainment. *Current Opinion in Psychology*, 33, 52–56.
- Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics*. 5th Edition. McGraw-Hill Companies, Inc. New York, NY.
- Gul, F. A., Srinidhi, B., & Ng, A. C. (2011). Does board gender diversity improve the informativeness of stock prices?. *Journal of Accounting and Economics*, 51(3), 314–338.
- IAASB, International Auditing and Assurance Standard Board. (2015a). Going concern. International Standard on Auditing No. 570 (revised). Available at: www.iaasb.org.
- IAASB, International Auditing and Assurance Standard Board. (2015b). *Forming An Opinion and Reporting on Financial Statements*. International standard on auditing No. 700 (revised). Available at: www.iaasb.org.
- IAASB, International Auditing and Assurance Standard Board. (2015c). *Communicating Key Audit Matters in Independent Auditor's Report*. International Standard on Auditing No. 701 (revised). Available at: www.iaasb.org.
- IAASB, International Auditing and Assurance Standard Board. (2015d). *Modification To the Opinion in The Independent Auditor's Report*. International Standard on Auditing No. 705 (revised). Available at: www.iaasb.org.
- IAASB, International Auditing and Assurance Standard Board. (2015e). *Emphasis Of Matter Paragraphs and Other Matters Paragraphs in The*

- Independent Auditor's Report*. International Standard on Auditing No. 706 (revised). Available at: www.iaasb.org.
- IAASB, International Auditing and Assurance Standard Board. (2015f). *The Auditor's Responsibilities Relating to Other Information*. International Standard on Auditing No. 720 (revised). Available at: www.iaasb.org.
- Jayasree, M., & Shette, R. (2021). Readability of annual reports and operating performance of Indian banking companies. *IIM Kozhikode Society & Management Review*, 10(1), 20–30.
- Lakhal, F., Aguir, A., Lakhal, N., & Malek, A. (2015). Do women on boards and in top management reduce earnings management? Evidence in France. *Journal of Applied Business Research (JABR)*, 31(3), 1107–1118.
- Langella, C., Anessi-Pessina, E., Botica Redmayne, N., & Sicilia, M. (2023). Financial reporting transparency, citizens' understanding, and public participation: A survey experiment study. *Public Administration*, 101(2), 584–603.
- 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. (2014). Measuring readability in financial disclosures. *The Journal of Finance*, 69(4), 1643–1671.
- Loughran, T., & McDonald, B. (2016). Textual analysis in accounting and finance: A survey. *Journal of Accounting Research*, 54(4), 1187–1230.
- Pucheta, M. C., Bel-Oms, I., & Olcina-Sempere, G. (2016). Corporate governance, female directors and quality of financial information. *Business Ethics: A European Review*, 25(4), 363–385.
- Ravi, R., & Hong, Y. (2014). Firm opacity and financial market information asymmetry. *Journal of Empirical Finance*, 25, 83–94.
- Ricci, C. W. (2017). Annual report readability: The case of the Fortune 500. *Journal of Applied Business and Economics*, 19(11), 43–51.

- Roiston, T. A., & Harymawan, I. (2020). Firm size, firm age and the readability of the MD&A report. *International Journal of Innovation, Creativity and Change*, 12(7), 135–149.
- Rosenthal, S. A., & Pittinsky, T. L. (2006). Narcissistic leadership. *The Leadership Quarterly*, 17(6), 617–633.
- Salehi, M., Dalwai, T., & Arianpoor, A. (2023). The impact of narcissism, self-confidence and auditor's characteristics on audit report readability. *Arab Gulf Journal of Scientific Research*, 41(2), 202–223.
- Salehi, M., Lari Dasht Bayaz, M., Mohammadi, S., Adibian, M. S., & Fahimifard, S. H. (2020). Auditors' response to readability of financial statement notes. *Asian Review of Accounting*, 28(3), 463–480.
- Salehi, M., Rouhi, S., Usefi Moghadam, M., & Famarzi, F. (2022). Managers' and auditors' narcissism on the management team's stability and relative corporate performance. *International Journal of Productivity and Performance Management*, 71(4), 1490–1514.
- Sardari, R., Setayesh, M., Kordlouie, H., & Banimahd, B. (2021). Studying the moderating role of audit committee independence in the relationship between CEO narcissism and real earnings management. *Iranian Journal of Finance*, 5(3), 58–77.
- Suttipun, M. (2022). External auditor and KAMs reporting in alternative capital market of Thailand. *Meditari Accountancy Research*, 30(1), 74–93.
- Thiruvadi, S., & Huang, H. W. (2011). Audit committee gender differences and earnings management. *Gender in Management: An International Journal*, 26(7), 483–498.
- Velte, P. (2018a). Does gender diversity in the audit committee influence key audit matters' readability in the audit report? UK evidence. *Corporate Social Responsibility and Environmental Management*, 25(5), 748–755.

- Velte, P. (2018b). Is audit committee expertise connected with increased readability of integrated reports: Evidence from EU companies. *Problems and Perspectives in Management*, 16 (2), 23–41.
- Velte, P. (2020). Associations between the financial and industry expertise of audit committee members and key audit matters within related audit reports. *Journal of Applied Accounting Research*, 21(1), 185–200.
- Vernon, A. C., Natesan, S., Modo, M., & Kapur, S. (2011). Effect of chronic antipsychotic treatment on brain structure: A serial magnetic resonance imaging study with ex vivo and postmortem confirmation. *Biological Psychiatry*, 69(10), 936–944.
- Xu, Q., Fernando, G. D., & Tam, K. (2018). Executive age and the readability of financial reports. *Advances in Accounting*, 43, 70–81.