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**Article**

## Textual attributes on integrated reporting quality: Evidence in Asia and Europe

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# Textual attributes on integrated reporting quality: Evidence in Asia and Europe

Wiwik Supratiwi<sup>1</sup>, Dian Agustia<sup>1\*</sup>, Wiwiek Dianawati<sup>1</sup> and Tota Panggabean<sup>2</sup>

**Abstract:** Textual attribute integrated reporting refers to the difficulty level of readability and word length (narrative) of the information disclosed. The conciseness of information requires minimizing the length of words (narrative), offset by the increased readability of the integrated reporting. A sample of 973 integrated reports of companies in Asia and Europe from 2016-to 2019 was used. The hypotheses and research results indicate that readability difficulties and word length (narrative) negatively affect integrated reporting quality. That shows that the more concise the information disclosed, the more significant the reduced quality of integrated reporting. Readability difficulties and word length (narrative) eliminate the meaning of the information disclosed. Stakeholder understanding of information is an aspect that companies must consider in meeting information needs.

**Subjects:** Accounting; Business; Management; Corporate Governance; and Finance

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### PUBLIC INTEREST STATEMENT

This paper investigates Textual Attributes (difficulty level of readability and narrative) on Integrated Reporting Quality: Evidence in Asia and Europe. The level of readability of the report is a general understanding of the aspect of the level of ease or difficulty in reading information. Integrated reporting is one of the newest objects of textual analysis in current accounting research, which deals with report readability analysis and textual attributes. The urgency of this research is that one of the characteristics of integrated reporting disclosure is the conciseness of information that can influence stakeholders in understanding the information presented. The researcher believes that the increase in reporting characteristics must be balanced with textual attributes (readability difficulty and word length) to understand the conciseness of information in integrated reporting. The results of this study indicate that the difficulty level of readability reduces the improvement in the quality of integrated reporting. The more concise the information disclosed in the unified reporting, the greater the difficulty of readability.

**Keywords:** integrated reporting quality; length; narrative; reading difficulty; textual attributes

**Subjects:** M41; G32; M14

## 1. Introduction

The development of research related to the extent to which aspects of textual or linguistic attributes of financial disclosures (e.g., readability, sentiment, and style) influence the decision-making process of investors or other users of information is still relatively small (Fakhfakh & Ntim, 2016b; Lang & Stice-Lawrence, 2015; Li, 2010; Loughran & McDonald, 2016). Dyer et al. (2017), Guay et al. (2016), and KPMG (2011) and Li (2008) stated that there was an inability of the textual attributes of the annual report to communicate the information well report users easily understand that. There is an increasing demand for new disclosure styles to provide relevant information to stakeholders that is easier to understand. Transparency and connectivity of financial and non-financial information disclosed in integrated reporting will signal capital providers or investors. Following the confusion hypothesis, companies that disclose information presented in annual reports often make it difficult for users to understand the meaning of the reported disclosure. The relationship between the level of readability and the variability of the information presented is related to the information's clarity and ease of exposure (Curtis, 1998). So companies must improve the coherence of information to make it easy to understand and achieve communication goals between companies and stakeholder pressure (Wolf & Gibson, 2005).

Disclosure of company information must be presented in quality without gaps and causing errors, which will hinder the decision-making process stakeholder (Adegboyegun et al., 2020; Frias-Aceituno et al., 2013; Lai et al., 2016). Integrated reporting balances financial information with non-financial information (Vitolla et al., 2019). The company must consider the emphasis on the nature of materiality; this is because the concept of materiality affects the process of formulating and implementing company strategies so that business activities run well and mitigate the risks that will be faced (Higgins et al., 2014; IIRC, 2013). The importance of the concept of materiality has been emphasized in the background of the integrated reporting framework (IIRC), in which companies must consider the principle of materiality in presenting material information to stakeholders (Gerwanski et al., 2019; IIRC, 2013). Then companies disclosing company information must pay attention to the effectiveness of information or the type of information and the level of information transparency.

Unerman (2000) states that to assess the quality of corporate disclosures, it is necessary to consider the overall content, including title, writing style, nature of information, scope, and period (Asif et al., 2013). Previous research shows that corporate disclosure's textual attributes and qualitative aspects must be considered to create a good information environment (Potter & Soderstrom, 2014; Ramanna, 2013). The quality of disclosure can be based on two dimensions of textual attributes, namely the dimensions of "amount" and "style" (Melloni et al., 2017). The quantity dimension refers to the amount of information disclosed by the company, while the style dimension refers to language that can emphasize communication style and readability (Stone & Lodhia, 2019). The company's advantage in processing information disclosed through integrated reporting will mitigate risk uncertainty and assess company performance (Lambert et al., 2007; Zhou et al., 2017).

The level of readability of the report is a general understanding of the aspect of the level of ease or difficulty in reading information. This statement is supported by previous research that word structure or word length can affect information users' understanding of a sentence, especially concerning company reports (Bayerlein & Davidson, 2012; Gerwanski et al., 2019; Velte, 2018). The research shows that readability is a crucial element in providing facilities to users. Only a few studies have proven that textual attributes play a role in influencing the quality of information

disclosed through annual reporting (Caglio et al., 2020; Potter & Soderstrom, 2014; Ramanna, 2013). Referring to the integrated reporting (IIRC) framework states that integrated reporting has three main textual characteristics in influencing the quality of integrated reporting (IR), namely reading difficulty, length, and tone (biased tone). Research from Cho et al. (2010); Muslu et al. (2019) examines the textual attributes of a combination of financial and non-financial reporting. This study aims to assess the conciseness of information used for integrated reporting. Other studies analyze the textual disclosure of narrative reports in financial reporting (De Franco et al., 2015; Lang & Stice-Lawrence, 2015; Li, 2008; Loughran & McDonald, 2016).

Integrated reporting is one of the newest objects of textual analysis in current accounting research, which deals with report readability analysis and textual attributes. The conciseness of the information presented in the integrated reporting is one aspect that stakeholders consider related to the level of readability in understanding the information. Previous research shows that elements of textual attributes or grammatical aspects in the disclosure of company financial statements (for example, readability, emphasis, and style) can affect the effectiveness of submission to report users (Caglio et al., 2020; Lang & Stice-Lawrence, 2015; Li, 2008; Li 2010; Loughran & McDonald, 2016). The importance of the readability aspect of corporate information disclosure aims to improve the quality of information presentation and minimize the occurrence of information asymmetry (Bacha & Ajina, 2020; Hassan et al., 2019; Li, 2010). On the other hand, the analysis of the lexical characteristics of the main language level of research related to information readability shows that these characteristics can assess the quality of report disclosures (De Franco et al., 2015; Melloni et al., 2017).

The urgency of this research is that one of the characteristics of integrated reporting disclosure is the conciseness of information that can influence stakeholders in understanding the information presented. Following Pistoni et al. (2018), one aspect of improving the quality of integrated reporting is the conciseness of the information presented. The brevity of the presentation of the information can affect how users understand the information; it may take a long time to think about one type of information. Readability is one of the fundamental aspects that must be considered as an increase in the quality of separate (consolidated) financial reporting can affect the audit information provided (Fakhfakh & Ntim, 2016a). The level of readability plays a role in knowing how integrated reporting presents information that all stakeholder groups must easily understand. This statement is supported by Courtis (1986), Courtis (1995), Jones and Shoemaker (1994), and Rahman (2014).

The brevity of information requires companies to present material, selected, and detailed information so that companies must try to provide information that does not confuse stakeholders as users of information. This statement follows stakeholder theory (Freeman & McVea, 2001; Du Toit, 2017). According to stakeholder theory, this study proves that textual attributes can affect integrated reporting quality across continents. Background researchers assessed the continents of Asia and Europe to determine whether integrated reporting quality from these two continents demonstrates the level of excellent quality compared to other continents. WBCSD (2019) states that European countries have 45% and Asia has 19%, it showed the level of prevalence in the delivery of information in integrated reporting. The significant difference in the prevalence percentage between Europe and Asia encourages researchers to examine the level of readability and textual attributes that influence the quality of integrated reporting. Stakeholder theory emphasizes that companies are likely to adopt integrated reporting disclosures to meet the information needs of stakeholders, or they already think that what they are doing is the “right” thing to do. In comparison, legitimacy theory emphasizes the aspect of environmental legitimacy from external parties that can affect the extent of disclosure by the company. The extent of disclosure of information to the public aims to maintain a good reputation and market share. Previous studies used stakeholder theory in the context of integrated reporting implementation and quality levels (e.g. Frias-Aceituno et al. (2013), García-Sánchez et al. (2013), and Vaz et al. (2016)). Companies must pay attention to the conciseness of information in integrated reporting not to confuse

stakeholders; this can affect the decision-making process. This statement follows the legitimacy theory (Lehman, 1983). Previous studies using legitimacy theory in the context of corporate reporting are Ahmed Haji (2013), Ahmed Haji and Anifowose (2016), Chen et al. (2016), Lai et al. (2016), and Montecchia et al. (2016), and Du Toit (2017).

This study provides empirical evidence that textual attributes of conciseness of information can affect integrated reporting quality. The researcher believes that the increase in reporting characteristics must be balanced with textual attributes (readability difficulty and word length) to understand the conciseness of information in integrated reporting. Integrated reporting was developed as a potential response to the demand for information needs of stakeholders. Textual attributes in this study used two dimensions of measurement, namely the dimensions of quantity and style. The researcher uses the total words in the integrated reporting in the number dimension. In contrast, the style dimension uses the readability aspect of the integrated reporting by combining the three readability measurements from the Flesch Kincaid Grade Level, Gunning Fog Index, and SMOG Index. This measurement dimension has been used by previous researchers, namely Caglio et al. (2020) and Melloni et al. (2017).

This study indicates that textual attributes, namely the level of readability difficulty and word length (narrative), have a significant adverse effect on improving the quality of integrated reporting. Presenting more concise information in integrated reporting can increase readability difficulty. Narrative text in the report is expressed briefly in images, graphics, or other visual representations, which can increase readability and are very influential in providing understanding to information users. The brevity of information requires companies to present material, selected, and detailed information to try to present information that does not confuse stakeholders as users of information. Companies must understand that the components of narrative information are presented in an appropriate composition. That leads to one of the quality characteristics of integrated reporting, namely the brevity of information.

The next section of this paper is structured as follows. Section 2 describes the literature review and development of research hypotheses. Section 3 describes the research methodology and research data. Sections 4–6 present the empirical results and discussion. Finally, section 7 concludes this paper.

## 2. Literature review

### 2.1. Textual attributes of integrated reporting quality

Integrated reporting quality is a connected, integrated report of the type and amount of information disclosed by considering the IR framework and the right mindset (Eccles & Serafeim, 2017; Pistoni et al., 2018; PricewaterhouseCoopers, 2014). Measurement of integrated reporting quality uses the model integrated reporting scoreboard (IRS) developed by Pistoni et al. (2018). The scorecard considers four areas: background, content, form, assurance, and reliability. Companies face difficulties in adopting integrated reporting; this is related to too many items of information that cannot be disclosed in integrated reporting (Agustia, Sriani, Wicaksono & Gani, 2020). IIRC (2011) states that companies should increase the amount of information addressed to stakeholders, namely information related to complex financial performance reports, management statements, taxes, remuneration, corporate strategy, risk management, and sustainability performance. The main problems in assessing the quality of integrated reporting are the lack of connectivity between strategy, business models, performance, and prospects, poor narrative and presentation of diagrams, informative gaps, involvement of stakeholders, completeness of the information, and limited third-party verification (Eccles & Serafeim, 2017).

The annual report cannot be presented textually well, so report users cannot understand it (Dyer et al., 2017; Guay et al., 2016; KPMG, 2011; Li, 2008). In order to provide relevant information to stakeholders in an easy-to-understand manner, the demand for new disclosure styles needs to



increase. Transparency and connectivity of financial and non-financial information disclosed in the integrated reporting signal to capital providers or investors. According to the obfuscation hypothesis, organizations that disclose information often find it difficult for users to provide less clear information. The relationship between the level of readability and information volatility presented is related to the clarity and clearness of the information (Courtis, 1998). The quality of disclosure can be based on two dimensions of text attributes: “quantity” and “style” (Melloni et al., 2017). The quantity dimension refers to the amount of information disclosed by the company, while the style dimension refers to language that can emphasize communication style and readability (Stone & Lodhia, 2019).

Word structure or word length can affect users’ understanding of a sentence, especially concerning company reports (Bayerlein & Davidson, 2012; Gerwanski et al., 2019). The important readability aspect of corporate information disclosure aims to improve the quality of information presentation and minimize the occurrence of information asymmetry (Bacha & Ajina, 2020; Hassan et al., 2019). On the other hand, the analysis of lexical characteristics or the level of primary language as studying the level of readability in assessing the quality of a disclosure (De Franco et al., 2015; Li, 2010; Melloni et al., 2017).

## **2.2. Reading difficulty and length (Narrative) on integrated reporting quality**

Companies are required to pay attention to the textual aspects of attributes or textual analysis in the reporting process; this aims to build a good image and strengthen the legitimacy of stakeholders towards the company (Hopwood, 2009). The quality of the information presented in the integrated reporting concisely puts pressure on the company that the materiality of the information presented will not reduce the meaning of the information. Previous research has examined how the narrative of a company’s annual report can improve stakeholder understanding of the information disclosed. The results show that the level of readability or narrative aspect positively influences stakeholder perceptions of the company (Clatworthy & Jones, 2001; Smith & Taffler, 1992; Sydserff & Weetman, 2002; Yuthas et al., 2002). Readability is one of the fundamental aspects that is considered an increase the quality of separate (consolidated) financial reporting (Fakhfakh & Ntim, 2016a).

The level of readability of financial statements is an important aspect that must be considered in terms of how the information disclosed can explain the meaning. Information conciseness is one of the characteristics of integrated disclosure. The conciseness of the presentation of information can affect how users understand information, and it may take a long time to think about one type of information. Research by Melloni et al. (2017), Cheung and Lau (2016), Jang and Rho (2016), and Zappettini and Unerman (2016) show that the textual analysis in the annual report does not provide a picture of the company’s actual performance. This statement shows that traditional annual reports still cannot provide an understanding for stakeholders; the annual report in a framework still pays attention to the narrative aspect as an explanation of the information. Meanwhile, integrated reporting has the characteristics of concise reporting to limit the narrative aspects of information.

Research from Cho et al. (2010) and Muslu et al. (2019) examines the textual attributes of a combination of financial and non-financial reporting. This study aims to assess the conciseness of information used as the basis for integrated reporting. Melloni et al. (2017) show that integrated reporting that is less concise will tend to have easy readability; this leads to an obfuscation strategy in which companies disclose information, often making it difficult for users to provide unclear information (Courtis, 1998). The important readability aspect of corporate information disclosure aims to improve the quality of information presentation and minimize the occurrence of information asymmetry (Bacha & Ajina, 2020; Hassan et al., 2019). On the other hand, the analysis of lexical characteristics or the level of primary language is one factor in assessing the quality of a disclosure (De Franco et al., 2015; Melloni et al., 2017).

Pistoni et al. (2018) showed that the brevity of disclosure could affect the quality of integrated reporting; this is because the company already knows the needs of stakeholders regarding the information to be disclosed. Summary of information is described with information in diagrams, tables, or figures to replace the narrative aspect in integrated reporting. Other research shows that the narrative text in the report is expressed briefly in the form of images, graphics, or other visual representations; as a result, the level of readability difficulty is very influential in being able to provide understanding to information users (Richards & van Staden, 2015; Rutherford, 2016; Stone & Parker, 2016). Eccles and Serafeim (2017) stated that the quality assessment of integrated reporting is based on the absence of connectivity between strategies, business models, performance, and prospects, poor narrative and presentation of diagrams, informative gaps, and stakeholders' involvement, completeness of the information and limited third-party verification. Therefore, the researcher proposes the following hypotheses:

- H<sub>1</sub>: The level of readability difficulty can reduce the quality improvement of integrated reporting.
- H<sub>2</sub>: The word length (narrative) level can reduce the quality improvement of the integrated reporting.

### 3. Research methodology

#### 3.1. Sample construction

Researchers' research data is the integrated reporting of companies in Asia-Europe. The sample period used in this study is 2016–2019. We determined the reporting period from 2016 to 2019 because it is a transitional period from breakthrough to building momentum towards adopting integrated reporting. This transition period is IIRC's strategy to bring consistency, coherence, and clarity to the company's reporting framework (IIRC, 2017, 2018). Integrated reporting is obtained from the official website, namely the integrated reporting examples database and the company website. Researchers used unbalanced panel data (Shao et al., 2011). The basis for determining the population of companies in Asia and Europe is because these two countries provide integrated reporting that is still voluntary and rapidly adopt integrated reporting according to the IR framework from IIRC (Deloitte, 2015). The final data used by the researchers were 973 integrated reports, see, Table 1.

#### 3.2. Empirical model

The effect of readability difficulty and word length (narrative) and integrated reporting quality were tested by estimating the regression model as follows:

$$IRQ = \alpha + \beta_1 READF + \beta_2 LEV + \beta_3 ROA + \beta_4 FSIZE + \beta ROE + e \quad (1)$$

$$IRQ = \alpha + \beta_1 LENGHT + \beta_2 LEV + \beta_3 ROA + \beta_4 FSIZE + \beta ROE + e \quad (2)$$

We measure the dependent variable, i.e. IRQ is using a model integrated reporting scoreboard (IRS) developed by Pistoni et al. (2018). A model scorecard considers four areas: background, content, form, assurance, and reliability. The maximum score of integrated reporting quality is 75. The level of reliability of the scoreboard of integrated reporting quality is tested through Cronbach's alpha. The alpha or reliability test aims to avoid the subjectivity of content related to scoring on the scoreboard of integrated reporting. This test is carried out to reduce the subjectivity of scoring from each integrated reporting assessment area so that the score from the IRQ can show a reliable value. This relates that every 23 items on the scoreboard contribute gradually to the integrated reporting quality assessment (Pistoni et al., 2018).

Then, to measure the level of readability difficulty (READ), the researchers combined measurements from the readability formula (Flesch-Kincaid Level, Gunning Fog Index, and Simple Measure



**Table 1. ~TC~**

**Panel A. Sample selection for firm-year observations**

Sample selection	Firms-Years
Number of firm-years with available information from IIRC database (2016–2019)	1224
Less: Not acces download from firms website	98
Less: Not Using English	153
Final amount of observations	973

**Panel B. Industry breakdown**

Industry Descriptions	Firms-years	Percentage
Agriculture, Forestry and Fishing	122	12,5
Mining	111	11,4
Manufacturing	97	9,96
Transportation, Communications, Electric, Gas and Sanitary service	112	11,5
Wholesale Trade	104	10,6
Retail Trade	130	13,3
Finance, Insurance and Real Estate	104	10,6
Services	193	19,8
Total Sample	<b>973</b>	

of Gobbledygook; Caglio et al., 2020; Melloni et al., 2017). As for word length (narrative), the researcher used the number (total) of words in integrated reporting (Caglio et al., 2020). In addition, a control variable was used in this research model, namely Firm size (SIZE) measured by the natural logarithm of total assets (Alfiero et al., 2017; García-Sánchez et al., 2019; Sriani & Agustia, 2020). Leverage (LEV) is measured by the ratio of total debt to total equity (Alfiero et al., 2017; García-Sánchez et al., 2019; Sriani & Agustia, 2020). Profitability is measured using ROA (Alfiero et al., 2017; Lai et al., 2016; Sriani & Agustia, 2020). Return on equity (ROE) is measured by the ratio between net profit after tax and total company equity (Liu & Anbumozhi, 2009; Vitolla et al., 2019). Table 2 explains the measurement of variables in this research.

**4. Result and discussion**

**4.1. Result**

Table 2 shows that the integrated reporting quality in Asia and Europe has good quality on average. That is indicated by an average (mean) of 61.644; this value means that integrated reporting quality is almost perfect. The quality of integrated reporting is not matched by the difficulty level of readability of the information presented. The average value of the difficulty level of readability is 20.027; this shows that some company stakeholders classify the level of readability of information as very difficult to understand. They were then followed by the word length (narrative) integrated reporting, with an average value (mean) of 27.673. That means that integrated reporting in Asia and Europe has met the main characteristics: conciseness of presentation. The following Table 3 presents descriptive statistics.

Based on Table 4, it is observed that the readability difficulty level of the integrated reporting based on the year of observation shows an increase. The increasing difficulty of legibility illustrates that companies in Asia and Europe have paid attention to the conciseness of presenting

Table 2. Variable measurement		
Variable Definition		Measurement
Dependent Variable		
<b>Integrated Reporting Quality</b>	IRQ	Integrated reporting scoreboard (IRS) Pistoni et al. (2018). Giving a score in four areas, namely background, content, form and assurance, and reliability
Independent Variable		
<b>Reading Difficulty</b>	READF	This measurement is based on combining measurements of readability level, namely Flesch-Kincaid Level, Gunning Fog Index, and Simple Measure of Gobbledygook.
<b>Word Length (Narratives)</b>	LENGTH	This measurement is based on the number (total) of words in the integrated reporting.
Control Variable		
<b>Firm Size</b>	SIZE	Measured by the natural logarithm of total assets
<b>Leverage</b>	LEV	Measured by the ratio of total debt to total equity
<b>Profitability</b>	ROA	Measured by the ratio of total profits to total assets
<b>Return on Equity</b>	ROE	It is measured by the net income ratio after tax to total company equity.

Table 3. Descriptive statistics					
	Obs	Mean	Std. dev	Minimum	Maximum
IRQ	973	61.644	7.902112	40.000	74.000
READF	973	20.027	2.892123	8.833	76.427
LENGTH	973	27.673	7.737354	2.008	195.000
SIZE	973	21.573	0.78153	20.013	25.486
LEV	973	1.077	1.331445	0.001	10.008
ROA	973	0.986	4.081597	0.000	31.415
ROE	973	0.823	1.591264	0.001	12.716

Note. This table presents descriptive statistics of the variables used in our analysis. IRQ scores are based on four areas, background, content, form and assurance, and reliability. READF is based on combining measurements of readability level, namely Flesch-Kincaid Level, Gunning Fog Index, and Simple Measure of Gobbledygook.

LENGTH is based on the number (total) of words in the integrated reporting. SIZE is by the natural logarithm of total assets. LEV is by the ratio of total debt to total equity. ROA is the ratio of total earnings to total assets. ROE is the ratio between net income after tax to total company equity. All variables are defined in Table 1

information in integrated reporting. An increasing trend of readability difficulties is presented in Panel A. The conciseness of the presentation of information is directly proportional to the decrease in word length (narrative) to explain the information presented. Word length (narrative) is replaced with tables, pictures, graphs, or other visualizations. That shows that the word length (narrative)

**Table 4. Readability Difficulty Level Based Year Observation**

Year	Obs	Mean	Std. Dev	Min	Max
<b>Panel A: Readability Difficulty of Integrated Reporting Quality by Year</b>					
2019	204	20.41979	4.405381	12.9797	76.42713
2018	266	20.04739	2.423428	10.74749	42.8539
2017	263	19.75629	2.021111	10.27564	26.85437
2016	240	19.96565	2.515329	8.833233	39.96077
<b>Panel B: Length (narrative) of Integrated Quality-Based Reporting Year</b>					
2019	204	28,81,263	12,59,071	9,25,512	195
2018	266	27,64,946	6,256,041	3,25,073	92,6667
2017	263	27,00021	4,86,982	2,1756	46,102
2016	240	27,4681	6,146,888	2,00811	76,875

Note. Table 4 Panel A shows the level of readability difficulty based on the year of observation; this table distinguishes the composition of readability difficulty from integrated reporting disclosed by companies in Asia and Europe.

Panel B shows the word length (narrative) based on the year of observation; this table distinguishes the composition of word length or length from integrated reporting disclosed by companies in Asia and Europe.

from the year of observation has increased the number of narratives disclosed in the integrated reporting. Although the company presents information in the form of visualizations from year to year, it is also balanced with sufficient narratives to provide stakeholders with an understanding of the purpose of the information being disclosed.

Next, the level of readability difficulty by continent is examined. Table 5 shows that Asia has a higher mean than the European region, with a value of 20.511. This value indicates that Japan dominates the Asian region, this is shown in Table 5 panel C. However, Japan presents integrated reporting using Japanese, thus affecting the understanding of information users who are not accustomed to reading in Japanese. In contrast, the European region, when viewed from the maximum value of 76.427, shows that the European region still pays attention to word length as a supplement to visual information. Panel B presents that the European region's word length (narrative) is still relatively high.

Table 6 presents the Pearson correlation test; the level of readability difficulty and word length (narrative) can affect the quality of integrated reporting. The factor of user understanding of information is an important issue that must be considered because the conciseness of the information presented is not easy to understand and causes confusion. The correlation results show that the level of readability and word length (narrative) is not significant and negative. That indicates that the company presents concise, cohesive, and holistic information but has not considered how information users can understand the information presented concisely.

Table 7 shows the regression analysis results following the previously disclosed equation. The test uses multiple linear regression with robustness tests through a cluster model approach. The analysis technique in this study uses the help of STATA 14.0 software. The analysis results show that readability has a significant negative effect on integrated reporting quality (IRQ) with a p-value of  $0.052 < 0.100$ . These results indicate that  $H_1$  can be received, reducing the difficulty of integrating quality improvement reporting in Asia and Europe. Then the word length (narrative) has a significant negative effect on integrated reporting quality (IRQ) with a p-value of  $0.062 < 0.100$ . Similar to previous hypotheses,  $H_2$  is acceptable, where the length of words (narrative) can reduce the quality of integrated reporting.

**Table 5. Readability Difficulty Level Based Continental and Country Observation**

**Panel A: Readability Difficulty of Integrated Reporting Quality**

Continent	Obs	Mean	Std. Dev	Min	Max
Asia	426	20,51,156	1,942,269	8,833,233	26,85,437
Europe	547	19,64,896	3,409,934	10,27,564	76,42,713

**Panel B: Length (Narratives) of Integrated Reporting Quality**

Continent	Obs	Mean	Std. Dev	Min	Max
Asia	426	28,27,383	4,781,726	2,00811	46,102
Europe	547	27,20,526	9,395,593	2,1756	195

**Panel C: Distributed integrated reporting by country**

Continent	Country	Number of Integrated Reports
Asia	Hong Kong	24
	India	12
	Japan	304
	South Korea	14
	Malaysia	19
	Philippines	4
	Qatar	4
	Sri Lanka	8
	Thailand	4
	Turkey	11
Europe	United Arab Emirates	8
	Austria	8
	Belgium	8
	Brazil	3
	Canada	4
	Chile	4
	Colombia	4
	Denmark	3
	Finland	15
	France	30
	Germany	33
	Italy	38
	Netherlands	70
	Poland	8
	Russian Federation	39
Slovenia	3	
Spain	53	
Sweden	53	

(Continued)

Continent	Country	Number of Integrated Reports
	Switzerland	12
	Ukraine	4
	United Kingdom	136

Note. This table presents the distribution of integrated reporting disclosures in the Asian and European regions based on the IIRC official website classified by countries in those regions. Country is the country of origin of the company that discloses the integrated reporting. Number of Integrated Report is the number of integrated reports disclosed by country.

Note. Table 4 Panel A shows the level of readability difficulty by continent; this table distinguishes the composition of readability difficulties from integrated reporting disclosed by companies in Asia and Europe.

Panel B shows word length (narrative) by continent; this table distinguishes the composition of word length or word length from integrated reporting disclosed by companies in Asia and Europe.

#### **4.2. Reading difficulty and length (Narrative) impacted integrated reporting quality**

Pistoni et al. (2018) showed that the brevity of disclosure could affect the quality of integrated reporting; this is because the company already knows the needs of stakeholders regarding the information to be disclosed. Summary of information is described with information in diagrams, tables, or figures to replace the narrative aspect in integrated reporting. The conciseness of the presentation of information can affect how users understand information and may require considerable thought to understand one type of information. The results of this study indicate that the more concise the information disclosed in the integrated reporting, the more significant the increase in the level of readability difficulty. Richards support Richards and van Staden (2015) and Stone and Parker (2016) state that the narrative text in the report is expressed briefly in the form of pictures, graphics, or other visual representations, which can increase the level of difficulty of readability and is very influential in being able to provide understanding to information users.

The important readability aspect of corporate information disclosure aims to improve the quality of information presentation and minimize the occurrence of information asymmetry (Bacha & Ajina, 2020; Hassan et al., 2019). Companies are required to pay attention to the textual aspects of attributes or textual analysis in the reporting process; this aims to build a good image and strengthen the legitimacy of stakeholders to the company. According to stakeholder theory, this study proves that textual attributes can affect integrated reporting quality across continents. The brevity of information requires companies to present material, selected, and detailed information to try to present information that does not confuse stakeholders as users of information. The difficulty level of readability in integrated reporting can increase stakeholder confusion in understanding the information, thus affecting the quality of decision-making for the company's strategy. Following the legitimacy theory (Lehman, 1983), integrated reporting is presented to create a company image for its performance; if the company discloses information with a high readability level, it can result in inappropriate decisions.

The level of readability of the report is a general understanding of the aspect of the level of ease or difficulty in reading information. Word structure or word length can affect users' understanding of a sentence, especially concerning company reports. This study indicates that word length (narrative) significantly influences the improvement of the quality of integrated reporting. Companies must understand that the components of narrative information are presented in an appropriate composition. That leads to one of the quality characteristics of integrated reporting, namely conciseness of information. The correct length of words (narrative) will impact the level of readability that is easy to understand. De Franco et al. (2015); Lang and Stice-Lawrence (2015), Li (2010), and Loughran and McDonald (2016) show that narrative information in financial reporting can provide a better understanding. That is in line with

**Table 6. Pearson correlation**

	IRQ	READF	LENGTH	SIZE	LEV	ROA	ROE
IRQ	1,000						
READF	-0.049	1,000					
LENGTH	-0.042	0.964***	1,000				
SIZE	0.076**	-0.027	-0.018	1,000			
LEV	0.065**	-0.036	-0.028	0.179***	1,000		
ROA	0.066**	0.000	0.020	-0.044	-0.141***	1,000	
ROE	-0.033	0.001	0.004	0.128***	0.239***	-0.055*	1,000

Note. These table correlation coefficients of the variables used in our primary analysis. All variables are winsorized at the 1st and 99th percentiles. Values with asterisks \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1 % levels, respectively (2-tailed). All variables are defined in Table 1

**Table 7. Regression test**

	(1)		(2)	
	coeff	t-statistic	Coeff	t-statistic
READF	-0.128*	0.066(*)		
LENGTH			-0.043*	0.066(*)
SIZE	0.727**	0.018(*)	0.731**	0.017(**)
LEV	0.439**	0.021(**)	0.443**	0.021(**)
ROA	0.149*	0.058(*)	0.151*	0.055(*)
ROE	-0.274		- 0.274	
_cons	48.297***		46.841***	
Year FE	Included		Included	
Continent FE	Included		Included	
r2	0.021		0.021	
Number of obs	973		973	
F	2.69		2.70	
Prob>F	0.0043		0.0042	

Note. This table reports regression results on the relation between reading difficulty and length (narratives) on Integrated Reporting Quality. Detailed definitions of variables are provided in Table 1. All regressions control for the continent and year-fixed effects. Standard errors clustered at the firm and year and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% level, respectively.

other studies that word structure or word length can affect information users' understanding of a sentence, especially concerning company reports (Bayerlein & Davidson, 2012; Gerwanski et al., 2019).

## 5. Conclusion

This study provides empirical evidence that aspects of textual attributes, namely the readability difficulty and word length (narrative), can affect integrated reporting quality across Asia and Europe. That is because the conciseness of information by minimizing the length of words (narrative) can increase the readability of integrated reporting. It can directly affect the quality of integrated reporting, where the cause is that integrated reporting cannot convey information that company stakeholders easily understand. The results of this study indicate that the difficulty level of readability reduces the improvement in the quality of integrated reporting. The more concise the information disclosed in the unified reporting,



the greater the difficulty of readability. Then the research also shows that word length (narrative) can reduce the quality of integrated reporting. Companies must pay attention that the components of narrative information are presented following the quantitative information disclosed so that users can understand the meaning of the complexity of the information in the integrated report.

We want to emphasize that the aspects of readability difficulty, and word length (narrative) eliminate the meaning of the information disclosed. In reality, the ability to understand different users of information is expected to provide integrated reporting with easy-to-understand and concise information. This research is expected to provide an overview that aspects of readability and conciseness provide value from a company performance report. The legitimacy of stakeholders is the company's primary goal to get a good reputation through integrated reporting that is easy to understand. Asia and Europe, where each country has a variety of national languages, so corporate reporting must adapt to the needs of information users. However, this research shows that the level of readability and conciseness is still an essential factor that the company must consider. Given that the users of information do not only come from countries in Asia and Europe but may also come from across continents. This research is expected to provide empirical evidence that is used as a tool of consideration for companies in disclosing their information which must pay attention to the aspects of readability and conciseness. The researcher acknowledges several limitations in this research; first, the study did not use tone to assess the quality of the information presented in integrated reporting; second, this research does not reveal words, sentences, or paragraphs that indicate the level of readability difficulty on integrated reporting and the last this research does not compare the quality of IR readability in Asia and Europe.

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Conceptualization, W.S., D.A., W.D., and T.P.; methodology, W.S. and W.D.; software, W.S. and W.D.; validation, D.A. and T.P.; formal analysis, W.S. and W.D.; investigation, D.A. and T.P.; resources, W.D.; data curation, W.S. and W.D.; writing—original draft preparation, W.S. and W.D.; writing—review and editing, W.S.; visualization, W.D.; supervision, D.A. and T.P.; project administration, W.D. All authors have read and agreed to the published version of the manuscript.

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